



<https://theses.gla.ac.uk/>

Theses Digitisation:

<https://www.gla.ac.uk/myglasgow/research/enlighten/theses/digitisation/>

This is a digitised version of the original print thesis.

Copyright and moral rights for this work are retained by the author

A copy can be downloaded for personal non-commercial research or study, without prior permission or charge

This work cannot be reproduced or quoted extensively from without first obtaining permission in writing from the author

The content must not be changed in any way or sold commercially in any format or medium without the formal permission of the author

When referring to this work, full bibliographic details including the author, title, awarding institution and date of the thesis must be given

Enlighten: Theses

<https://theses.gla.ac.uk/>
research-enlighten@glasgow.ac.uk

MIGRATORY THINGS ON OR BENEATH
LAND: A STUDY OF PROPERTY AND RIGHTS
OF USE

BRYAN CLARK

Submitted in fulfilment of the degree of PhD within
the School of Law, University of Glasgow, August
2005.

ProQuest Number: 10391118

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



ProQuest 10391118

Published by ProQuest LLC (2017). Copyright of the Dissertation is held by the Author.

All rights reserved.

This work is protected against unauthorized copying under Title 17, United States Code
Microform Edition © ProQuest LLC.

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 – 1346

GLASGOW
UNIVERSITY
LIBRARY:

ABSTRACT

This thesis is concerned with a discussion and comparative analysis of how the law allocates property rights in respect of 'migratory things' - objects that appear naturally upon or beneath the ground, but which, by virtue of their own inherent characteristics, move to and fro across different tracts of land. In this sense, the work is concerned with running and percolating water, wild animals, fugacious minerals such as hydrocarbons and other ambient, sub-soil substances. The work's opening chapters (Part I) analyse the development of the common law relative to different migratory things with regard to both Scots and English law. The analysis therein reveals a diverse range of approaches taken to the issue of ownership including that migratory things may be subject to full ownership *in situ*, characterised by qualified proprietary rights to reduce into possession, or deemed ownerless until reduced into possession. The study reveals, however, that in general, the right to exploit the resource is of more import practically than ownership as such. In this sense, although in some cases limitations have been placed upon the ability of landowners to exploit migratory things, the dominant approach revealed is one of absolute dominium (an absolute right to exploit). One repercussion of this approach - and in fact other allocation rules - is that a legitimate exploitation, which has the effect of taking the resource from the land of another, will generally bestow upon the taker ownership and defeat any rights of ownership that the other previously held therein. This is facilitated by a doctrine termed 'the law of capture'. This judge-made rule provides a real challenge to recognised tenets of ownership, particularly the idea that an owner is protected against appropriation of his things by another without his consent.

In Part II, the role of policy inherent in the development of the law relative to migratory things is discussed. Inefficiencies and inequity associated with the absolute dominium approach are then examined and alternative approaches to resource allocation - including correlative rights, prior-appropriation and reasonable use rules - are analysed (primarily by reference to different US regimes for water allocation). The study uncovers a spate of different policy markers that underpin these disparate legal approaches including: encouraging economic investment and industrial development; providing low transactional costs; providing for certainty of rights to exploit; recognising the correlative rights of others; conserving the resource; limiting environmental damage; and adhering to existing precedent and constitutional obligations. The work reveals that how a regime determines appropriate policy choices may be grounded upon a number of factors.

including: the value of the thing (either in a private, monetary sense or wider social utility fashion); the physical ability to exert control over the substance until reduced into possession; the extent that its presence (and extent of its presence) is knowable *in situ*; the degree to which knowledge exists as to the impact – either in terms of efficiency or some other social utility repercussion – that any particular exploitation might hold; and how abundant or scarce the resource, in its natural state, is.

Part III of the thesis focuses upon the example of water law reform in Scotland in the aftermath of the Water Services and Water Environment (Scotland) Act 2003 ('WEWS'), which will, *inter alia*, radically shake-up existing approaches to rights of users to exploit water resources. This issue merits attention as water law is clearly the key 'live' issue in the field. By drawing on the policy rationale discussed in relation to different migratory things in previous chapters, the study analyses the extent that the post-WEWS regime is an appropriate one for water governance in Scotland. The regime is judged against a set of criteria which is distilled from various policy markers identified earlier in the work, namely: efficiency; ensuring beneficial uses; and legality. These aims are not compatible in their entirety and how the balance is struck by a regime with regard to competing policy goals is a key issue. In general, the thesis supports the shift from a general *laissez faire* approach to water abstraction and impoundments to a state-controlled regulatory regime in Scotland. In so doing, however, the work queries whether the policy balance has been struck in the most appropriate way and also identifies a number of pitfalls in the ability of the regime to meet its aims in practice. Conclusions are drawn in Part IV. The analysis presented in this thesis is important in respect of informing discussions regarding water governance in Scotland but it may also contribute to debates over allocation of rights to migratory things generally.

Acknowledgements

I owe a debt of gratitude to Tom Guthrie of the Law School, University of Glasgow, for his supervision of my research. Tom was instrumental in shaping the scope of the thesis and I have profited heavily from his insight, encouragement and criticism over the past few years. I am very thankful for the many hours he spent wading through numerous drafts of my work. I must also thank Professor Bill Gordon, previously of the University of Glasgow, who initially supervised this project before his retirement. Bill was always encouraging yet frank in his views about my efforts and above all helped focus my mind as to what a PhD was all about. Others who have usefully commented on various aspects of this work include the participants of the 2004 Scots Law Faculty Conference at Pitlochry and anonymous journal referees.

Without the support of my wife Kathleen I would never have completed this work. Thank you for your love, understanding, patience and helping raise a smile to my lips in the dark times. I am also thankful for the continual support of my Mum and Dad, family, friends and colleagues (particularly Shaun and Chris for your comradeship, golf and being in the same boat). Finally a special thanks to Flo for the company on all those late-night vigils spent in front of the computer screen.

Bryan Clark, April 2005

TABLE OF CONTENTS

Title	i
Abstract	ii
Acknowledgements	iii
Contents	iv
Part I	
<u>CHAPTER 1: INTRODUCTION</u>	1
<u>CHAPTER 2: PROPERTY RIGHTS IN WILD ANIMALS</u>	10
<u>Overview</u>	10
<u>General points regarding Animals <i>ferae naturae</i></u>	10
<u>Property rights under English law</u>	11
<u>Rationals</u>	13
<u>Property rights in Scotland</u>	15
<u>Where a party is in 'hot pursuit' under Scots and English law</u>	16
<u>Trespassers and property in game</u>	18
<u>Baiting of wild animals</u>	21
<u>Summary</u>	26
<u>CHAPTER 3: PROPERTY RIGHTS IN WATER</u>	28
<u>Introduction</u>	28
<u>English Law</u>	28
<u>General Points</u>	28
<u>Riparian rights</u>	29
<u>Underground water not in a known and defined channel</u>	31
<u>Comment</u>	35
<u>Ownership, property rights and subterranean water</u>	36
<u>Water Law in Scotland</u>	39
<u>General points</u>	39
<u>Ownership</u>	40
<u>Riparian Rights</u>	41
<u>Non-application of riparian rights to water outside a defined channel</u>	43
<u>Capture and underground water</u>	44
<u>England & Wales</u>	45
<u>Capture in Scotland</u>	50
<u>The right of support of underground water</u>	55

<i>The water exception in Scotland</i>	57
<i>The Legal Basis of Support in Scotland</i>	58
<u>Capture of water and proprietary remedies</u>	59
<u>Natural and non-natural uses of land</u>	61
<u>Summary of water rights</u>	63

CHAPTER 4: PROPERTY RIGHTS IN FUGACIOUS MINERALS AND OTHER SUBSOIL MATERIALS 66

<u>Introduction</u>	66
<u>Hydrocarbons and UK Law</u>	66
<u>US Theories of Hydrocarbon Ownership</u>	68
<u>Hydrocarbons as Res Nullius</u>	68
<u>'Texas Theory'</u>	70
<u>Qualified Ownership</u>	72
<u>Comment</u>	74
<u>Privy Council Authority</u>	74
<u>Fugacious Minerals in Scots Law</u>	76
<u>A Law of Capture and hydrocarbons</u>	77
<u>Nature of petroleum reserves</u>	77
<u>Origins of the law of capture</u>	78
<u>Capture of hydrocarbons/other fugacious substances</u>	81
<i>Natural Gas</i>	81
<i>Asphalt</i>	83
<i>Running Silt</i>	85
<i>Brine</i>	86
<u>Comment</u>	87
<u>Limitations on English common law notions of ownership</u>	88
<u>Injunction</u>	91
<u>Remedies under Scots law</u>	93
<u>Right of exploitation under the UK Offshore Petroleum Licensing Regime</u>	97
<u>Unitisation Powers of the Secretary of State</u>	98
<i>Unitisation agreements in the UK</i>	99
<i>Where unitisation might not be imposed</i>	100
<u>The Import of a Law of Capture</u>	102
<u>Property Rights of Licensees</u>	103
<u>The application of UK domestic law to the offshore regime</u>	104
<i>Does all UK civil law apply offshore?</i>	105
<u>Capture and the Licensing Regime</u>	106
<i>Rights under a licence</i>	107
<i>Is a rule of capture created under the licensing framework?</i>	110
<u>Comment</u>	112
<u>Summary of development of law relating to migratory things</u>	113

Part II

CHAPTER 5: POLICY CONSIDERATIONS UNDERPINNING MIGRATORY THINGS 116

<u>Introduction</u>	116
<u>Policy choices inherent in property and rights of use in migratory things</u>	116
<u>The Absolute Dominium model revisited</u>	120
<u>Some general problems with absolute dominium approaches</u>	120
<i>A diminished property right</i>	120
<u>The tragedy of the commons</u>	123
<i>Oil boom and bust</i>	124
<i>The Coase Theorem</i>	125
<i>Game Theory</i>	127
<i>Unitisation responses</i>	129
<u>Water Exploitation</u>	131
<u>The absolute dominium rule revisited</u>	131
<u>Reasons to reject the absolute ownership rule</u>	133
<i>Refusal to treat surface and sub-surface water the same</i>	133
<i>Lack of knowledge of underground water is no longer present today</i>	135
<i>Water not a renewable resource</i>	136
<i>Environmental problems</i>	136
<i>Water level drawdown.</i>	137
<u>Alternative approaches to groundwater governance</u>	138
<u>Protecting prior uses</u>	138
<u>Correlative rights</u>	143
<u>Reasonable use rule</u>	144
<i>Reasonable uses</i>	145
<u>California Correlative Rights</u>	147
<i>The doctrine of mutual prescription and equitable solutions</i>	149
<u>Overview</u>	152

Part III

CHAPTER 6: SCOTTISH WATER LAW REFORM: 'NUTS AND BOLTS' 157

<u>Introduction</u>	157
<u>Problems engendered by the current regime</u>	160
<u>The European Framework Water Directive and the Water Environment and Water Service (Scotland) Act 2003</u>	163
<u>The Water Framework Directive</u>	163
<u>WEWS</u>	165
<i>Basis for the regime</i>	166
<i>The River Basin</i>	168
<i>The proposed licensing regime</i>	170
<i>Licences</i>	171
<i>Small abstractions</i>	172
<i>Licence conditions</i>	174
<i>General Binding Rules</i>	175

<i>Simple Registration</i>	176
<i>Payment Regime</i>	176
<i>Management agreements</i>	177
<i>Environmental v Economic Analysis</i>	179
<i>Cost-benefit analysis of compliance with the directive</i>	181
<i>Time-limited licences</i>	184
<i>The licence of right legacy in England and Wales</i>	185
<u>Overview</u>	188

CHAPTER 7: SCOTTISH WATER LAW: ANALYSIS OF REGIME CHANGE

189

<u>Introduction</u>	189
<u>Lawful nature of the regime</u>	192
<i>General informing ECHR concepts</i>	193
<i>Margin of appreciation</i>	193
<i>Proportionality</i>	195
<u>The right to possessions</u>	195
<i>Introduction</i>	195
<i>UK interpretation v Strasbourg interpretation</i>	197
<i>Interpretation of provisions</i>	200
<i>Do water rights in Scotland fall within the ambit of possessions?</i>	201
<i>Does a right to take water fall within the ambit possessions?</i>	202
<i>How are rights protected?</i>	203
<i>Deprivation of property</i>	204
<i>Control of the use of property</i>	205
<i>Public interest</i>	206
<i>Fair balance and compensation</i>	207
<i>In accordance with the general interest</i>	208
<i>Proportionality (fair balance)</i>	208
<i>Peaceful enjoyment of possessions</i>	212
<u>Concluding remarks about possible HRA breach</u>	212
<u>The question of revocation of a licence</u>	215
<u>Positive obligations of public authorities under HRA</u>	218
<i>How does article 8 apply?</i>	220
<i>Positive obligations and the removal of water</i>	230
<u>Efficiency</u>	231
<u>Water markets</u>	232
<i>Potential obstacles to water trading</i>	235
<i>The English experience</i>	236
<i>Markets in optimum conditions don't always work</i>	239
<i>Trading and time-limited/revocable licences</i>	241
<u>Other efficiency tools</u>	242
<i>Dispute avoidance and transactional costs</i>	243
<u>Encouragement and facilitation of beneficial uses</u>	246
<u>Active participation of stakeholders</u>	249
<u>Dispute resolution and the protection of beneficial uses</u>	253
<u>Summary</u>	254
<u>Climatic factors and gaps in the regime</u>	256

Part IV

<u>CHAPTER 8: CONCLUSION</u>	260
Table of Cases	269
Bibliography	277

PART 1: CHAPTER 1

INTRODUCTION

This study is concerned with a discussion and comparative analysis of how the law allocates property rights¹ in respect of objects that appear naturally upon or beneath the ground but which, by virtue of their own inherent characteristics, move to and fro across different tracts of land. This definition encompasses such disparate, ambient resources as wild animals, running and percolating water, hydrocarbons and similar sub-soil substances such as silt and brine. In short, unlike objects which are either fixed upon or beneath land, such things are no respecters of artificial, man-made boundaries² and from time to time may move across borders either by natural causes or as a (direct or indirect) result of human intervention. For want of a more eloquent means of expression, in this work these objects have been termed 'migratory things'.

While the nature and characteristics of different migratory things vary considerably – from sentient, roaming wild animals to relatively stable hydrocarbon resources – these objects normally share such characteristics as an economic value to those upon whose land they are found and the relative inability³ of proprietors to physically exert control over the same until 'captured' or reduced into possession in some way. In a similar vein, migratory things are in general subject to the physical ability of adjacent proprietors (and at times others) to 'attract' them – either purposely or incidentally – by the carrying out of legitimate works, or other forms of activity, upon their own land without any unlawful or illegitimate invasion of the other's land in the normal sense (such as trespass). These features raise somewhat unique questions about how traditionally held notions of

¹ Including both ownership and rights of use.

² In this sense reference is made to legal boundaries rather than physical barriers.

³ To varying degrees.

property rights (eg the right of protection against the appropriation of things by others without an owner's consent) might be applied to migratory things.

The work is comparative in nature and seeks to compare and contrast the relative positions of Scots and English law with regard to property rights in migratory things. From a purely academic perspective, these questions bear analysis not least for the reason that the law appears to be somewhat unclear, misunderstood and at times contradictory both within and across the two jurisdictions. Many of the principles which govern this area stem from old precedents and hence are drawn from case reports that are not always entirely clear or consistent even within themselves. There is comparatively little writing on such topics and no-where is the law relating to property rights in migratory things brought together in one place with any attempt to tease out general, underlying approaches and principles.⁴ Furthermore, given the surprising lack of comparative works between English and Scots approaches to property and land law, this work represents a valuable contribution to this general debate.⁵

Aside from this academic interest, the questions that this thesis seeks to unravel are important from a practical perspective. It should be recognised that (particularly in respect of water) migratory things may be important commodities in both an economic and public utility sense and hence property and allocation rights therein are crucial societal issues. It is a central plank of this thesis, that in respect of some migratory

⁴ Although the author has now published a substantial academic article relating to this aspect of the study - see B. Clark, 'Migratory Things on Land: Property Rights and a Law of Capture' (2002) Vol 6.3 *EJCL*.

⁵ Although some of the underlying principles of property law across both sides of the border are similar, their origins and terminology often diverge. As Reid notes "[a] lawyer trained in Scotland can without difficulty (other than linguistic difficulty) read and understand a book about property in Germany, or indeed, in Japan (where the law is based on German law). But he is likely to be perplexed and bewildered by a book on the law of property in England." K. Reid, *The Law of Property in Scotland* (1996) at para 2. For rare examples of such comparative works, see C. D'O Farran, *Principles of Scots and English Land Law* (1958); D. Large, *The Land Law of Scotland: A Comparison with American and English Concepts* (1986) 17 *Env't. L.* 1; E. Galbraith, 'Putting a kilt on it: key differences between Scots and English law' (1998) 10 *Corporate Counsel* 51.

things, for too long appropriate questions regarding issues of property and rights of use and the policy ramifications which underpin current approaches in these senses have been ignored. As the following chapters will illustrate, judicial decisions regarding migratory things have often either been determined in somewhat of a policy vacuum or in accordance with out-dated policy choices.

This thesis, which seeks both to paint a picture of the current legal landscape in respect of property rights in migratory things and also analyse a range of policy options for change, develops through several stages. The first task of the work is to tease out the fundamental underlying principles of the law relative to various different migratory things across both Scotland and England. This part of the work, which is primarily narrative in nature, involves a detailed examination of relevant authorities and in general seeks to establish the rights private landowners hold in such things, primarily from a property perspective. So, for example, given the ambient nature of objects like water and hydrocarbons, the thesis ponders the question as to whether either or both regimes recognise a full right of private ownership in migratory things *in situ*, whether they merely recognise some sort of qualified proprietary right to 'capture' the thing concerned, or whether no private ownership rights are given recognition until the thing is reduced into possession. An interesting issue here is the interplay that subsists between the limitations to property rights that might be recognised in migratory things *in situ* and assertion of general principles of landownership such as the well-worn maxim, *a coelo ad centrum* — which holds that landowners own, in a vertical stratum, all from the centre of the earth up to the 'heavens'.

A subsidiary question that can be posed here relates to the issue of what protection from the acts of others a proprietor might hold over migratory things upon or beneath his land

– in particular, where there is no other invasion of his property rights in the traditional sense (eg through trespass or removal of support). In this sense, a question that is discussed at this stage is whether such protection, if it indeed exists, might stem from ownership rights or rather from some other ground of action. Much of the debate here centres on a judge-made doctrine known as the 'law (or rule) of capture'. This rule, which became infamous around the time of the oil boom and bust in the USA in the late 19th century/early 20th century, sanctions the appropriation of a migratory thing from the land of another (without his consent) by the carrying out of legitimate activities upon one's own land.⁶ In short, under the law of capture, the law leaves the allocation of defensible property rights until after the thing has been reduced into possession.

The above issues are a reflection of the difficult choices that ought to be taken by a legal regime over the extent that private property rights are ascribed to migratory things and how such rights are to be balanced in respect of the needs of competing users. Given the ambient nature of migratory things, they may not easily be subject to ownership rights in the traditional sense. In this regard, the thesis discusses the interaction and balance that might be struck between competing correlative rights of property and also the schism between property rights and other available grounds of action, such as those that might be sought under rights of support, or on nuisance and negligence grounds. As will be noted later in this thesis, the issue of ownership of migratory things may be redundant in many respects. By contrast, the more important issue may in practice be the right to exploit a migratory resource. Such a right may be seen as a sub-right or consequence of ownership but the right may exist where ownership itself is absent. Moreover, as shall be noted later in this work, one party's right of ownership in many cases may simply flounder in the wake of another party's right of use.

⁶ See eg K.W. Blinn *et al*, *International Petroleum Exploration and Exploitation Agreements : Legal Economic and Policy Aspects* (1986).

In terms of how the material is structured, the thesis is split into three composite parts. Part I, encompasses chapters 2, 3, and 4 and deals with rights of property and use under both Scots and English common law in respect of three broad categories of migratory things, namely: chapter 2, wild animals; chapter 3, water running in defined channels and percolating groundwater; and chapter 4, fugacious minerals and other similar sub-soil substances including hydrocarbons, asphalt, silt and brine. Given a lack of domestic authority regarding this final category, attention is paid to relevant principles found in Commonwealth and US authority (much of which is steeped in English common law principles). Additionally, in respect of hydrocarbons, some discussion is devoted to the applicable law in the specific context of the UK offshore licensing regime. This is important as, given that on-shore hydrocarbon development is so limited as to be almost negligible in practical terms, off-shore exploitation represents the main practical issue in respect of hydrocarbons in the UK. This section seeks to provide an illuminating discussion of the practical ramifications of traditional approaches to the law relative to the allocation of rights in migratory things. One or two current lacunae in the law are identified and problems arising from these loopholes and their interaction with the law of capture are discussed.

As well as establishing a clear picture of the principles of law as regards rights of property in different migratory things, chapters 2,3 and 4 attempt to draw out underlying policy themes which have supported legal determinations made from time to time in different contexts (without necessarily taking a critical approach to the policy rationale at this juncture). Many different policy rationales are thrown up which are further discussed in this thesis, including, but not limited to: recognising absolutist notions of ownership; providing low transactional costs; ensuring certainty in the law; protecting and

encouraging economic investment; recognising the correlative rights of others; and adhering in a formalist sense, to previous precedent. In respect of the latter, early judicial determinations in relation to one sort of migratory thing (eg wild animals) have gone on, perhaps not always justifiably, to inform the law relating to another (eg hydrocarbons). In some cases (eg water) the public and life-sustaining characteristic of the resource is an additional factor to be weighed in any judicial determination which may tend to support doctrines favouring public utility over private exploitation. Having said this, the dominant, although by no means only, model that has developed historically from the authorities in respect of migratory things in both Scotland and England & Wales is that of absolute dominium.⁷

Part II of the thesis is set out in chapter 5. Building on the preceding sections of the thesis, chapter 5 begins with a discussion of the role that policy has played in the development of the law relative to ownership and rights of use in respect of different migratory things. The chapter then focuses on the dominant, absolute dominium approach and discusses some of the negative repercussions that might be manifest by such a doctrine from economic, environmental and public utility viewpoints. In this regard a range of identified, negative manifestations of policy are discussed, such as 'the tragedy of the commons' and associated inefficiency repercussions, and the inherent inequity resulting from unfettered, absolutist rights in migratory things.

⁷ This in practice more often refers to an absolute right to use or exploit a thing rather than absolute ownership *in situ* as such. As is noted in the following analysis, however, some of the authorities are confused about this issue.

Using the law relating to percolating, underground water⁸ as a relevant example, the chapter then discusses some of the alternative regimes dealing with the allocation of rights in migratory things which are manifest in US states and the policy choices that inform them. Such doctrines include a number of disparate approaches (some of which have in fact been manifest in the UK in certain contexts from time to time) and include: correlative/riparian rights approaches, wherein due regard must be paid to the rights of other landowners; reasonable use doctrines which limit the sorts of water uses that can be undertaken; and prior appropriation regimes, wherein if a beneficial use can be established, it may be protected against the subsequent actions of other users. By reviewing relevant literature, the work discusses from a critical policy stance some of the benefits and draw backs which have resulted from these different approaches.

Part III of the thesis encompasses chapters 6 and 7, which together comprise a case study which focuses on current reforms on-going in relation to Scottish water law. This case-study bears analysis in order to illustrate a 'live' example of how a legal regime might attempt to balance relevant policy choices in respect of the allocation of rights to migratory things. Drawing on the general law expounded in chapter 3, chapter 6 begins by discussing the current, largely *laissez faire* position as regards water law in Scotland and points to current problems with waste, inefficiency, water shortages and sustainability concerns. The chapter then analyses the 'nuts and bolts' of the proposed reforms brought in by the Water Environment and Water Services (Scotland) Act 2003 in the aftermath of requirements of the European Water Framework Directive.⁹ In short, the

⁸ Percolating underground water (ie not flowing in a defined stream) is often simply termed 'groundwater'. The issue of groundwater was chosen because of the comparatively high number of alternative legal doctrines that have arisen in respect of allocating rights therein. It also feeds usefully into the discussion on Scottish water reform in chapter 6 and 7.

⁹ 2000/60/EC. At present there is little writing on these reforms in Scotland. To facilitate the analysis, comparisons are also drawn with the English water governance system where licensed-based approaches to water have been manifest for some time and more literature abounds.

reforms (in so far as they are relevant to the nature of this thesis) will over-lay the current, largely common law position relative to water with a licensed-based¹⁰ system governing abstractions and impoundments of water in Scotland.

Chapter 7 then draws upon some of the policy arguments discussed in earlier chapters, as well as international law and practice relative to water governance and other relevant academic literature, and analyses the proposed regime for Scotland from a critical policy perspective. Here it is analysed whether the emerging system for water governance is an appropriate one for Scotland. In so doing, the new water scheme in Scotland is gauged primarily from three identified,¹¹ underlying policy objectives, namely: legality (in particular, involving an extensive discussion of potential problems of compatibility with the relevant provisions of the European Convention on Human Rights); promoting efficiency (both in respect of providing low transactional costs and promoting the most economically efficient uses of water);¹² and ensuring reasonable/beneficial uses, including the need to recognise environmental and other wider, societal concerns. Much of the debate here centres on the extent that an allocation regime can be left to the vagaries of the market or conversely requires to be tightly controlled by the state in terms of regulatory provision. Chapter 7 also considers the question as to where the particular balance needs to be struck between these (at times) competing aims of a water governance regime and discusses the role that climatic and scarcity issues relative to water might play in this determination. This discussion raises questions regarding the efficacy of standard approaches to migratory things on a national, or for that matter, international scale as opposed to different, distinct, regionalised approaches.

¹⁰ And other regulatory fora.

¹¹ These policy factors are, in part, distilled from the policy rationale identified in the US water governance structures discussed in chapter 5 as well as policy rationale discussed in respect of case-law pertaining to migratory things in earlier chapters.

¹² This term may hold different meanings which are explored in chapter 7.

Part IV encompasses Chapter 8 of the thesis. This chapter draws together the strands of discussion from the preceding chapters. This involves commenting on the interplay between ownership issues and the availability of remedies which may or may not be based on property rights under both Scots and English law. The chapter summaries and further discusses role that policy themes have played in the development of the law relating to the ownership of, and allocation of usage rights in migratory things. In particular, the conclusion discusses what general propositions about allocating rights in respect of migratory things can be developed from the Scottish water case-study. In this sense, although some of the issues discussed in chapters 6 and 7 may appear to be of 'micro' level in that they are germane to the particular issue of water governance in Scotland, they nonetheless may be extrapolated to inform the wider debate about making choices in respect of allocation regimes for migratory things. Notwithstanding this, given current global concerns over water shortages, the question of efficient and equitable water allocation is perhaps the key issue in the field and for this reason is an important issue worth addressing in its own right.

Finally, at this juncture it can be noted that migratory things do pose difficult questions about theories of property. In particular the issue of how a property right can be transferred to another party without the owner's consent (under a law of capture) fits into theories of property is a vexed one. Although this issue is touched upon from time to time in this thesis, this work is not fundamentally concerned with theoretical aspects of property law and in particular how migratory things fit within different property theories. The analysis presented in this thesis may nonetheless represent a useful springboard in respect of such a theoretical work.

CHAPTER 2

PROPERTY RIGHTS IN WILD ANIMALS.

Overview

The law relating to the ownership in, and rights to exploit wild animals present upon land is important in itself as providing an early example as to how the law was articulated by jurists and applied and developed by courts in respect of a migratory thing of economic value to landowners. Moreover, the development of the law relating to wild animals can in another sense be seen as a fore-runner in the field of migratory things. As part of a formalistic approach by the courts (for example in the USA) the law relating to wild animals was used (perhaps somewhat erroneously) as an analogy to found the basis of property rules to be applied to other forms of ambient resources such as hydrocarbons. To set the scene for this chapter, the next section discusses some basic property rights in wild animals under both Scots and English law.

General points regarding Animals *ferae naturae*

Animals *ferae naturae* are, as the literal translation would suggest, wild by nature. In their natural state they may be present on land, but their presence is often no more than temporary as they move to and fro across tracts of land by their own volition. Given their transitory nature, law (and the allocation of property rights) differentiates between such animals which are wild and those that are by contrast, tame or domesticated (animals *mansuetae naturae*) and thus at least in theory under the physical control of landowners at all times. Both English and Scots law broadly follow Roman law in this regard. The traditional viewpoint in Roman law as regards this demarcation between the two different classifications of animals has been expressed by Thomas : “animals were classified as *ferae naturae* or *mansuetae naturae*, wild or domestic by nature, the

distinction being dependent upon the species not the particular individual animal : a pet lion would still be *ferae naturae* : the most savage of dogs *mansuetae naturae*¹ :

It is worth noting that certain categories of wild animals (such as hares, rabbits or deer) may be classified as 'game' in the sense that they are hunted for economic benefit. In terms of ownership rights that parties may hold in wild animals, the law does not in general differentiate between that accorded to game and that accorded to other wild animals. Of course, particular legislation may be aimed controlling access to, and rights specifically in, game, but this does not in itself detract from the general common law relating to animals *ferae naturae*.

Property rights under English law

Sentient wild animals that freely roam on lands in their natural state are not strictly speaking the subject of ownership.² It is certainly clear that no absolute property vests in a landowner in the wild animals that roam his lands while alive. The landowner may, however, hold what might be termed a 'qualified property' in such animals. This term is not in itself particularly useful, however, and may in fact denote quite different rights. The notion of 'qualified property' may relate to either a mere right to reduce the animals into possession or a right of ownership that is subject to the proviso that it may be lost as outlined below. Such qualified property rights can arise in a number of different ways – either *per industriam*, *ratione impotentiae et loci*, or *ratione soli*.

¹ J.A.C. Thomas, *Textbook on Roman Law* (1976) at p 167. There has been some debate about the Roman classifications and indeed it may not be so clear cut as Thomas asserts. This is not an issue that merits much discussion for the purpose of this thesis, but for a luminous examination of this matter see G. MacLeod, 'Wild and Tame Animals and Birds in Roman Law' in P. Birks (ed) *New Perspectives in the Roman Law of Property* (1989) at pp 170-184.

² *The Case of Swans* (1592) 7 Co.Rep. 15b at 17b.

Qualified property in living animals *ferae naturae* obtained *per industriam* arises by lawfully, taking, taming or reclaiming them.³ Animals *ferae naturae* become the property of any person who lawfully takes, tames or reclaims them, although property in the animals is defeasible in the sense that it is lost when the animals regain their natural liberty. Recognising such property rights in captive wild animals, it therefore follows that trespassory remedies will lie for the taking of captive wild animals.⁴ The example of deer has been determined by the English courts and although strictly speaking *ferae naturae*, if deer are reclaimed and kept in enclosed ground they are the subject of such a property right.⁵

In as similar fashion, the owner of land has a qualified property *ratione impotentiae et loci* in the young of wild animals born on the land until they fly or run away.⁶ Such young beasts, at an early stage in their development, are unable to leave the boundaries of the landowner's property so are regarded as part of the land on which they are found. Accordingly a trespassory action will lie for taking young animals so born.⁷ Such a property right is still qualified, however, by the caveat that it is lost when the young gain the ability to flee from the land – whether, of course, in practice they do so or not.

The other reflection of this 'qualified property' is that the landowner also has the exclusive right to hunt, take and kill wild animals on his land which arises *ratione soli* as an incident of land ownership.⁸ Such a right can further be granted to others, *ratione*

³ *Blade v Higgs* (1865) 11 FII. Case 621 at 631 *per* Lord Westbury at 638 *per* Lord Chelmsford; *Keeble v Hickeringill* (1706), as reported in 11 Mod Rep 74 at 75, *per* Powell J.

⁴ *Grymer v Shuck* (1610), Cro. Jac. 262.

⁵ So they were capable of passing to the executors and are liable to be taken in distress for rent – *Morgan v Abergavenny (Earl)* (1849), C B 768; Also see *Ford v Tynte* (1861), 2 John & H 150.

⁶ *The Case of Swans* *supra* n 2.

⁷ *Blade v Higgs* *supra* n 3; *Fitzherbert Nat Brev* 207, 213.

⁸ *ibid.*

privilegi.⁹ This type of grant is in fact in itself an incorporeal hereditament and amounts to an endowment of a *profit a prendre*. The proprietary nature of this right is important and is discussed further below.

There is by contrast, however, absolute property^{9a} to be had in dead wild animals – this vests, as shall be noted, in the occupier or owner of the land (or the grantee of the sporting rights if the right has arisen *ratione privilegii*).¹⁰ Such rights to dead animals may be protected against the actions of poachers who kill wild animals on the land of another – so for example, such a poacher will have no property in wild animals killed and property in the same is acquired by the landowner.¹¹ This point is picked up in more detail below.

Rationale

The rationale behind the legal vesting of such qualified property rights in wild animals on landowners is fairly clear. On the one hand given the sentient and roaming nature of wild animals, it may in practice be difficult to bestow full rights of ownership in them, but nonetheless the law recognises that there is an economic benefit to be gleaned from their exploitation by those across whose lands the animals roam. Thus some measure of legal protection of such rights should exist. Cook has noted that,

[t]he statement in the Commentaries [regarding the concept of qualified property - Co Litt 145b] points towards the presence of a form of property of qualified-ownership in wild animals. Nevertheless, such beasts or birds have an economic or social value. They may be a source of food, clothing or fuel; they may constitute a social adornment or

⁹ *ibid*; *Keeble v Hickeringill* *supra* n. 3 at 75 per Powell J – cf. *Gott v Measures* [1948] 1 KB 234 where it was said that sporting rights confer no property in wild game – it must be taken, however, that the use of term ‘property’ here denotes absolute property. This case is discussed in more detail below.

^{9a} ownership

¹⁰ *Fitzgerald v Firbank* [1897] 2 Ch 96, CA. This case refers to fishing rights; cf. *Lowe v Adams*, [1901] 2 Ch 398

¹¹ *Sutton v Moody* (1697) 1 Ld Raym. 250; *Blade v Ilidge* *supra* n 3.

status symbol, such as deer in a park; or they may be a suitable subject matter for sporting rights. Property law has therefore arrived at a compromise situation between the inapplicability of an absolute property on the one hand, and an economic or social value on the other. This concession takes the form of a special property, otherwise known as a 'qualified property'. At its simplest, this notion can be demonstrated by the property of a person in deer in a park, hares or rabbits in a warren or even fish in a pond, subject to the qualification that the property will cease if at any time the animals gain their 'natural liberty' and cannot be said to possess an *animus reverendi*.¹²

The extent that such qualified property rights in fact display typical attributes of property rights (in particular, legal protection against the actions of others) is examined further below.

Reflecting the economic value of such wild animals, for some time certain species of wild animal have been claimed by the Crown as part of the Royal Prerogative. Indeed it has been argued that property rights in all animals *ferae naturae* originally vested in the Crown,¹³ although the better view seems to be that the extent of the Monarch's power in this regard has always been limited to such animals as swans and Royal Fish and that in relation to other wild animals, qualified property rights arise *ex lege* as an incident of landownership.¹⁴ The lack of clarity regarding this point is one which goes back to the time of the early jurists. Blackstone, for example, postulated the rule that all apparently ownerless property such as animals *ferae naturae* belonged to the first occupier - by virtue of the feudal system being the Crown. This view is contrary to a previously stated opinion by the same jurist that such property will belong to the first finder.¹⁵ It will be shown, however, that discounting those particular classes of animals which vest in the Crown as part of the royal prerogative, neither view can be said to represent current

¹² P. Cook, 'The Prerogative Property: Basis of the English Game Law System' in Meister & Cook (eds) *Property and Protection: Essays in Honour of Brian Harvey* (2000) at p 119.

¹³ At least those that could be considered 'game' and hence of economic value - although see *Blade v Higgs* *supra* n. 3 where the court rejected any separate rules applicable to the branch of animals *ferae naturae* that could be considered game and those that would not.

¹⁴ For an excellent analysis of the so called prerogative origins of property rights in wild animals see P. Cook *supra* n. 12 at pp 108 - 133.

¹⁵ Bl. Com. i-295-296 (12th ed).

English common law in this regard. This is one key area where English law departs from its Scottish counterpart. Property in animals *ferae naturae* may not, in fact, vest in the first finder. As noted below, unlike Scots law, English law does not follow the Roman approach and application of the doctrine of *occupatio* in respect of wild animals.

Property rights in Scotland

The situation as regards wild animals in Scots law differs in some key respects from that in England. Although it had once been thought (in common with English law) that at least those animals that could be considered as 'game' were *inter regalia* as part of the Royal prerogative, this is no longer the case and such an approach was expressly rejected in *Duke of Athol v Macinroy*.¹⁶ Although the right to take wild animals upon land can be considered an incident of landownership,¹⁷ Scots law treats such things as mere *res nullius* in the sense that they are deemed ownerless while in their natural state. Under Scots Law, strictly speaking therefore, although a landowner has a right to reduce wild animals on his land into possession, he has no greater right to the wild animals than anyone else who may take them. So for example, the Scottish courts have held that there are no rights of property in pheasants;¹⁸ or in deer, even if in a park, unless they are tame.¹⁹ The temporary presence of game on land, is only really relevant therefore from the point of view of control of access to the land.²⁰ This is the crux of the issue and in this regard, as Gordon suggests, "[the landowner] may exercise his power of control in such a way as to create a valuable right".²¹

¹⁶ (1862) 24 D. 673, *per* Lord Justice Clerk Inglis at pp 682 *et seq.* A notable exception is 'Royal Fish' which is the sole property of the Crown, Bell Prin., s 1288.

¹⁷ D.L. Carey Miller, *Corporeal Movables in Scots Law* (1991) at p 22.

¹⁸ *Malloch v Eastley* 1685 3 Slak. 291.

¹⁹ *Wilson v Dykes* 1872, 10 M 444.

²⁰ See *Stair Memorial Encyclopaedia* Vol II paras 540-546.

²¹ W. Gordon, *Scottish Land Law* (2nd ed : 1999) at para 9-04.

Once the wild animal is reduced into possession or killed by a party, property in that thing will vest in him. The idea of taking possession of, and thus gaining legal title to corporeal moveable property which is open to acquisition is of course not a new one and Scots law broadly follows Roman law in this regard. The Roman doctrine of *occupatio* stipulates that anything capable of private ownership and not already owned can be acquired by taking possession of it.²² Therefore, it follows that property, for example, in underground water or wild animals will vest in the first person to capture or contain such things. Under the classic Roman formulation, the doctrine of *occupatio* applied both to things which had never been owned and also those which had ceased to be owned. Although the doctrine of *occupatio* has been adopted by Scots law, the general rule is that *occupatio* only sanctions the appropriation of things that have never had an owner.²³ Reflecting the feudal origin of land law in Scotland, things which had been once owned but have since been lost or given up generally belong to the Crown.²⁴ It is important to note that an exception to this rule on practical grounds would appear to operate in respect of wild animals, where if they escape from the control of one party then they may be acquired by another. It would be clearly difficult to differentiate in practice between animals which had never been owned and those that had been once owned and had regained their natural liberty.²⁵

Where a party is in 'hot pursuit' under Scots and English law

Scots law goes further, however, than giving title to those that capture or kill wild animals. Bell opined that mortally wounding an animal so that it cannot escape would be

²² Justinian, *Institutes* II, I, 12; Justinian, *Digest* 41, I, I, 3 and 5.

²³ Stair, *Institutes* I, 7, 3; II, I 5 and 33; Erskine *Institute* II, I, 10; Bell *Principles* ss 1287-1288.

²⁴ Stair II, I, 5; III 3,2,7; Erskine II, I, 12; Bell s 1291.

²⁵ *Valentine v Kennedy* 1985 SCCR 89; D.L. Carey Miller, *Corporeal Moveables in Scots Law* (1991) at p 25.

sufficient to give ownership to the person pursuing it.²⁶ Stair in fact had previously set out a slightly different rule when he suggested that if one party is pursuing an animal and has a reasonable prospect of catching it then if it is subsequently caught by another, property will be acquired by the initial pursuer.²⁷ Similar, long-standing rules apply in relation to the 'fast and loose' conventional rules of whale fishing.²⁸ Gordon has noted that "[a]ccording to these customs a whale harpooned, or one once harpooned and still caught in harpoon line was a 'fast fish' and belonged to the striker even if others helped to catch it with further harpoons; if it broke free from the harpoon it was a 'loose' fish and could be caught by anyone".²⁹ Taking this notion a step further, it has been held under Scots law that one in pursuit of game may enter the land of another if a mortally wounded animal has been driven there, without committing any trespass. In *Nicoll v Strachan*³⁰ it was held that where the animal was either dead, apparently dead or wounded to the extent that it could no longer make its escape then it would not be trespass to enter into the land of another to claim it.

Such rules, as set out above, have a clear policy aim. They reflect the fact that a certain amount of effort and perhaps economic investment may have been applied in respect of the pursuit and it would perhaps be inequitable to allow another party to intervene at this stage and take the animal for himself. This rule, however, does of course leave open the potentially difficult issue of when exactly a person has a reasonable prospect of capturing an animal and/or whether or not an animal has been mortally wounded prior to capture by another party. Thus the law in this regard does not lend itself to clarity. In practice

²⁶ Bell s 1290.

²⁷ Stair Insts vol II, I, 33.

²⁸ *Addison & Sons v Row* 1794, 3 Pat. App. 334; *The Aberdeen Arctic Co v Sutter* 1862 4 Macq. 355.

²⁹ W. Gordon, 'Corporal Property Law' in K. Reid (ed), *The Law of Property Law in Scotland* (1996) at para 541, footnote 5.

³⁰ (1912) 7 Adam 31, 34-36.

such a determination might inevitably involve some difficult evidential questions and thus give rise to higher transactional costs.

Concerns such as these came to the fore in the New York Supreme Court case of *Pierson v Post*.³¹ In this case, Post (with a pack of hounds) was in 'hot pursuit' of a fox on public land. Pierson (rather amusingly termed by the court 'a saucy intruder'), well aware of this fact, subsequently killed the fox and took it for himself. Post sued for damages in respect of the value of the fox but lost on the basis that one who hunts an animal *ferae naturae* establishes no rights of property in it until it is either captured, killed or mortally wounded and not prior to this. Despite the dissenting opinion of Justice Livingstone who felt that such a decision might prove a disincentive to the socially worthwhile pursuit of fox hunting, the court's ruling was founded primarily on the practical basis discussed above that it would be difficult to determine when capture was imminent, so that a right to the thing pursued should only pass when capture occurred.³²

Trespassers and property in game

Another issue where Scots and English approaches to property rights in animals *ferae naturae* differ is in relation to property rights which are vested in trespassers who take game on the land of another. Under English law, if a trespasser were to wild kill animals on the land of another, no property would pass to that person – it would vest in the landowner.³³ Unlike the Roman position (and Scottish position that follows the Roman rule) in this regard, which stipulates that property in animals *ferae nature* will, in general, always vest in the first party to reduce them into possession,³⁴ under the landmark

³¹ 3 Cai. R 175 (N.Y. Sup. Ct 1805).

³² *ibid* at 179.

³³ *Blade v Fliggs supra* n. 3.

³⁴ *Justinian Institutes* (Bk 2. tit. 1, s 12).

decision in *Blade v Higgs*³⁵ the fact that the taking by a trespasser is illegitimate means that the animals so taken will not be the property of the trespasser but that title will revert to the landowner on whose land the game is found. This rule was promulgated even though at the time of that decision it had not been held that a poacher who takes game on the land of another committed larceny³⁶ and also that the Game Act of that time, which provided for the stopping and taking away of game from a poacher, by implication arguably did not recognise that the general common law gave ownership in poached game to the landowner upon whose land the game is captured.³⁷

For Scotland, however, the Institutional writers are unequivocal that property in game will vest in a poacher who takes them, although he would be liable in trespass to the landowner.³⁸ This point was clearly affirmed by the court in the case of *Scott v Everitt*³⁹ in which a poacher brought a civil action against the prosecuting authorities to reclaim game which had been confiscated from him after it was found in his possession. The Court was quick to affirm the right of the poacher to have the game restored to him on the basis that as the game was *res nullius* it would become the property of the first person to occupy it: "unless the statutes dealing with poaching expressly provide for the forfeiture of the animals captured, the general law of occupancy is applicable and they remain the property of the taker."⁴⁰ This principle can be traced back to Roman law when Justinian stated "[so] far as the occupant's title is concerned, it is immaterial whether it is on his own land or on that of another that he catches the wild animals or

³⁵ *supra* n. 3.

³⁶ 1 Hale P.C. 511.

³⁷ See the arguments of counsel for the appellants in *Blade v Higgs* *supra* n. 3 at 1475-1477.

³⁸ Stair II, I, 33; Erskine *Institute* 11, 110; Bell s 1286. Game legislation may, however, expressly provide that game poached should be forfeited but this does not negate the general rule of occupancy in this regard.

³⁹ 1853 15 D 288.

⁴⁰ *ibid.*

birds, though it is clear that if he goes on another man's land for the sake of hunting or fowling, the latter may forbid him entry if he is aware of his purpose."⁴¹

The differential in the two approaches of the Scottish and English courts in this matter may to some extent be rooted in the fact that under English law there is a recognised property right (albeit a 'qualified' one) vested in the landowner in relation to wild animals present upon his land. For Scots law, as noted above, although a person has the right to reduce wild animals into possession as an incident of landownership, his right is seen as no greater than anyone else's.

The rule regarding trespassers has been developed further in England, however, and perhaps in an illogical fashion. It has been held somewhat surprisingly, that if a trespasser starts to hunt an animal in the land of one (whose right to the game arises *ratione soli* and not *ratione privilegii*), and kills it in the grounds of another, property vests in the killer who is merely in turn liable to the landowners in trespass.⁴² The fact that the game is not killed on the first party's land (whose right has arisen *ratione soli*) would seem to be the reason why in contrast to the general *Blade v Higgs* rule outlined above, property would not vest in him. Where the right arises *ratione privilegii* then that right to the game would continue despite the fact that the animals are captured or killed somewhere else – and hence the spoils would belong to the owner of the right.⁴³ Aside from this exception, why title to the animals would not vest in the second landowner upon whose land the poacher has taken them is unclear. The animals are clearly reduced into possession on that proprietor's land and the poacher's act is an illegitimate one which should not vest title to the game with him any more than if the miscreant had taken the

⁴¹ *Justinian's Inst* Bk II, 1, 12.

⁴² *Sutton v Moody* *supra* n. 13; *Churchward v Suddry* (1811), 14 East 249.

⁴³ *Blade v Higgs* *supra* n. 3 at 633. This is because the privilege to hunt has been granted and does not arise from ownership of the land itself.

animals on the land in which the chase begun . In *Blade v Higgs*, the Lord Chancellor attempted to justify this vexed position by the fact that “the game was not originally found in [the second landowner’s] possession but was only driven upon his ground by the chase and pursuit of the hunter”.⁴⁴ Such a view, however, was in the same case criticised by Lord Chelmsford:

I have some difficulty in understanding why the wrong doer is to acquire a property in the game under the circumstances here supposed. If the animal had left the land of B. and passed into the land of C of its own will, and had been, immediately it crossed the boundary, killed by C., it would unquestionably have been his property. Why then should not the act of a trespasser to which C. was no party, have the same right to the animal as if it had involuntarily quitted the neighbouring land? And why, not only should B. lose his right to the game and C. acquired none, but the property, by this accident of place where it happened to be killed, be transferred to the trespasser? It would appear to me to be more in accordance with principle, to hold that if the trespasser deprived the owner of the land where the game was started, of his right to claim the property by unlawfully killing on the land of another to which he had driven it, he converted it into a subject of property for that other owner and not for himself.⁴⁵

Despite such judicial criticism, it has been suggested that given that the rule has stood for so long and not been expressly overruled, it would remain as it is.⁴⁶ The existence of gaming statutes which might require the forfeiture of any game poached may render any practical revival of this debate unlikely.

Baiting of wild animals

The example of baiting is one that may be of use later in this thesis as an analogy when examining the efficacy of a law of capture in relation to hydrocarbons. As shall be noted in chapter 4, in early US jurisprudence relating to hydrocarbons, given a lack of any established rules in this area, decisions were made by drawing analogies with recognised common law principles relating to wild animals. A baiting scenario is one where a party sets bait on his own land that has the effect that game is attracted to the bait from the

⁴⁴ At p 633. Even though game is never in possession of a landowner as such until captured.

⁴⁵ *Blade v Higgs* *supra* n. 3 *per* Lord Chelmsford at 639-641.

⁴⁶ *Halsbury's Laws of England* 4th ed Vol 2 para 210.

land of another towards the baiter's land and then is captured by him. This is arguably analogous with a situation where one party drilling oil from beneath his own land draws forth oil underlying the land of another. In such a case there is no trespass or other invasion of property rights as there would be with poaching in general.

The key question in this sense is whether, by setting a bait, and thus perhaps purposely drawing animals from the land of another, any ground of action will be available to the aggrieved landowner. In relation to English law it is submitted that as there is no element of trespass on to another's land and the property has not been taken on the land of the other (for example, as would be the case with a poacher), and the act of baiting is a legitimate way to exploit resources upon one's own land, the game would vest in the baiter. This is so even though the baiter's actions have caused the game to leave the land of another perhaps to a greater extent than would normally occur by the course of nature and hence the baiting can be considered to have in some way diminished the qualified proprietary right of the other landowner to take game on his land. In Scotland, as each landowner has as much right to hunt for wild animals as any other, it is submitted that there would similarly be no infringement of any proprietary right in this situation, hence no ground of action and, of course, property in the animals taken would pass to the baiter (which in any case, as noted above, passes in Scotland irrespective of whether or not the taking can be considered legitimate).

This may all seem straightforward enough but some telling observations can be made about the qualified property right to take possession of wild animals that exists in England & Wales when this hypothetical baiting scenario is compared with the facts of

the old English case of *Keeble v Hickeringill*.⁴⁷ In this case Keeble owned some land on which he had constructed a pond to attract ducks that he would then catch with nets. Hickeringill, a neighbour who was unhappy about Keeble's activities, fired a gun to scare the ducks away and Keeble sued for damages. The court ruled in Keebles' favour and Chief Justice Holt in the (somewhat sparse) court judgement remarked, "to learn the trade of seducing ... ducks to come... in order to be taken is not prohibited by either the law of the land or the moral law; but it is useful to use art to seduce them, to catch them, and destroy them for the use of mankind, as to kill and destroy wildfowl or tame cattle. Then when a man useth his art or his skill to take them,... this is his trade; and he that hinders another in his trade or livelihood is liable to an action for so hindering him..."⁴⁸

On this rationale, although there is nothing to stop one from baiting wild animals from another's land (for example, if Hickeringill had constructed his own pond to attract the ducks) a party cannot seek to frustrate the attempts of another to capture a thing by spoiling tactics carried out with a wilful intent to injure the other party's rights. This qualified property right in wild animals is therefore somewhat unusual in that it is strong enough to prevent others from interfering with it, *except* in circumstances where the other party takes possession of the thing itself (where there is no other ground of action such as trespass) which is arguably the most extensive invasion of property rights possible.⁴⁹ On policy grounds, such an approach is justifiable in that from an economic

⁴⁷ 11 East 574, 103 Eng. Rep. 112 (KB 1707).

⁴⁸ Similarly in *Fitzgerald v Firbank* [1897] 2 Ch. 96 a party who had been granted fishing rights (which the court held amounted to a *profit a prendre*) was entitled to claim damages where the actions of the defendants flooded the river with dirty water and scared the fish away.

⁴⁹ This in fact is an idea that encountered is in respect of other migratory things. In the English case of *Ballard v Tomlinson* ((1885) L.R. 29 Ch D. 115), despite the fact that it was viewed that a landowner had no property in underground water *in situ* as it was an incident of landownership that the landowner had the right to exploit this water, the adjacent landowner had no rights to pollute the water – even though he would be free to take the water for himself). So in this circumstance, again it is interesting the existence of

rationale, property law should facilitate the legitimate exploitation of natural resources (in the case of such things as game by whichever party is first able to do so) but equally the law should prohibit action that otherwise seeks to thwart a party's attempts to do so, as given the investment of would-be exploiters of natural resources such as game, any interference may cause waste and inefficiency. By contrast, in a baiting scenario both competing activities are seeking to legitimately exploit the resource – and both may require investment – and hence, in such scenarios the law should remain neutral.^{49a} It would be interesting to note how a Scottish court would view such a scenario. Likely an action could be sought on the grounds of nuisance.^{49b}

An interesting English judgement which perhaps bucks this general trend is *Gott v Measurns*.⁵⁰ In this case, a party to whom sporting rights had been granted, shot a dog which had come onto, and was attacking game on the land over which the rights pertained. The case in fact was concerned with statutory interpretation in that s 41 of the Malicious Damage Act 1861 prescribed criminal penalties for parties who did “unlawfully and maliciously kill, maim or wound any dog, bird, beast or other animal...” It was a valid defence, however, to kill such an animal in defence of one's property (as this would render the killing neither unlawful nor malicious). While at first instance, the justices held that given that the respondent had shot the dog on lands over which he had full sporting rights, he did so in defence of his property and without malice, this view was rejected by the Divisional Court.

property rights protect not against the seizing of the water by another party, but do safeguard against destruction or damage to the thing by that party.

^{49a} Such a principle is apparent in respect of judicial approaches to water exploitation – see further discussion in chapter 3.

^{49b} Nuisance has been described as an infringement of natural rights of ownership (Rankine, *Law of Landownership* 4th ed (1906) pp 339 *et seq*) or use of property that occasions serious disturbance or substantial inconvenience to a neighbour – see for example, *Watt v Jamieson* 1965 SC 56, *per* Lord President Cooper at 57-58.

⁵⁰ [1948] 1 KB 234.

The reasoning of the court was delivered by Lord Goddard C.J. :

[i]t seems to me that the law really is not in any doubt here, and that is that a person may be justified in shooting a dog if he honestly believes that it is necessary as being the only way in which he can protect his property. Therefore, if a farmer finds a dog in his ewe flock, as sometimes happens, chasing sheep, and so forth, which may cause incalculable damage to a farmer, it may be that the only way he can protect his flock is by shooting the dog, and he can do it. This case [by contrast] is one in which it seems to me the respondent has no property in anything. He had the sporting rights. He... was entitled to go on the land for the purpose of hunting the game, but he had no property in the game... until he had reduced the game into possession. Neither a person owning the sporting rights nor the landowner has any property in wild game... Therefore... when this occurred it cannot be said that the respondent could have reasonably believed that he was entitled to shoot the dog as being done in the protection of his property, because that would be a reasonable belief in something which the law does not recognize... so it seems to me that you cannot honestly believe that it is necessary to shoot a dog to protect your property when you have no property to protect.^{50a}

This case then seems to deny any sort of property right in game when a party is granted the right to take the same from another's land. As we saw from *Keeble's* case the right to take game (upon one's own land in that case) *was a property right* sufficient to be safeguarded against the actions of others who disturbed that right (in that case the scaring of ducks by the adjacent landowner).^{50b} It is questionable how this should be any different from the right to be safeguarded by law (and hence granted a defence under the Malicious Damage Act) against the actions of a rampaging dog that at least threatens to infringe the right to exploit of the game on land. As noted above, the right to exploit game is of an economic value to the grantee (who has no doubt paid for the privilege) in the same way that an owner benefits in an economic sense from items he owns. Hence, in the same way the law at least arguably ought to safeguard against infringements of such rights and allow parties where necessary (and within reasonable limits) to take actions themselves to safeguard those rights. Furthermore, in terms of consistency with other recognised principles of land law, as Counsel for the respondents in *Gott*

^{50a} at 239-240.

^{50b} Although it is possible to view *Keeble's* case as being one which sets out the general rule that an action will lie where one party maliciously acts in such a way as to cause detriment to another's occupation or livelihood.

suggested, although game as such remains *res nullius*, a right to reduce the same into possession on another's land has been recognised as a *profit a prendre*^{50a} and contrary to the court's bare assertion that there is no property in the game, is hence clearly a property right of a kind in the game.⁵¹ It is well established that unlike the case with mere licences, *profits a prendre* are sufficiently proprietary in nature to be safeguarded against the actions of others who interfere with that right.⁵² It is unclear in the circumstances therefore why such a property right should not afford the grantee any right to shoot the dog which was invading this right.

Summary

From the foregoing, some general principles and policy rationale pertaining to wild animals can be established. First, given a lack of physical control over such ambient resources as wild animals, a legal system will tend not to allocate full ownership rights therein until reduced into possession. Recognising the economic value of wild animals to landowners, however, what might be termed 'qualified' property rights (under English law) may be protected in some ways – eg in particular, through the law of trespass or by unlawful disturbance of a right to exploit. The right is not always protected, however. In general terms, in circumstances where a party acts in an unlawful or illegitimate way then the property right is capable of sustaining an action against the wrongdoer. Where another party acts in a legitimate fashion on his land which negates the qualified property right of an adjacent proprietor, the law tends to remain neutral and would not intervene to provide a remedy to the aggrieved party.

^{50a} which can be transferred to another.

⁵¹ *ibid* at 238.

⁵² See for example, *Bolton v Forest Pest Management Institute* (1986) 21 D.L.R. (4th) 242 at 249.

It has also been shown that allocation of ownership may in some cases occur before the object concerned has been fully reduced into possession, eg where the animal has been mortally wounded under 'fast and loose' type rules. Such a rule rewards the effort and perhaps the economic investment of the pursuer and hence encourages exploitation, but pinning down exactly when and in what circumstances ownership will arise may perhaps not always be an easy task. This ambiguity in itself may result in disputes and hence inefficiencies. These arising issues will be returned to later and may inform a discussion of the law relative to other migratory things.

CHAPTER 3

PROPERTY RIGHTS IN WATER

Introduction

As shall be noted below, the law relating to property rights in water upon or below land in the UK is vague, uncertain and like the substance itself, shifting and inconstant. This notion was recognised by Rankine as follows:

[n]o part of the law of neighbourhood has given rise to so many difficult and delicate questions as the law which relates to right[s] in water. The shifting and inconstant nature of the element itself, while doubtless the chief cause of the difficulties which pervade this department of jurisprudence in all systems of law, is a fair symbol of the vagueness which has all too often characterised the body of legal doctrine that forms [this subject]... In this more than any other portion of the law of ownership is to be observed the modifying influence of climate, of the configuration of land, and of human industry. The leading principles of the law were laid down centuries ago in the Roman jurisprudence. These have been recognised as a safe guide during the whole history of Scots law, have been appealed to in the Courts of England and America, and have been taken over as authoritative in France and Germany. But many of the most interesting and important developments of the institution have been reserved for the determination of the lawyers of the present [19th] century.¹

This chapter steers a pathway through the maze of property rights in running and percolating water upon land and attempts to establish what rights of ownership a landowner has in such waters and the extent that such proprietary rights are protected against the actions of others who infringe those activities in certain ways. The chapter begins by making some basic propositions about water rights and English common law.

English Law

General Points

Notwithstanding that there are certain rights in water which arise by virtue of ownership of riparian property, the traditional viewpoint holds that flowing water, whether running in a known and defined channel or percolating through the soil in a random fashion is

¹ J. Rankine, *Law of Landownership* 4th ed (1906) at p. 511.

not the subject of ownership at common law.² The rationale underlying this is that water, in common with the air that we breathe, is a natural life-sustaining element common to all mankind. Despite *dicta* to contrary, in certain early cases such as *Williams v Morland*³ and *Liggins v Inge*,⁴ it seems to be recognised that flowing water is only *publici juris* (owned by the public) in the sense that all may drink and utilise this natural resource for the necessary requirements of supporting life.⁵ The water is not owned as such but rather the public have a general right to use the water.

Of course that is not to say that, in a similar manner to capturing a wild animal, water which has been appropriated or taken into possession either from a defined channel or from that percolating beneath the land is not the subject of property. Property will vest in the taker, albeit only throughout the time of possession.⁶ Similarly, as one would expect, water which is held in some sort of receptacle will be the property of the party who has possession of water, in so far as that possession endures.⁷

Riparian Rights

Rights, which although falling short of full ownership are proprietary in nature, may vest in flowing water, however. In relation to streams which flow in a known and defined pathway certain riparian rights exist. Such rights are best viewed as limitations on the general absolute right to draw water that applies to underground percolating water, which shall be alluded to later. In relation to water flowing in defined channels, at common law, a riparian owner is unable to take all the water, but nonetheless certain

² *Halsbury's Laws of England*, 3rd ed Vol 39, p 506 (1962).

³ (1824) 2 B & C 910.

⁴ (1831) 7 Bing 68.

⁵ See *Embery v Owen* (1851), 6 Exch. 353; *Mason v Hill* (1833), 5 B & As. 1; *Chasemore v Richards* (1859), 7 HL Cas. 349.

⁶ 2 Bl Comm. 14, 18; *Mason v Hill* (1833) 5 B & Ad 1, at p 29; *Hocker v Porritt* (1875) LR Exch 59; *Ballard v Tomlinson* (1885) 28 Ch D 115, CA (pumping of percolating water).

⁷ 2 Bl Comm. 14; *Ferens v O'Brien* (1883) 11 QBD 21.

rights arise: he has the sole right to fish in the water;⁸ he has a right to the continual flow of water through the land, subject to the ordinary and reasonable use of the water by the upper riparian owners;⁹ he has the right to take and use water for all reasonable domestic purposes¹⁰ or perhaps in some cases manufacturing purposes even where this may result in the stream being exhausted;¹¹ and he has the right to draw water for extraordinary purposes provided that such use is reasonable¹² and the water is not substantially altered in volume or character.¹³

Known and defined channels may also exist underground and the same rules apply to those channels above ground as to those below. The onus of proving that the channel is known and defined, however, will fall upon the person claiming the riparian rights. In the Irish case of *v Ballymena Township Commissioners*¹⁴ Chatterton, VC remarked that

[t]he onus of proof is on the person claiming riparian rights and it lies on him to show that without opening the ground by excavation or having recourse to abstruse speculations of scientific persons, men of ordinary powers and attainments would know, or could with reasonable diligence ascertain, that the stream when it emerges into light comes from and has flowed through a defined subterranean channel.

While the forgoing issue is discussed in detail below, the Vice Chancellor's comment provides an insight into one of the justifications for the absolute dominium rule that applies in relation to percolating groundwater, namely: the lack of physical knowledge concerning the extent of such water resources *in situ* and therefore the inapplicability of defined rights in such resources until reduced into possession.

⁸ *Eckroyd v Culthard* [1898] 2 Ch 358 at 366. Except in tidal waters, the public have no right to fish even if they have a right of navigation – *Pearce v Scotcher* (1882) 9 QBD 162; *Blount v Layard* [1891] 2 Ch 681 at 689, 690.

⁹ *John Young & Co v The Bankier Distillery Co* [1893] AC 691 at 698.

¹⁰ See *McCartney v Londonderry and Lough Swilly Ry* [1904] AC 301; *Kensit v Great Eastern Ry* (1883) Ch D 566 at 574.

¹¹ *Ormerod v Todmorton Joint Stock Mill Co Ltd* (1883) 11 QBD 155 at 168; *McCartney v Londonderry and Lough Swilly Ry* *supra* n. 10 at 307.

¹² *Rugby Joint Water Board v Walters* [1916] Ch 397.

¹³ *McCartney v Londonderry and Lough Swilly Ry* *supra* n. 10 at 307.

¹⁴ (1886) 17 LR Ir 459 at 474, 475.

The limitations placed upon the right of riparians to abstract water clearly recognise the competing needs of adjacent landowners and the law seeks to strike a balance between allowing private water exploitation and ensuring that downstream users are not overly prejudiced. The rationale underlying riparian regimes is further discussed in chapter 5. It should also be noted that these riparian rights have since been amended significantly by statute and in general a riparian owner cannot take water except when in possession of a relevant licence.¹⁵

Underground water not in a known and defined channel

Such riparian rights have no role to play in the case of underground water which percolates in an unknown, undefined way. Unlike the case with water in defined channels, landowners have no right to replenishment of this source. Thus, an adjacent landowner can extract such water as he pleases with no need to pay regard to the rights of others who may be prejudiced by the fact that, as a result of the abstraction, the water fails to arrive beneath their land.¹⁶ This unfettered right of exploitation has been termed one of 'absolute dominium' and a number of cases bear out this point.¹⁷

The tale behind the adoption of this approach is an interesting one. As the examination of the law relative to ownership of hydrocarbons *in situ* in chapter 4 will illustrate, judges who asserted an absolute dominium approach in respect of oil rendered by drilling activities did so by following a largely formalist judicial approach in that they simply applied recognised, comparative precedent (largely relative to water and wild-animals) to

¹⁵ For England and Wales, see Water Act 1962, s 23; 1991, s27(1).

¹⁶ *Chasemore v Richards* *supra* n. 5.

¹⁷ Including *Chasemore v Richards* *ibid*; *Aston v Blundel* (1843) 12 M & W 324 and *Bradford v Pickles* [1895] AC 587 HL. Whether this also means that water already below another's land can be 'captured' by an adjacent landowner carrying out works on his own land shall be discussed below.

the sphere of oil and gas. It seems that jurisprudence for these judges was somewhat mechanical and their rules self-defining. It is therefore somewhat ironic that some of the very precedents (relating to ground water rules) that these later judges leaned on were themselves not rooted in a formalist theory. Murphy has contended that

in the operative case of the rules for groundwater law, however, the truth lies in the opposite direction [from formalist theory]. The nineteenth century jurists in deciding the content of groundwater law were active, creative, and non-mechanical. They truly acted as decision-makers in a legal system that did not act autonomously of science, the market, or technology, at least in the instance of groundwater and aquifers.¹⁸

At the time of the early decision makers, the English courts would have been cognisant with the correlative (riparian) rights doctrine that already existed in relation to water in defined streams.¹⁹ The fact that there were well-defined rules which predated any legal determination relating to groundwater suggests that historically speaking, defined streams and waterways were of far more importance in practical terms than underground water.²⁰

Murphy explains that :

[n]ot until entrepreneurs wanted to dewater the ground for mines and quarries, or mechanically pump previously unknown draft volumes for steam conversion, or cooling, or sale, or other consumptive uses, did a natural phenomenon become the human resource of groundwater. At that moment, and no sooner, did the legal system have basic decisions to make among claimants whose conflicts ranged from dumping extracted water as a nuisance to using or preserving groundwater as a thing of actual (or potential) cash value.²¹

If a formalist judicial approach had been taken then English courts would probably have plumped for a riparian rights doctrine in respect of groundwater. However, after a brief

¹⁸ E.F. Murphy, 'The Recurring State Judicial Task of Choosing Rules for Groundwater : How Occult Still?' 1987 NLR 120 at p 121.

¹⁹ This view prevailed after a battle with a 'prior appropriation rule' that pre-dated it. This issue is discussed in chapter 5. Scotland never embraced the prior appropriation approach as it was influenced directly from the *jus communis* – see generally N. Whitty, 'Water Law Regimes' in Reid & Zimmerman (eds) *A History of Private Law in Scotland* Vol 1 (2000).

²⁰ L. Goodeve, *The Modern Law of Real Property* 5 (1st ed. 1883); J. Gould, *The Law of Water*, s 46 at 105-03, s 265-267 at pp 465-468 (1st ed 1883).

²¹ Murphy *supra* n. 18 at p 121.

flirtation with an approach that protected prior uses,²² the courts made a clear decision to embrace what is commonly termed the 'absolute dominium' doctrine.²³ The decision not to expand the riparian regime to the sphere of underground percolating water can be seen as largely a pragmatic one. From a practical point of view, the refusal to allocate recognised riparian rights to underground percolating water stemmed primarily from the lack of scientific and technical knowledge of underground water. As noted in the landmark case of *Chasemore v Richards*, any determination that there had been interference with underground water was impractical and inefficient as it "would require the evidence of scientific men".²⁴ This fact does not in itself justify an absolute rule. It might of course have been possible to limit uses to those that could be deemed reasonable or beneficial without necessarily needing to enquire into whether or not it interfered with the water of others. Such matters are explored in chapter 5.

In any case the rejection of the correlative rights doctrine that existed in respect of water in defined channels was not taken as part of a formalist approach on the basis of some established doctrine but rather that there "was a keen awareness that no tradition existed, that no precedent bound, and that what could be found in the law books was persuasive only, rather than any part of an established common law rule".²⁵ These judges simply thought it 'impracticable' to adopt a rule for groundwater similar to the one for riparians owning land along the banks of surface streams. Groundwater to them was too unknowable in its hydrological aspects.²⁶ Clearly determining the directional flow and

²² See *Balston v Bensted* 1 Camp 463(1808). Such a prior appropriation approach is discussed in detail in the comparative section in chapter 5.

²³ In *Acton v Blundell* *supra* n. 17. As noted, the term, however, is misleading and given that underground percolating water is probably best considered *res nullius* a more accurate albeit less eloquent term may be an 'absolute right to use'.

²⁴ *Chasemore v Richards* *supra* n. 5 at 147.

²⁵ E. Murphy *supra* n. 18 at p 128. Although it should be recalled that the court in *Acton v Blundell* did note that under Roman formulations, the law did not impose liability where a landowner intercepted groundwater that flowed below his neighbour's land.

²⁶ E. Murphy, *supra* n. 18 at p 128.

volumes of groundwater was at that time impossible to ascertain – rather, such treasures of water were deemed so secret, uncontrollable and ever-changing that they could not be subject to the regulation of law or specific rules as was the case with surface streams.²⁷

In addition to the lack of technical knowledge concerning underground percolating water, the absolute use rule was preferred in that it was most consistent with the needs of an emerging industrial society to exploit natural resources. As the court in a seminal early US decision suggested, to hold otherwise would result in “material detriment to the common wealth, with drainage and agriculture, mining, the construction of highways and railroads, with sanitary regulations, building and the general progress of improvement in works of embellishment and utility”.²⁸ According to this view, given that underground water was so secret in its nature, parties could not be held responsible if their actions, for example, drew water away from the land of another. To render parties liable in such circumstances might severely curtail their industrial activities.^{28a}

In its classic English formulation, the motives behind one landowner’s abstraction of the percolating water is not germane to the founding of any case for a remedy. In *Bradford v Pickles* where there was evidence of unscrupulous motives on the part of the party draining the water prior to it reaching an adjacent landowner’s well – it was alleged this was done to force the sale of the land – the court viewed this fact as irrelevant and found no grounds of action for the defendant.²⁹ Lord Macnaghten stated that Pickles was

²⁷ *Chatfield v Wilson* 28 Vt. 49 at 54 (1856).

²⁸ *Frazier v Brown* 12 Ohio St. 294 (1861) at 311.

^{28a} It should be noted though that the absolute dominium approach may not always be seen as one supporting industrial uses. In *Chasemore supra* n. 5, for example, the case involved the determination of water rights between two competing industrial users. While the court’s determination of an absolute dominium rule benefited the abstractor it was, of course, not of benefit to the industrial user whose legitimate commercial activities were hampered when the water was drawn away from him.

²⁹ *Bradford v Pickles supra* n. 17.

entitled "to force the [appellant] to buy him out at a price satisfactorily to himself"³⁰ and that even though Pickles' motives might seem "churlish, selfish and gasping" and "shocking to a moral philosopher",³¹ the House of Lords refused to curtail the right of a landowner to exploit his property in any way consistent with his absolute power of exploitation in the land. Such a viewpoint is based on a traditional notion of property absolutism espoused by judges in the Victorian era under which landowners were under no general obligation to use their land in such a way as being consistent with wider community interests.³²

Comment

This extreme Blackstonian view of property is one which denies operation of any doctrine of abuse of rights. The civil law concept of abuse of rights is one which holds that no right can be exercised for the sole purpose of damaging someone else's rights.³³ As Mattei explains, however, some civil law systems reject this notion on the intellectual basis that it is somewhat contradictory for the law to grant a right but dictate that exploitation of the right amounts to an abuse in certain circumstances. Other civil law systems, (including for that matter, Scotland) have, by contrast, adopted specific land law limitations - such as the notion of *annulatio* - to achieve the same result. Common law systems such as England do not recognise the abuse of right doctrine.³⁴ It has been asserted that this should not be seen as particularly troublesome. Mattei, for example, has noted that "[the abuse of rights doctrine] is perfectly substituted by the

³⁰ *ibid* at 600.

³¹ *ibid* at 601.

³² Such a general viewpoint is no longer prevalent in English law; witness the stream of positive law that has been enacted in the last century which has restricted land-use in relation to such matters as planning and the environment. For a review of the shift away from traditional absolutism to the imposition of property obligationism see K. Gray & S.F. Gray, *Elements of Land Law* 3rd ed (2004), chapter 10.

³³ See for example the French case of *Clement-Bayard*, Cass. Civ Ang. 3, 1915, D. 19171705 which involved the spiteful placement of fences which endangered the taking off and landing of hot air balloons; see also A. Gambaro, 'Abuse of Right in Civil Law' in *Aequitas and Equity* A.M. Rabello (ed) (1994) at p 375.

³⁴ U. Mattei, *Basic Principles of Property Law: A Comparative and Economic Introduction* (2000) at p 149.

reasonableness limit".³⁵ It is interesting to note, however, that there is an inherent inconsistency between the idea of reasonableness and the extreme property absolutism evident under English common law in respect of exploitation of underground water which clearly cannot be viewed in any sense as 'reasonable'. The brake of reasonableness under the tort of nuisance or negligence is not in fact always the "perfect substitute" Mattei contends it is. As *Pickles* starkly illustrates, the tort of nuisance cannot be invoked when that involves the proper exploitation of resources upon one's own land. Nuisance is more concerned with circumstances in which there has been an unlawful invasion of another's property rights in some way. However one looks at this issue, clearly the extreme application of the unfettered right to abstract rule manifest in *Pickles* may lead to unfairness, exploitation and waste. This issue is further discussed in chapter 5.

Ownership, property rights and subterranean water

The English cases discussed above are commonly cited in support of the general proposition that no property lies in underground water. There is confusion, however, in the interpretation of some of the cases cited as authority for this proposition. This confusion may be of little surprise, however, given that the facts of these cases are often obscure and on a close analysis, the judgements not particularly sound.

In fact in *Acton v Blundell*, which concerned the right of a landowner to divert underground water away from the land of another,³⁶ the Lord Chief Justice expressed a contrary viewpoint when he stated that "the owner of the soil [has] all that lies beneath the surface; that the land below is his property, whether it be solid rock, or porous

³⁵ *ibid.*

³⁶ And not as the headnote would suggest a right to pump water away from another's land. This issue is discussed later under 'law of capture'.

ground, or venous earth, or *part soil, part water*.”³⁷ (emphasis added). This *obiter* comment of the Lord Chief Justice in fact suggests that the landowner does have property in water percolating below his land as the water is treated as *pars soli*.

Campbell has cast doubt on this viewpoint, however, remarking that, “the context in which the dictum was expressed however was ... whether the right to the enjoyment of an underground spring... was governed by the same rules of law as those which apply to and regulate a water course flowing on the surface. [The Lord Chief Justice] was therefore addressing primarily the issue of the right to use the underground water and not the question of its ownership”.³⁸ It is submitted that such a view stretches what the Lord Chief Justice stated - his words : “the owner of the soil has all that lies below the surface; the land [including the water] below is his property” seem fairly unequivocal to this writer. Nonetheless, Campbell’s view is lent support by views set out elsewhere in the case law. In *Ballard v Tomlinson*,³⁹ for example, in holding that there was no property in underground water, the court took the view that this did not mean that an action could not be brought on the basis of the conduct of an adjacent landowner who had polluted the water supply.

Moreover, the argument that underground percolating water is *res nullius* until reduced into possession is supported by other English decisions. In the case of *Re Simeon v Isle of Wight Rural District Council*⁴⁰ land was sold subject to reservation of the surface or underground water and all necessary easements, rights, privileges, advantages, powers and liberties necessary for the enjoyment of that reservation. A covenant was entered into by the purchaser not to cause water supply from the land sold to be diminished.

³⁷ *Acton v Blundel* *supra* n. 17 at 353.

³⁸ C. Campbell, ‘The Ownership of Corporal Property as a Separate Tenement’ (2000) 1 J.B. 39 at p 52.

³⁹ (1855) 29 Ch D 11.

⁴⁰ [1937] Ch. 525.

The original seller claimed compensation when the local council sought to compulsorily purchase the land under statutory powers with a view to conducting works which would result in S's rights to the water being injuriously affected.⁴¹

The court held that the attempt to reserve the percolating water failed on the basis that it could not be the subject of property.⁴² Luxmoore J, pointed to the earlier case of *Rae v*

Ward where the court viewed that water is

no part of the soil, like sand, or clay, or stones, nor the produce of the soil, like grass, or turves, or trees..., and, when it issues from the ground, till appropriated for use, it flows onward by the law of gravitation. While it remains in the field where it issues forth, in the absence of any servitude or custom giving a right to others, the owner of the field, and he only has a right to appropriate it; for no one else can do so without committing a trespass upon the field; but when it has left his field, he has no more power over it, or interest in it, than any other stranger.⁴³

Such a viewpoint, therefore, seems to hold that underground water is incapable of ownership until reduced into possession on the practical grounds that it "flows onward by the law of gravitation" and that any rights to appropriate the water are lost when it migrates to another land.

It has been argued that the case of *Acton*, which some commentators (particularly those in the USA⁴⁴) have viewed as authority for the principle that a landowner has absolute ownership in underground percolating water, in fact establishes no such property right. Rather on the facts of the case, what is really determined is no more than the issue that there could be no right under tort to claim damages for harm caused by diversion of

⁴¹ s. 2 of the Public Works Facilities Act, 1930.

⁴² The court was willing to hold, however, that the reservation although misconceived, should be construed as a reservation of all necessary rights to enable the original owner to obtain water from the land conveyed; and that the covenant imposed a contractual obligation on the original buyer and those deriving title from him (such as the local council) not to interfere with existing and future water supply. Damages were therefore awarded on that basis- see Luxmoore J at 537, 538.

⁴³ 4 E. & B. 702 at 709.

⁴⁴ See for example, R. Kaiser & Frank F. Skillern, 'Deep Trouble : A discussion of the Edwards Aquifer water crisis' 6 *SC Env't L.J.* 213 (1997) at p 263.

underground water on the basis that such harm would not be foreseeable.⁴⁵ On a true reading of the case, this viewpoint seems a sound one and as noted above, judicial assertions as to the fact that underground water is owed *in situ* were made *obiter dicta*.

Notwithstanding such a position, it is worth noting that support for the proposition that there is a right of property in underground percolating water can be found elsewhere. In *Bradford v Pickles*, A.L. Smith J.A, set forth the proposition that: "... an adjacent landowner has no property in or right to subterranean percolating water *until it arrives underneath his soil...* therefore no property or right of his is injured by the abstraction of the percolating water before it arrives under his land."⁴⁶ Again this at least seems to imply that such underground water is the property of the landowner when it arrives beneath his land.

Water Law in Scotland

General points

Whitty has noted that "[t]he development of the Scots law of water rights broadly follows the familiar three-stage pattern found in areas throughout Scots law: a first medieval reception of English (Glanvillian) law, followed by a reception of Roman law as developed in the European *jus commune*, followed by a second reception of English law beginning in the late eighteenth century."⁴⁷ It is of little surprise therefore that there are a number of marked similarities between Scottish and English law relating to property rights in water, although at times variances in approaches can be seen.

⁴⁵ F. Opiela, 'The rule of capture in Texas : an outdated principle beyond its time' (2002) 6 UDENWLR 87 at pp 90-92.

⁴⁶ *supra* n. 17 at 163.

⁴⁷ N. Whitty, 'Water Law Regimes' in K. Reid and R. Zimmerman (eds), *A History of Private Law in Scotland* Vol 1 (2000) p 420.

Ownership

In relation to ownership of water, Scots law adopts the Roman law distinction between running water and standing water. According to Stair "running waters are common to all men, because they have no bounds; but water standing, and capable of bounds, is appropriated".⁴⁸

Reid suggests that "running water, at least when left to run in its natural state, is treated as ownerless".⁴⁹ There appear to be two main reasons for this viewpoint – first from a philosophical standpoint, that in common with air and light, water is an essential life-affirming natural resource and hence should not be the property of any one person and secondly from a practical perspective, "because of the evident impracticality of attributing ownership of individual molecules in a fast-running stream".⁵⁰ Despite such notions, as noted below, water in its natural state is subject to certain private property rights.

Moreover, to what extent Reid's blanket statement regarding the fact that running waters are not capable of ownership is true is, it is submitted, somewhat debatable. Institutional works such as those by Erskine and Bankton, both take a similar view to Reid in this regard.⁵¹ This general viewpoint has been followed in the case-law also and was affirmed by the court in *Morris v Bickel*.⁵²

⁴⁸ Stair Insts II I 5. See also Erskine Inst II, I, 5; Bankton Inst I, 3, 2.

⁴⁹ K. Reid, *The Law of Property in Scotland* (1996) at para 274.

⁵⁰ *ibid.*

⁵¹ Erskine, II i, 5; Bankton, I, iii, 2.

⁵² (1864) 2 M 1082 (affd (1866) 4 M (HL) 44).

This view is by no means unanimous however. For example, although Rankine supports the traditional viewpoint that water in a defined channel is owned by no one,⁵³ he states that in certain cases running water not in a defined and known channel may be held to be the property of the landowner – the reasoning being that such water is merely part of the soil and hence in accordance with the doctrine of *a coelo usque ad centrum* is part of the landowner's estate.⁵⁴ The issue is further confused by the fact that at times writers use the terminology in different ways. For example, what amounts to 'running' is open to question. Does 'running' necessarily entail water flowing in a known, defined way or would water percolating underground in a random or unknown fashion also be included within such a definition? The Encyclopaedia of the Laws of Scotland, for example, appears to agree with the traditional Reid/Bankton/Erskine viewpoint, when it states that "running water is a *res communis*... the property of no-one."⁵⁵ A little later it continues, however,⁵⁶ "water not in any defined channel, but distributed over the surface or through the strata of soil is regarded as *pars soli*; like minerals and everything else *a coelo usque ad centrum*, it is the property of the proprietor upon whose land it falls".⁵⁷

Rankine's view in respect of the proposition that percolating water is *pars soli* was followed by the court in *Crichton v Turnbull*.⁵⁸ This case concerned a disposition which attempted to convey the "windmill, pump, well and water supply and piping" as separate tenements in a field which was to be retained by the landowner. In holding that a conveyance of a separate tenement of the water was not competent, Lord Moncrief took the view that percolating water was *pars soli* (in view of the fact that it was heritable by

⁵³ Rankine, *supra* n 1 at pp 523-526.

⁵⁴ *ibid* at p 513

⁵⁵ *Encyclopaedia of Scots Law* (1926) at p 549.

⁵⁶ Citing *Acton v Blundell* *supra* n. 17.

⁵⁷ *Encyclopaedia of the Laws of Scotland, supra* n 55. The same view is expressed in the *Stair Memorial Encyclopaedia* vol 25, para 342.

⁵⁸ 1946 SC 52; A view supported by W. Gordon, *Scottish Land Law* at para 7-61.

accession⁵⁹) and could not therefore be conveyed separately from the land itself.⁶⁰ Such viewpoints relating to percolating underground water are influenced by English law in this regard and based upon the *dictum* of the Lord Chief Justice in *Acton v Blundell* (explained above).

Riparian Rights

Again in similarity to English common law, certain riparian rights in water in a defined channel which fall short of full ownership vest in riparian proprietors.⁶¹ Such riparian rights are proprietary in nature. In this sense Whitty has noted that "while the doctrine of common interest developed originally, and is usually presented, as if it merely regulated the relations of riparian owners between themselves, rights are also enforceable against the general public. In terms of the fundamental principles of Scottish property law, riparian rights are real rights".⁶²

A riparian proprietor is "entitled to the water of his stream in its natural flow without sensible diminution or increase, and without sensible alteration in its character or quality".⁶³ A riparian proprietor also has a general right to make use of water which passes over his land and he may consume it in an unfettered fashion for domestic

⁵⁹ which seems contrary to the traditional viewpoint that water on land (unless it is standing) is moveable – see K. Reid, *supra* n 49 at para 273.

⁶⁰ *Ibid* at p 63.

⁶¹ As Whitty has acknowledged, "[i]n terms of comparative law, the Scottish doctrine is very similar if not identical to the English doctrine of riparian rights... The history of the Scottish doctrine of common interest however is very different from the history of the English doctrine of riparian rights. The latter emerged only in the second quarter of the nineteenth century when it replaced the previous orthodoxy, often called the doctrine of prior appropriation. By contrast the Scots law developed directly from the *ius commune* beginning in the early seventeenth century at latest and at no time received the English doctrine of prior appropriation", *supra* n. 47 at p 451. The term 'riparian' was first used in Scotland in 1864 in the case of *Morris v Bickel* (1864) 2 M 1082, (1866) 4 M (HL) 44 – it has been argued that the term was borrowed from English law which in turn had been influenced by French sources through the medium of American sources – see Whitty, *supra* n. 47 at p 457.

⁶² N Whitty, *supra* n. 47 at p 451.

⁶³ *Young & Co v Bankier Distillery Co* (1893) 20 R (HL) 76 at 78.

(primary), although not industrial (secondary) purposes.⁶⁴ In respect of non-domestic (or secondary uses), it appears that a reasonable quantity may be abstracted without objection, although there must be enough left for the uses of inferior proprietors.⁶⁵ A further prescriptive right to abstract for secondary purposes may be acquired, however. Gordon has suggested that "although the position is not entirely clear, it would appear that the prescription in question is the long negative prescription, cutting off the right of other riparian proprietors to object to the abstraction."⁶⁶ The period of prescription would then be 20 years in terms of the Prescription and Limitation (Scotland) Act 1973, s 8.⁶⁷ Again in similarity with English riparian rights, the law seeks to strike a balance between the encouragement of exploitation of resources and the protection of the correlative rights of downstream proprietors to receive a flow of the water.⁶⁸

Non-application of riparian rights to water outside a defined channel

In relation to surface and underground water outside of a definite channel, akin to the position under English common law, the resource may be used freely by the proprietor of the land in which it is found and the limitations on such use in respect of water in a defined channel (to take account of the rights of other users) have no role to play here.⁶⁹

The one exception to this rule is that, unlike the position of English law in this respect, a proprietor cannot intercept percolating water and hence cut off supply to the inferior

⁶⁴ K. Reid *supra* n. 49 at paras 287-288. The rights may be limited under the common law – eg by common interest, servitudes, nuisance or public rights of navigation and additionally in various ways by statute – eg the Flood Prevention (Scotland) Act 1961; Water (Scotland) Act 1980 and the Civic Government (Scotland) Act 1982. The abstraction regime is set to be radically shaken up by the Water Services and Water Rights (Scotland) Act 2003. This issue is discussed in detail in chapter 6.

⁶⁵ *Marquess of Breadalbane v W Highland Ry* (1885) 22 R 307, per Lord Ordinary (Welwood) at 310; *Milton v Glen-Moray Glenlivet Distillery Co Ltd* (1898) 1 F 135.

⁶⁶ *Earl of Kintore v Pirie & Sons Ltd* (1903) 5 F 818; see also *Rigby and Beardmore v Donnie* (1872) 10 M568.

⁶⁷ W. Gordon, *supra* n. 58 at para 7-32. Once the prescriptive right has been established, downstream riparians would not be able to object to the abstraction on the grounds of exhaustion of the source.

⁶⁸ The riparian doctrine is further discussed in chapter 5.

⁶⁹ *Milton v Glen-Moray Glenlivet Distillery Co Ltd* (1898) 1 F 135, 6 SLT 5, 206.

heritor for purely spiteful reasons.⁷⁰ This is because in Scotland the right to drain away the water is subject to the doctrine of *aemulatio vicini* under the law of nuisance.⁷¹ Thus, where a landowner conducts an otherwise lawful exercise of property rights for purely spiteful motives that may give the party adversely affected by the act grounds to bring a legal claim.⁷² The rule may in practice be of little significance, however. As Rankine explains "it must seldom happen that an act of enjoyment of property should be actuated solely by malice, by a desire to injure a neighbour. For that is what the rule requires. Mere caprice is not enough; and the slightest patrimonial interests, present or anticipated, will suffice to overcome the plea".⁷³

Capture and underground water

The following section examines the extent that what can be termed a 'rule of capture' applies in respect of underground percolating water. In short, a rule of capture sanctions the appropriation of a migratory thing from the land of another by the carrying out of activities upon one's own land. Thus, the physical act of capture is sanctioned by the law. Aside from physical capture, some instances also involve the notion of legal capture in the sense that the physical act of capture also entails the transfer of ownership from one party to another.^{73a} Clearly a mere physical capture brings with it rather less conceptual difficulties than one involving the involuntary transfer of ownership and these issues will be picked up below in both this chapter and the next. Whether capture

⁷⁰ K. Reid, *supra* n. 49 at p 339; compare with *Bradford v Pickles* *supra* n. 17. It may further be the case that water cannot be drawn away where this causes a collapse of support to adjacent land. These issues are discussed below.

⁷¹ See *Stair Memorial Encyclopaedia* vol 14 paras 2034-2035; Kames, *Principles of Equity* (4th ed, 1800) p 42; J. Rankine *supra* n. 1 p 381.

⁷² See for example Bell, *Principles* 964, 965.

⁷³ *Glasford v Astley* 1808 M. Appx; J. Rankine *supra* n. 1 at p 383.

^{73a} It is perhaps conceptually difficult to think of the physical act of capture of a substance leading to a capture of ownership from one party by another. As Penner has noted "[n]o one can do anything to interfere with a person's ownership of an item of property, since that is a normative relationship. A person can only do things which interfere with a person's possession. Interference is factual, and alters a person's factual relationship to an item of property. The only thing that can alter a person's ownership of his property are rules of law or the exercise of legal powers" (J.E. Penner, *The Idea of Property in Law* (1997) at p 144).

is merely physical or both physical and legal, the key point is that it involves human intervention and this should be contrasted with property passing by natural causes – for example, when a wild animal strays across a boundary or escapes and is caught by another, or when water runs freely from one tract of land to another.

In this sense, water deposits underlying another's land may be intentionally extracted by an adjacent landowner, or more commonly, abstraction may be simply a bi-product of legitimate work (such as mining) carried out upon a neighbouring land. The existence or otherwise of a remedy for a disaffected party here may yield interesting ideas about the applicability of property rights in a migratory substance like water. The law relating to underground water in this regard is also important in that it has commonly been used as an analogy to justify the existence of a law of capture in relation to hydrocarbons.⁷⁴

England & Wales

It has been argued by some commentators that as a landowner has the right to make use of water percolating under his land he may do so even if this serves to capture water from beneath the lands of others which would not otherwise have been drawn away and that in this his motives in so doing are irrelevant.⁷⁵ While this may be so, the rationale behind this viewpoint is based upon a clutch of early cases and it is in the view of this writer that many of these early decisions have in fact been misunderstood. The earliest decision in this respect is the aforementioned case of *Acton v Blundell*.⁷⁶ The headnote to this decision would appear to be unequivocal as it reads that “the owner of land through which water flows in a subterranean course, has no right or interest in it, which will enable him to maintain an action against a landowner, who, in carrying on mining

⁷⁴ Discussed in chapter 4.

⁷⁵ See eg K. Gray and S.L. Gray, *Elements of Land Law* 4th ed. (2003) at p 64.

⁷⁶ *supra* n. 17.

operations in his own land in the usual manner, drains away the water from the first mentioned owner, and lays his well dry.”⁷⁷

It is important to note, however, that this headnote does not in fact accurately describe the legal principle set out in this case. In *Action*, the plaintiff supplied his cotton mill with water from an underground well. The defendant, on mining coal on his land, pumped water which had begun to build up in his mine in order to keep this structure dry. This action, however, also caused the plaintiff's well to dry up. The Lord Chief Justice stated that

the person who owns the surface may dig therein and apply all that is there found to his own purposes at his free will and pleasure, and that if, in the exercise of such a right, he intercepts or drains off the water collected from underground springs in his neighbour's well, this inconvenience to his neighbour falls within the description of *damnum absque injuria*, which cannot become the ground of an action⁷⁸

Although this seems unequivocal it should be noted that the pleadings in the case were somewhat vague and the judgement slightly confused. On a true interpretation of the facts, as MacIntyre has suggested, “[t]he vital point to note is that *no water was ever abstracted from the plaintiff's land*. It was just prevented from getting there which is an entirely different thing.”⁷⁹ (emphasis added). Notwithstanding that the Lord Justice took the view that the water lying underneath the proprietor's land (which the Lord Justice had in fact viewed as *pars soli*) could be appropriated by the lawful works of another, given that this comment is not directly relevant to the facts of this case, these remarks should be taken as merely *obiter*.

⁷⁷ *ibid.*

⁷⁸ *ibid.* at 353.

⁷⁹ J. MacIntyre, 'The Development of Oil and Gas Ownership Theory in Canada' in *Oil and Gas Law: Cases and Materials*, R.J. Harrison (ed) (1975) at p 43. As MacIntyre notes at p. 43 (fn. 27), “[a] close examination of the facts will bear out this conclusion, although the pleadings are obscure and the headnote is hopeless”.

Subsequent cases that have been referred to in support of the notion that a law of capture applies to subterranean water include *Chasemore v Richards*⁸⁰ and *Bradford v Pickles*.⁸¹ In *Chasemore*, a House of Lords decision which has been said to form the leading authority in the area,⁸² the Board of Health for Croydon dug a large well which reduced the flow of the local river. A mill-owner who had hitherto utilised the water of the river to drive his mill claimed for damages when he now found his operations thwarted by a water shortage. The court dismissed the claim again on the basis that the respondents had an absolute right to extract water from beneath their lands.

Again jurists have latched on to this case as supporting the notion that water may legitimately be extracted from beneath another's land. Ferguson, for example, asserted that "[*Chasemore*] has definitely established that a proprietor can exhaust the percolating underground water on his own land, and that he can do so irrespective of the extent to which it percolates from his neighbour's land, or his operations affect his neighbours well."⁸³ It is submitted that this viewpoint is in fact flawed. In *Chasemore*, a study of the facts reveals that the water had been intercepted *prior* to its reaching the plaintiff's land. Therefore, extraction of the water from beneath that land did not occur. Similarly, in *Bradford*, the plaintiff was held entitled to sink wells into high ground which intercepted water on its journey to the plaintiff's reservoir. Again, however, it is important to note that interception occurred *prior* to the water reaching the plaintiff's land. While it may seem a fairly irrelevant distinction whether or not in exercising rights to an underground resource, the water is drawn from beneath a neighbouring land or merely stopped from arriving there, the distinction is important in that as we shall be noted, many of the early

⁸⁰ *supra* n. 5.

⁸¹ *supra* n. 17.

⁸² Ferguson, *The Law of Water and Water Rights in Scotland*, (1907) at p 327.

⁸³ *ibid.* at 329.

US decisions relating to capture and hydrocarbons are founded upon judicial misinterpretations of these early cases.

Despite the misconceptions concerning these early cases, nonetheless, there now seems ample authority which suggests that underground water can be appropriated from beneath an adjacent land without committing any actionable wrong. The earliest case in this regard seems to be *Poppell v Hodgkinson*.⁸⁴ Importantly the basis of this case was not whether or not ownership is possible in underground water but whether a right of support from underground water exists at common law. Indeed it was conceded by counsel for the pursuers that "according to *Chasemore v Richards*, and other cases, a man cannot claim a right to subterranean water as such." As has been noted it is at least arguable that this may not be the case and indeed this submission is contrary to the Lord Chief Justice's opinion in *Acton v Blundell* that underground water is *pars soli*.

Nonetheless, Counsel contended, that the lack of ownership in such waters did not mean that there was no right to support from the water and averred that the maxim *sic utere ut alienum non laedas* applied. He pointed to *dicta* to this effect in *North Eastern Railway Company v Elliot*.⁸⁵ This argument was rejected by the court, however. Cockburn CJ opined that "[a]lthough there is no doubt that a man has no right to withdraw from his neighbour the support of adjacent soil, there is nothing at common law to prevent his draining the soil, if, for any reason it becomes necessary or convenient for him to do so".⁸⁶ This remark suggests that the law here is primarily concerned with the balancing of competing rights and implies that the absolute right to drain water takes precedence over the right of support of the water. In its judgement, the court made reference to a

⁸⁴ (1869) Exch LR 248. Although see also *Elliot v North Eastern Ry Co* 1863 10 HLC. 333 at 359 & 365.

⁸⁵ (1J. & H. 145; 29 LJ (Ch.) 808.)

⁸⁶ *supra* n. 84 at 251/252.

number of possible industrial applications that might result in the withdrawal of support of underground water from adjacent land. The inference that can be drawn from the language used by the court is that a pro-development rationale was central to the decision. In the court's view the law should not place hurdles in the way of *bona fide* industrial activities.^{86a}

Popplewell has been followed in a clutch of more recent judgements including *Langbrook Properties Ltd v Surrey County Council*,⁸⁷ *Thomas v Gulf Oil Refining Ltd*⁸⁸ and *Stephens v Anglian Water Authority*.⁸⁹ It was held in *Langbrook* that the plaintiffs had no cause of action either in nuisance or in negligence when the defendants, in draining water from their own land, as an incident to this, also drained away percolating water from the plaintiff's land and caused subsidence. Although the defendant's actions caused the plaintiff injury, this was a case of *damnum sine injuria*. Again the case turned on the fact that there was no natural right of support of underground water. We shall return to this point below when comparing English and Scottish approaches to support.

Despite this right to drain water away from beneath an adjacent proprietor's land, there is some authority to suggest that if a landowner drains water percolating from beneath his land and this has the effect of conflicting with the rights of others in a flowing stream (eg to drain water away from that stream) then such an action may be prevented by the parties so affected. In the case of *Grand Junction Canal v Shugar*,⁹⁰ Hatherley LC overruling the judgement of Jessel MR, held that where a landowner's operations had the effect of

^{86a} Although it is not a pro-development decision in the sense that industrial activities of others may suffer when support of underground water is removed by another.

⁸⁷ [1970] 1 WLR 161.

⁸⁸ (1979) 123 SJ.

⁸⁹ [1987] 3 All E.R. 379.

⁹⁰ 1871 LR Ch D 483.

draining off water which was flowing in a natural stream then he may be prohibited in so doing. He stated

if you cannot get at underground water without touching the water in a defined surface channel, you cannot get it at all. You are not by your operations, or by any act of yours, to diminish the water which runs in the defined channel, because that is not only for yourself, but for your neighbours also, who have a clear right to use it, and have it come to them unimpaired and undiminished in quantity.^{90a}

There are obvious practical difficulties with this approach, which shall be discussed below. In any case the judgement has since been interpreted in a somewhat narrow sense. In what may be seen to be a somewhat creative decision, Lord Alverston in the case of *English v Metropolitan Water Board*⁹¹ suggested that in *Grand Junction Canal* Lord Hatherley's comments were confined to a situation where a party had directly tapped the stream by bringing his drain into immediate connection with it. Lord Alverston's view in this respect was influenced by the opinion of Vaughan Williams LJ in *Jordeson v Sutton Gas Co*⁹² where he said :

[w]ith regard to *Grand Junction Canal Co v Shugar* it seems tolerably clear from the longer report of this in the Law Times that Lord Hatherley treated the case as one in which there was a direct tapping of an overground stream flowing in a defined channel, and not merely a withdrawal of percolating underground water affecting the underground stream.

Whether this was in fact what Lord Hatherley intended – and it is doubtful from the facts of the case whether such a viewpoint is really sustainable – Scotland has firmly shut the door on his general approach on practical grounds as outlined below.⁹³

Capture in Scotland

^{90a} *ibid* at 188.

⁹¹ 1907 Jan 28, 29, 30 KBD

⁹² *Jordeson v Sutton Gas Co* (1899) 2 Ch 217 at 251-252.

⁹³ This viewpoint has been upheld by courts in other jurisdictions also – see for example the view of the Ohio Supreme Court in this respect in *Frazier v Brown* 12 Ohio St. 294, 310 (1861).

In relation to whether or not underground water can be 'captured' from beneath another's land in Scotland, it appears that Scots law has been influenced by case law south of the border in this regard. Ferguson, for example, points to the House of Lords decision in *Chasemore v Richards inter alia* as authority for the notion that water may be extracted from beneath another's land without any action lying.⁹⁴ As this thesis has already pointed out, *Chasemore* should not be read as providing authority for this proposition. Albeit that there is now ample other authority to suggest that this principle has been accepted into English law.⁹⁵

There appears to be a paucity of Scottish authority in this area. As Lyall merely notes, "the position may be the same in Scotland".⁹⁶ Some cases relative to mining activities which may give guidance are discussed below.^{96a} One important case in this area though is *Milton v Glen-Moray Glenlivet Distillery*.⁹⁷ In *Milton* the court held that in relation to subterranean water, any water which percolates onto that land by natural causes may be intercepted and extracted by the owner of the land – it being no objection that the water has percolated from or en route to a stream or piece of land belonging to someone else.⁹⁸

In *Milton* a lower heritor of a stream brought an action against a higher heritor who sank a well 12 feet from the stream to supply water to his distillery. While recognising that under *Chasemore* a landowner is entitled to freely appropriate subterranean water which would otherwise feed a stream, counsel for the pursuer suggested that "if it is proved that the well is fed in whole or in part by water which has once flowed in the stream the withdrawal of that water (even by percolation through the bed of the stream and thence

⁹⁴ Ferguson, *supra* n. 82 at p 327.

⁹⁵ See the discussion in the preceding section.

⁹⁶ *Stair Memorial Encyclopaedia* Vol 25 at para 346.

^{96a} Under 'natural and non-natural uses of land'.

⁹⁷ (1898) 1 F 135, 6 S.L.T 5, 206.

⁹⁸ See also K. Reid *supra* n. 49 at para 343.

through the intervening strata) is outside the principle in the case of *Chasemore*, and falls under the general rules which regulate the rights of riparian owners in rivers and streams".⁹⁹ In this regard, counsel relied upon the English decision of *Grand Junction Canal Co v Shugar*.¹⁰⁰

Lord Hatherley's view in *Grand Junction Canal*, however, was given short shrift by Lord Kyllachy (whose judgement was later affirmed by the Inner House) who pointing to the impracticality of Lord Hatherley's view, stated that :

it does... appear to me that ... his Lordship's decision... is extremely difficult to support... or reconcile... with the principles laid down so authoritatively in the case of *Chasemore v Richards*. In the first place, the doctrine is not, in my judgement, a workable doctrine. Not to mention extreme cases... there is hardly, I should think, a coal or iron pit in this country which does not to some extent drain from the neighbouring strata and pump to the surface water that has at some time flowed in a neighbouring stream. Indeed I should think that the instances must be innumerable in which mining operations quite sensibly affect the level of neighbouring watercourses. Similarly, there are, I should think, few systems of agricultural drainage ... which do not, more or less, have a like result.¹⁰¹

This view points to a 'floodgates' argument whereunder the court is not keen to promulgate an inefficient rule which could lead to a glut of claims brought by disaffected claimants in response to legitimate commercial activities. Additionally, determining the existence of such potential liability may be difficult^{101a} and costly for industrial abstractors to predict prior to carrying out their activities. Moreover, the technical difficulty associated with determining exactly how the abstraction had diminished the stream was alluded to when Lord Kyllachy expressed the view that "I am not myself able to accept as substantial the distinction suggested between the interception of

⁹⁹ *Milton supra* n. 97 at 40.

¹⁰⁰ *supra* n. 90 at 483. The facts of this case are discussed above.

¹⁰¹ *Milton v Glen Moray Glenlivet Distillery, supra* n. 97 at 140-141.

^{101a} At that time perhaps impossible.

underground water percolating through a stream, and the abstraction from the strata of similar water which has passed through the stream".¹⁰²

It should also be noted that in this particular case, the abstraction from the stream was minimal and had no real practical effect on water levels. In the view of the court, such abstraction from a defined stream would need to be at least material before an action might lie.¹⁰³ This leaves open the question as to whether liability might follow from the significant tapping of a defined stream, although given strong opinion voiced by Lord Kyllachy above, this would seem doubtful.

Would the case be different, if the abstraction served to take water away from beneath, and hence dry up, neighbouring land? It has already been seen that according to the general principle set out in the English case of *Popplewell v Hodgkinson*,¹⁰⁴ no action would lie on the basis that there is no right of support from underground water. It may appear that the position is different in this respect in Scotland. In *Bald v Alloa Colliery*¹⁰⁵ a proprietor granted a feu of a piece of land but reserved the minerals. On the land buildings had been erected and they stood above coal wastes filled with water which supported the surface of the land. He subsequently granted the minerals to a third party who on pumping out the subterranean water, caused subsidence resulting in damage to the surface and buildings which had existed at the time of the grant. In an action taken by the feuar of the land both the grantor and the mineral tenants were found liable for the damage caused on the basis that the party who withdraws support does so at his peril.

¹⁰² *ibid.* at 141.

¹⁰³ *ibid.* per I.J.C Macdonald at 143. and Lord Moncrief at 144.

¹⁰⁴ *supra* n. 84.

¹⁰⁵ 1854 16 D 870.

While this case at first blush may appear to be inconsistent with the English case of *Popplewell*, it has been argued that this is not the case and that *Bald* and *Popplewell* are in fact reconcilable, by implication Scotland should follow the English rule and that *Bald* can be distinguished on the basis that it involves adherence to the principal that 'one cannot derogate from his own grant'. In *The Encyclopaedia of the Laws of Scotland* it is stated

[i]n *Popplewell's* case C] Cockburn said '[a]lthough there is no doubt that a man has no right to withdraw from his neighbour the support of the adjacent soil, there is nothing at common law to prevent him draining that soil, if for any reason it becomes necessary or convenient for him to do so. It may be, indeed, that where one grants land to another for some special purpose – for building purposes, for example – then since according to the old maxim 'a man cannot derogate from his own grant', the grantor could not do anything whatever with his own land which might have the effect of rendering the land granted less fit for the special purpose in question than it otherwise might have been' The exception here pointed at seems precisely to cover and explain the principle set out in *Bald's* case.¹⁰⁶

While this argument is attractive, it is not entirely persuasive. Clearly the fact that the grantor had feued the land to the pursuer and then leased the minerals to the mineral tenant in the knowledge that working the same would cause subsidence and damage to the land and buildings thereon influenced the court in finding the grantor liable. The decision that the pumping away of the water was unlawful, however, appears grounded on the general principle that "[t]he party who withdraws the natural support, or the artificial support [such as percolating water] which comes in place of the natural support, does so at his peril".¹⁰⁷ By implication of the facts of the case, such an obligation not to remove support clearly, on authority of *Bald*, extends to support of underground water – which is contrary to the English position. It might also be noted that the arguments presented in the case make no reference to rights of property in underground water. If the court had been willing to hold that such water is *pars soli* and the pursuer's property *in*

¹⁰⁶ *Encyclopaedia of the Laws of Scotland* *supra* n 55 at p 308.

¹⁰⁷ *Bald* *supra* n. 105 at 875, *per* Lord Mac.

situ, then arguably a case could have proceeded on the basis of misappropriation by the defenders of the pursuer's property. This idea is returned to later below.

The right of support of underground water

The possible discrepancy between Scots and English law with regard to rights of support of underground water bears further examination.¹⁰⁸ The first key point to note is that the English position that there is no right of support of underground water has been criticised on the basis that it is illogical and not consistent with recognised principles of land law. This point shall be picked up shortly. It may be useful to begin, however, by noting that it has been argued that cases such as *Popplewell* and *Langbrook Properties* have in fact stretched what the courts determined in early decisions such as *Bradford v Pickles*. As Harwood has remarked, "[i]n [*Bradford*] the wrong alleged was simply deprivation of the plaintiff's supply of water, not physical damage to his property. In effect the plaintiffs were complaining about nothing more than economic competition",¹⁰⁹ which is to be contrasted with a situation where the drainage of water causes damage to the property of another. This is certainly true – the issue of subsidence was not present in *Bradford*. As noted above in this thesis, that case was merely concerned with allocating rights in the natural resource to competing users and deliberating whether an abstracting party's intention might be germane to the basis of any claim.

¹⁰⁸ This is not the only difference between the two systems of support. For Scots law, a natural right of support arguably extends to land not only in its natural state but also to land which has been built upon. In Scotland, it seems also to be accepted that support is not a right as such but rather that the other party is merely under an obligation not to undertake works which result in the removal of support. For a discussion of these issues see R. Rennie, *Minerals and the Law of Scotland* (2001) chpt 4; K. Reid, *supra* n. 49 at paras 252-262; W. Gordon *supra* n. 58 at paras 6-80 - 6-130. This would appear not to be the case in England where it seems that a natural right of support exists only in respect of land in its 'natural' state and in respect of land which has been built upon a right of support will only exist where the right has been acquired, eg through an easement (*Halsbury's Laws of England* (4th ed) paras 172, 176). Moreover case law south of the border has affirmed the fact that a party may be under an obligation to ensure that support is maintained against potential hazards not brought about by that party's actions (although such liability is based upon negligence or nuisance and is not strict) – see for example, *Leakey v National Trust* [1980] Q.B. 458 (C.A.).

¹⁰⁹ M. Harwood, 'Water, water, everywhere' (1987) *The Conveyancer* 175 at p 176.

Moreover, as the next chapter will elaborate upon, under English common law there is a right of support in respect of migratory subsoil substances such as silt and (arguably) rock salt (and of course there is a general right of support of the soil itself). Why this right of support should not extend to water is unclear. Although property rights barely feature in support cases, it might be contended that a right of support could be said to subsist in such things as silt and rock salt because these substances are part of the soil and hence owned *in situ*, whereas underground water is generally perceived to be *res nullius* until reduced into possession. Furthermore, it seems from the reasoning employed in *Popplewell* noted above, that on policy grounds the unlimited right to extract underground water is simply taken to outweigh any correlative right of support for pro-development reasons. While such viewpoints will be challenged in later chapters in this thesis, for the present time it can be stated that from a factual standpoint, such a distinction drawn between underground water and other subsoil substances, is, of course, wholly artificial. Land is rarely supported by water or minerals alone, but rather by a mixture of the two, and substances such as silt are themselves suspended in water.

The English position may be attacked further in the light of later court decisions that have strived to draw artificial distinctions to circumvent the water exception and produce a desired result. In *Brace v S.E. Regional Housing Association*¹¹⁰ the plaintiff's house enjoyed an easement of support from the defendant's house. When the defendant's house was demolished, it did not in itself interfere with the support, but the resultant exposure of the earth to the elements caused dehydration of the earth and consequent damage to the plaintiff's property. The court held in favour of the plaintiff even though it recognised that there could be no prescriptive right of support from underground water. The

¹¹⁰ (1984) 270 E.G. 1286 (C.A.).

distinction that the court drew was that this was not a case of draining away water which removed support (which by implication would not have been actionable) but rather the present case involved "altering the conditions which operated to afford support".¹¹¹ Eveleigh L.J. continued "I ... cannot equate... the drying out of clay, through atmospheric conditions, in particular by heat, as bearing any resemblance to then kind of activity that is granted immunity in the cases to which we have been referred... If I dry out a twig I cannot regard myself as taking water from it in any ordinary sense of that term..."¹¹² This view is illogical and as Harwood has suggested "[a]pparently the less water abstracted, the greater the potential liability!"¹¹³

The water exception in Scotland

It is worth noting that Rankine in fact criticised the decision in *Bald* on the dubious premise that it was contrary to the English position and it is by no means certain that the subterranean water exception would not also apply in Scotland.¹¹⁴ If one examines the Scots law of support, however, it can be argued that there are further reasons for holding that the water exception is not a logical one in Scots law either.

Under Scots law, the issue of support is one which is particularly uncertain and vague and indeed some confusion exists as to both the legal basis for support and the extent of its application. After many centuries of legal indifference, in practical terms, the issue of support came to the fore in the mid-19th century when the industrial revolution prompted the mass excavation of coal by mining in Scotland. Aggressive excavation

¹¹¹ *ibid* at 1288, per Eveleigh L.J.

¹¹² *ibid*.

¹¹³ M. Harwood *supra* n. 109 at p 179.

¹¹⁴ Rankine *supra* n. 1.

techniques led not infrequently to subsidence and hence a raft of claims from adjacent landowners that support to their land had been eroded.^{114a}

Many of today's textbooks refer to the notion of 'rights of support'.¹¹⁵ Despite this, it has been argued by Reid that this terminology is perhaps not appropriate.¹¹⁶ This is because there is no positive obligation on an adjacent or sub-adjacent proprietor to provide support and he need not do anything to preserve existing levels of support – the other proprietor therefore has no 'right' to support as such. The adjacent or sub-adjacent proprietor is under an obligation, however, not to undertake any positive act which serves to endanger existing levels of support.¹¹⁷ Following Reid's viewpoint it is probably better therefore to think of support less in terms of rights and more in terms of an obligation imposed on the adjacent proprietor not to carry out any act which removes support.¹¹⁸

The Legal Basis of Support in Scotland

This approach to support is relevant in terms of the legal basis of this obligation. The common viewpoint is that support arises *ex lege* as an incident of ownership.¹¹⁹ Thus Rankine describes support as a natural right.¹²⁰ Such a term is perhaps somewhat illusory, however, and given the preferred viewpoint that support is best described in terms of being an obligation, it follows therefore that it may be more prudent to view

^{114a} See Reid, *supra* n. 49 at para 252.

¹¹⁵ W. Gordon, *supra* n. 78 at para 6-80; R. Rennie *supra* n. 108; P. Robson and A. McCowan, *Property Law* 2nd ed (1998) at p 60; McAllister and Guthrie, *Scottish Property Law: An Introduction* 1992 at p 43 – see also the Coal Industry Nationalisation Act 1946 (c59), s 48(1) (a), where the term appears.

¹¹⁶ Reid, *supra* n. 49 at para 253.

¹¹⁷ *Ibid.*

¹¹⁸ Such a viewpoint is recognised by other key authors in the field including W. Gordon *supra* n. 78 at para 6-83; J. Halliday, 'Conveyancing' (1997) at para 34-05.

¹¹⁹ Robson and McCowan, *supra* n. 115; McAllister and Guthrie, *supra* n. 115.

¹²⁰ Rankine, *supra* n. 1 pp 384, 385.

support as a restriction on the use of land under the general notion of nuisance or negligence.

The case-law, admittedly, does not bear out a common approach to the legal origin of support and three possible solutions are revealed. Reid suggests that despite the existence of case-law which points to support arising by common interest¹²¹ and other authority that support be classified as an implied servitude,¹²² the most sustainable view is that support arises under the general law of delict or nuisance.¹²³ Under such a viewpoint, the obligation not to remove support is merely one aspect of the general rule that a landowner use his property in such a way as to injure the property of his neighbour – *sic utere tuo ut alienum non laedas*. This viewpoint appears to be accepted by other key writers such as Halliday and, by implication, Rankine.¹²⁴ Under this view it would seem illogical to differentiate in any way between the actions of parties which removes soil and that which draws away subterranean water. The support is either removed or it is not. Admittedly support provided by the hydrostatic pressure of underground water is often (as was the case in *Bald*) not natural support but rather artificial support. This however should not alter the general situation. As Rennie has stated (affirming the view of Gordon in this regard)¹²⁵ "...it does not matter how or why the artificial support is provided; if it is there at the time of severance of minerals from the surface then it is the *de facto* support and cannot be removed. This seems... to be an accurate statement of the law".¹²⁶

Capture of water and proprietary remedies

¹²¹ *Andrew v Henderson and Dimmack* (1871) 9 M 554.

¹²² *Caledonian Rly Co v Sprot* (1856) 16 D 559, revsd 2 Macq 449, HL.

¹²³ *Buchanan v Andrew* (1873) 11 M (HL) 13.

¹²⁴ See Halliday, *supra* n. 124; Rankine, *supra* n. 1.

¹²⁵ W. Gordon, *supra* n. 78 at para 6-89.

¹²⁶ R. Rennie, *supra* n. 108 at p 79.

Aside from actions based upon support, it may be worth considering the possibility of bringing an action simply based upon the fact that something that one once owned has been misappropriated (without consent) by another. Such an argument of course depends on acceptance of the idea that underground water is *pars soli* and hence owned in situ (in accordance with the doctrine *a coelo usque ad centrum*). As has been noted from *Acton v Blundell* and Scottish case-law that has followed this rule, such a view is at least plausible. If this is the case then it certainly seems difficult to countenance a rule that allows a thing owned by one party to be appropriated by another party without the first party's consent. This, however, is exactly what court decisions in the USA affirmed in relation to hydrocarbon exploration and this general issue is examined in the next chapter.

For Scots law, however, it is hard to see how such a viewpoint could be followed. Not even by pointing to adherence to the doctrine of *occupatio* can it be said that such a rule should be justified. As noted in chapter two, the key point about *occupatio* is that even under its Roman formulation it has never sanctioned the appropriation of things that are currently the property of another party.¹²⁷ Hence, in relation to migratory things (such as water), where the thing is owned *in situ*, it follows that another party cannot draw that thing away and claim rights of ownership in it on the grounds of *occupatio*. Once ownership of the migratory thing has been lost by the original owner, then (akin to the practical rule relating to wild animals¹²⁸) it may be appropriated by another under Scots law. It is hard to see, however, that Scots law would allow *occupatio* to occur when ownership is lost *because of the act* of the capturing party. It is one thing for the water to migrate by natural causes to beneath the land of another; it is quite another for the water to migrate *because of the activities* of the other party.

¹²⁷ Justinian, *Institutes* II, I, 12; *Digest* 41, I, 1, 3 and 5.

¹²⁸ Discussed in chapter 2.

The situation is, of course, different in respect of things which are *res nullius*. Since these things have never been owned, the party who appropriates the same should be able to claim ownership on the grounds of *occupatio* even if they have been appropriated from beneath the land of another.

These arguments are picked up again in the next chapter relating to hydrocarbons where the value of the substance itself may be of more consequence than is often the case with underground water and hence proprietary actions may be more relevant. Suffice to say at this juncture, that it will be illustrated that it is more credible to argue that under English law even where a migratory substance is owned *in situ* then it is likely that property would pass to the taker, where that is a consequence of legitimate activities upon his own land, leaving no remedy for misappropriation to the aggrieved party. Such a position may at least in part be due to the general lack of any notion of property in moveables and remedies arising from such ownership in English law. This issue is explored more fully in the next chapter.

Natural and non-natural uses of land

By contrast to the general position espoused in relation to the capture of underground water, Reid posits the general proposition that for Scots law a proprietor may not undertake works designed to capture water from another's land against the course of nature, although he cites no authority for this.¹²⁹ If this proposition were to hold true then it would seem that a landowner who conducts mining operations that serve to alter the flow of underground water which takes water away from a neighbouring land may be subject to legal action from the aggrieved party. As Reid continues, however, "this

¹²⁹ K. Reid, *supra* n. 49 at para 313.

difficulty is avoided by treating mining as a 'natural' use of land, and the consequences of mining conducted in the normal way as 'natural' consequences. The rules therefore remain unbreached, while at the same time permitting mining by normal methods".¹³⁰

Reid here cites a number of cases including *Durham v Hood*,¹³¹ *Blair v Hunter Finlay*,¹³² *Harvey v Wardrop*¹³³ and *Wilson v Waddell*.¹³⁴ The majority of the cases in fact relate to situations in which neighbouring land is flooded by the mining operations of an adjacent proprietor. In *Durham v Hood*,¹³⁵ for example, Lord President Inglis stated

[t]here can be no doubt... that the owner of a mine is entitled to work out his minerals without regard to the interests of his neighbour, so long as he confines his operations to his own grounds, and resorts to no extraordinary means of working; and if the effect of working out these minerals be to throw water down upon his neighbour who lies upon a lower level than himself, that is just the natural servitude which the lower heritor must submit to...¹³⁶

In this case as the respondent had sunk a pit and exploded large charges of gunpowder with a view to getting rid of water which flooded neighbouring land, this fell outwith natural working of the land and an interdict was granted by the court.

*Blair v Hunter Finlay & Co*¹³⁷ is a water abstraction case, however. In this case the court held *inter alia* that an interdict would not be granted to prohibit mining operations which diverted water away from springs on the surface formerly used by neighbouring tenants. The Lord Justice-Clerk was unequivocal: "[t]he law on the case is plain. The authorities go to this, that a lessee of minerals is entitled to work them in a way he pleases without

¹³⁰ *Ibid.*

¹³¹ (1871) 9 M 474 at 479.

¹³² (1870) 9 M 204.

¹³³ 1824) 3 S 322 (NE 229).

¹³⁴ (1876) 3 R 288, *affd* (1876) 4 R (HL) 29.

¹³⁵ *supra* n 131.

¹³⁶ at 479.

¹³⁷ *supra* n 132.

reference to the injury he may inflict on a neighbouring proprietor, so long as he works them in a fair and ordinary way. He is not responsible for pumping dry springs which had formally been advantageous to a neighbouring tenant...."¹³⁸ This view was echoed by Lord Cowan, where he stated that "the owner of minerals may work his mines in the ordinary manner, and will not be liable in damages, though mischief have resulted from his act, whether to neighbouring mine workings or to the adjoining heritors, provided always he has not acted wrongously or *in acmulationem vicini*."¹³⁹ Importantly, Lord Cowan appears to regard underground percolating water as *res nullius* until reduced into possession when he states that : "[t]he suspenders had no right to the water before it was brought to the surface, and as little as when it was pumped up [by the respondents]".¹⁴⁰ Hence, in this sense no conceptual problem arising regarding the sanctioning of some sort of 'legal capture' as outlined above.

Despite such viewpoints holding that where water is diverted away from a neighbouring land or passed onto neighbouring land by ordinary mining works, no action will lie in damages or in interdict, as we have previously noted, the case of *Bald* would suggest that even in respect of a natural use of land such as mining, where that results in the removal of support from underground water to neighbouring land then an action would proceed on that basis and it must be assumed that liability would be strict.

Summary of water rights

At this juncture it is appropriate to draw together some of the common themes from the general analysis set out in this chapter. The above discussion has revealed a lack of consistency and at times clarity of legal reasoning in respect of water exploitation rights

¹³⁸ *ibid* at p 207.

¹³⁹ *ibid* at p 208. Contrast this with the English position set out above in *Bradford v Pickles*, *supra* n. 17.

¹⁴⁰ *ibid*.

both under English and Scots common law. As noted above, the shifting physical characteristics of water makes it difficult to apply general ideas of property thereto. Moreover the public nature of water, in the sense that it is a life-sustaining resource vital for mankind, has rendered it subject to limitations on private ownership. In this sense, it is important to differentiate between ownership and rights to exploit. For groundwater, in terms of ownership, it is arguably best seen as *res nullius* until reduced into possession but it is subject to a largely, unlimited right to exploit under both Scots and English common law. Under common law there are few (if any in England) limitations on this private right to exploit. Water in defined channels is again not the subject of private ownership, but riparians enjoy certain, limited usufructuary rights to abstract. While such riparian rights can be viewed as limitations on absolute rights to abstract to take into account the correlative rights of other landowners, they do not countenance wider societal concerns.¹⁴¹ Although from an ownership perspective therefore, running water is generally deemed *res communes* in the sense that it too important a public good to be the subject of private ownership, this is somewhat irrelevant in the face of widely crafted private rights to exploit the resource.

The issue of a law of capture is generally fairly straightforward in relation to water resources. Drawing water away from the land of another by virtue of works upon one's own land, normally involves mere physical capture. Despite some *dicta* to the contrary, as noted such water resources are generally deemed ownerless until reduced into possession. Title therefore merely passes to the first party to reduce the resource into possession – even where the water has been physically taken from beneath an adjacent piece of land. In relation to percolating groundwater, the combination of a lack of technological knowledge regarding water levels *in situ* and the deleterious consequences

¹⁴¹ Moreover, the prescriptive right that may be constituted may in fact act to defeat the correlative rights of others.

of placing liability upon *bona fide* abstractors who had perhaps drawn water away from the land of others simply as a consequence of their legitimate uses, weighed heavily in judicial determinations supporting this rule. In general, the law in this area has therefore been more concerned with sanctioning legitimate industrial uses of water and in the absence of any other ground of action (for example, in Scotland withdrawals motivated by spire and perhaps removal of support of underground water) aggrieved landowners will have no remedy at law. The above issues will be revisited in the later analysis of reform of Scottish water law in chapters 6 and 7.

CHAPTER 4

PROPERTY RIGHTS IN FUGACIOUS MINERALS AND OTHER SUB-SOIL MATERIALS

Introduction

This chapter concentrates on determining rights of ownership and use in relation to hydrocarbons and other fugacious and semi-fugacious substances in the UK (including rights under the UK offshore hydrocarbons licensing regime). To this end, given a paucity of domestic sources, extensive reference is made to relevant US and Commonwealth authority. The chapter also analyses legal approaches to such migratory things manifest from time to time in relation to other related principles of land-law and in accordance with general notions of ownership. Some of the policy aims underlying the position of the law with regard to these questions are also teased out and will bear further examination in the following chapters.

Hydrocarbons and UK Law

Under both Scots and English common law, the general proposition holds that all mines and minerals that lie beneath the soil belong absolutely to the holder of the *dominium utile* or tenant in fee simple as part of the land, *a coelo ad centrum* (unless reserved to the superior).¹ For England, this premise was first enunciated by Coke as follows:

Land, in the legal signification comprehendeth any ground, soil or earth whatsoever, as meadows, pastures, woods, moores, waters, marshes, turfs and heath... It legally includeth all castles, houses and other buildings ... [and] besides the earth doth furnish man with many other necessities for his life, as it is replenished with hidden treasures, namely with gold, silver, brasse, iron, tynne, leade and other mettels and also with great varietie of precious stones and many other things for profit, ornament and pleasure. And lastly the earth hath in law a great extent upwards, not only of water, as hath been

¹ Although by statute all interests in coal are vested in the British Coal Corporation, presently by the Coal Industry Act 1994 and petroleum is now vested in the Crown by virtue of the Petroleum Act 1998.

said, but of ayre and all other things up to heaven, for *cujus est solum ejus est usque ad coelum*...²

The basic situation in Scotland in this regard can be summed up in the following statement: "a conveyance of land in unqualified terms [*dominium utile*] gives a right to property in the substance or solid contents^{2a} of the land without any assignable limit. This is what is meant by a conveyance being *a coelo ad centrum*. There are no limits in the vertical direction except such as physical conditions impose".³ As Reid has remarked "[s]o in a downward direction landownership encompasses the ground itself and all that is part of the ground (*pars soli*). This includes the constituent materials of the ground – soil, stones, minerals and the like – and also trees, plants, buildings and other objects above the ground which have acceded to it".⁴ This viewpoint is well established in both Institutional writings and subsequent case law.⁵

The common law position as regards hydrocarbons has never been clear cut, however. Prior to the statutory intervention of the Petroleum (Production) Act in 1934 that vested all petroleum on-shore in the Crown, the extent and nature of property rights that landowners held in petroleum reserves was unclear. Indeed the government of the day argued that given the uncertainties which shrouded common law rights to petroleum *in*

² *Coke Upon Littleton*, 4.a. It is fair to say, however, that under English common law in practical terms the doctrine of *a coelo ad centrum* has been watered down somewhat. This can particularly be evidenced in relation to cases relating to trespass into airspace where it seems that the right to airspace is limited to what a landowner would reasonably require – see for example, *Griffiths J in Bernstein v Skyviews and General Ltd* [1978] QB 479 at 487 – and competing rights of others may prevail. The doctrine is likely to be adhered to in a stricter fashion in Scotland – see K. Reid, *The Law of Property in Scotland* (1996) at para 163 and authorities below in footnote 3.

^{2a} The reference to 'solid contents' rather than mere 'contents' is interesting and may have been an implicit reference to non-ownership of water *in situ*. In the case at hand, nothing turns on this distinction, however, so perhaps nothing should be read into this.

³ *Glasgow City and District Railway Co v Macbrayne* (1883) 10 R 894 at 899, per Lord McLaren (affd (1883) 10 R 894 IFD). The principle of *a coelo usque ad centrum* is a proposition frequently asserted in Scots Law – see *Stair Insts* II, 3, 59; II, 7, 7; *Eskine Institute* II, 6, I; ii, 9,9; *Bell Principles* ss 737, 940. For a history and discussion of the maxim see F Lyall, *The maxim cujus est solum in Scots Law* 1978 JR 147.

⁴ K. Reid, *supra* n. 2 at para 198. Accession occurs where two pieces of property become co-joined in such a way as one becomes part of the other.

situ the drastic step of vesting such rights in the Crown was necessary to facilitate exploration.⁶ Much debate centred at this time as to whether it was possible to own such a fugacious mineral, *in situ*, or given its 'vagrant' characteristics, petroleum was (akin to perceptions relating to subterranean water⁷) merely *res nullius* until reduced into possession.

Given the fact that petroleum reserves (which include oil and natural gas) have been vested in the Crown for so long there has been little judicial authority in the UK concerning what property rights lie with landowners in respect of oil and gas present below their land. In the light of a spate of US cases regarding rights of ownership in petroleum reserves, it seems prudent, however, to examine some of the theories of ownership that have developed in the USA. Additionally a clutch of UK and Commonwealth cases dealing with natural gas and similar fugacious and semi-fugacious minerals and other sub-soil migratory things may also provide some guidance.

US Theories of Ownership of Hydrocarbons

Given the multi-jurisdictional character of the legal landscape in the US, it will hold few surprises that a number of different theories of ownership of hydrocarbons have been advocated and lent judicial support in the USA.

Hydrocarbons as Res Nullius

At the time of the first cases relating to property rights in oil and gas, the US courts found it difficult to reconcile traditional notions of ownership with a substance that

⁵ Craig II, vii, 17 & 18; Stair II, iii, 60 and 74; Erskine. II, vi, 1; Bell, *Prin.*, ss. 737-740, 940; *Robertson v Rutherford* (1840) 2 D. 1494, (1841) 4 D. 121; *Harvie v Stewart* (1870) 9 M. 129; *Boyd v Bruce* (1872) 11 M. 243; *Whyte v Lee* (1879) 6 R. 699.

⁶ P. Cameron, *Property Rights and Sovereign Rights: The Case of the North Sea* [1983] at p 53.

⁷ Discussed in the previous chapter.

moved by its own inherent characteristics to and fro beneath the soil. Given the fact that it was perceived that only animals *ferae naturae* and subterranean water shared these vagrant characteristics, the courts were quick to draw analogies with such things and apply their interpretations of the common law relating to such issues to hydrocarbons.⁸ Such analogies generally led to the result that a landowner would have no property in underground hydrocarbon deposits until they were extracted and reduced into possession.⁹

It can be observed that these early court decisions were therefore very much rooted in a formalist legal theory. Such a formalist approach considers legal reasoning to be a deduction that proceeds from general rules established in previous cases. When faced with a new set of circumstances, under formalist approaches, courts will attempt to draw relevant analogies to fill in the gaps and find relevant rules that can be applied.¹⁰ It is therefore perhaps of little surprise that in the wake of little other guidance, courts strove to draw analogies with such other migratory things as running water or wild animals where the law at least appeared to be relatively well established.

It should be noted, however, that the analogy drawn between hydrocarbons and underground percolating water or animals *ferae naturae* is somewhat misleading and was fuelled by a misconception and lack of judicial knowledge concerning the nature of oil and gas lying *in strata* that prevailed at the time of these decisions. As is now widely recognised, neither the migratory and fugacious nature of water nor the vagrant characteristics of wild animals can readily be attributed to hydrocarbons given that "oil and gas occur in essentially closed systems with possible ownership restricted to the

⁸ For an extensive list of cases refer to Hemingway, *The Law of Oil and Gas*, 3rd ed. (1991) at p 25.

⁹ See *Townsend v State*, 147 Ind. 624, 47 N.E. 19; *Hammonds v Central Kentucky Natural Gas Co.*, 255 Ky. 685, 75 S.W. 2d 204; *Jones v Forest Oil Co.*, 194 Pa. 379, 41 A. 1074.

owners overlying the reservoir" (and not as would be in the case with running waters or wild animals, a whole range of landowners).¹¹ A further important point is that until tapped it is now well recognised that these minerals do tend to remain relatively stable within a given reservoir.¹²

Today theories of ownership of oil and gas in US States have recognised these facts and the relative stability of hydrocarbon deposits beneath certain tracts of land has resulted in two different approaches that recognise landowners' proprietary rights: first, some States countenance ownership of oil and gas 'in place' beneath the surface of the ground as a separate estate; and secondly, some States recognise no ownership in oil and gas *in situ* as such, but rather what can be termed a 'qualified' proprietary right to search for and reduce the same into possession.¹³

'Texas Theory'

The theory of absolute ownership, often referred to as 'Texas theory' on account of its origins, prescribes that the estate in petroleum reserves is a 'defeasible' or 'determinable' fee.¹⁴ In what can seen as strict adherence to the maxim *cujus est solum ejus est usque ad coelum et ad inferos*, the fee holder owns oil and gas to the same extent that he owns other non-fugacious, minerals such as coal. It should further be noted that akin to the case with hard minerals, the estate in oil and gas can be severed from the remainder of the

¹⁰ See S.B. Presser and J.S. Zanolli, *Law and American History: Cases and Materials* (1980).

¹¹ Hemingway, *supra* n. 8 at p 25.

¹² J. MacIntyre, 'The Development of Oil and Gas Ownership Theory in Canada, in *Oil and Gas Law: Cases and Materials*' in R.J. Harrison (ed.), *Oil and Gas Law* [1975] at p 43.

¹³ Strictly speaking, where there is merely a qualified right of some kind to reduce hydrocarbons into possession, the hydrocarbons when in place remain *res nullius* – so at least in terms of ownership there is little difference between such an approach and a doctrine merely stipulating that hydrocarbons are *res nullius*. Moreover it shall be noted below that the issue of ownership is itself largely a red herring and in the final analysis, at least in determining abstraction disputes, courts tend to always arrive at the same place, albeit by a different legal journey.

¹⁴ See *Anshutz Land & Livestock Co. vs Union Pac R.R. Co.*, 820 F. 2d (19th Cir. 1987); *Ellif vs Texon Drilling Co.*, 310 SW 2d 558 (Tex. 1948).

land and hence transferred distinct from the land itself.¹⁵ As the Texan Supreme Court held in the case of *Texas Company*

in place [the oil and gas] lie within the strata of the earth and are a part of the realty. Being a part of the realty while in place, it would seem to logically follow that, whenever they are conveyed while in that condition ... a conveyance of an interest in realty exists. It is generally conceded that, for the purpose of ownership and conveyance of solid minerals the earth may be divided horizontally as well as vertically, and that title to the surface may rest in one person and title to the strata beneath the surface containing such minerals in another. Because of the fugitive nature of oil and gas, some courts, emphasizing the doctrine that they are incapable of absolute ownership until captured and reduced into possession... have made a distinction between their conveyance while in place and that of other minerals, holding that it created no interest in the realty. But it is difficult to perceive a substantial ground for the distinction. A purchaser of them within the ground assumes the hazard of their absence through the possibility of escape from beneath the particular tract of land, and, of course, if they are not discovered, the conveyance is of no effect, just as the purchaser of solid minerals within the ground incurs the risk of its absence, and therefore a futile venture. But let it be supposed that they have not escaped, and are in repose within the strata beneath the particular tract and capable of possession by appropriation from it. There they are clearly part of the realty.¹⁶

The fact that such mineral rights are severable from the estate reflect the potential economic value of the resource and thus efficiency rules would dictate that the such rights ought to be capable of being transferred in the same fashion as other minerals. Oil and gas differs from solid minerals, however, in that ownership in place is defeasible or determinable in the sense that such ownership rights are lost when the oil migrates to beneath the land of another. As noted above – and unlike the case with running water and wild animals – this is not something likely to be caused by natural causes. The key question from a practical perspective therefore, is whether title is lost when the oil migrates because of the drilling activities of an adjacent landowner. This important issue is returned to below.

¹⁵ Hemmingway, *supra* n. 8 at p 27.

¹⁶ 176 S.W. 717 at 719-720.

Qualified Ownership

The other popular American theory does not accept that full ownership can be vested in oil and gas *in situ*. Under the theory of 'qualified ownership', the landowner or lessee, whilst not having full property rights *in situ* to the resource, does have a recognised proprietary right to acquire such absolute title by reducing the hydrocarbons into possession.¹⁷ It has been asserted that this proprietary right is analogous with a *profit a prendre*¹⁸ under English common law or a servitude right to minerals under Scots law.¹⁹ In fact the US courts have alluded to both the concepts of *profits* and servitudes to classify this qualified proprietary right to reduce hydrocarbons into possession, although the majority of States that reject an ownership in place doctrine have alternatively held that a landowner holds a *profit a prendre* in the oil and gas in the ground. Importantly, it has been recognised that such a right is an estate in land in itself and hence severable from the land and transferable to others. In the case of *Dabney-Johnston Oil Corporation v Walden* the Californian Supreme Court held that

[t]he owner of land has the exclusive right on his land to drill for and produce oil. This right [arising] in the owner by virtue of his title to the land is a valuable right which he may transfer. The right when granted is a *profit a prendre*... an interest in real property in the nature of an incorporeal hereditament. Under the usual oil and gas lease the owner confers on the lessee for the term of the lease an exclusive right to drill for and produce oil and other hydrocarbon substances. The *profit a prendre*... is an estate in real property. If it for a term of years, it is a chattel real, which is nevertheless an estate in real property.²⁰ Where it is unlimited in duration, it is a freehold interest, an estate in fee, and real property or real estate. Thus... interests in oil rights which are estates in real property may be granted separate and apart from a grant of surface title.²¹

It has been pointed out that the approach outlined by the court where the estate is held for an unlimited time is somewhat contradictory. Bennet has suggested that

¹⁷ States that espouse such a theory include, New York, California, Alabama, Indiana, Illinois and Louisiana. For a fuller discussion of US ownership theories see Hemmingway *supra* n. 8 at pp 23-30 and Phillip *et al*, 'Modern Law of Conservation: And You Thought the Law of Capture was Dead' 41 *Rocky Mt. Min. Inst.* 17. Rights, *profits a prendre* are discussed below, *infra*.

¹⁸ A *profit a prendre* is type of interest which confers a right to take part of the soil, minerals or natural produce. This does not confer a right of ownership *in situ* (*Bolton v Forest Pest Management Institute* (1986) 21 DLR (4th) 242, at 249), although it is sufficient to sustain an action of tort against third parties.

¹⁹ T.C Daintith and A.D.G Hill, *Daintith and Willoughby's United Kingdom Oil and Gas Law* 2nd ed (1996).

²⁰ In similarity to a lease.

the [*Dabney*] court seemed to adopt the ownership in place concept that a separate mineral estate owner can be created from an oil and gas lease of unlimited duration. The court noted that 'although the oil and gas place doctrine is rejected, interests in oil rights which are estates in real property may be granted separate and apart from a grant of surface title' if the lease is for unlimited duration. In other words, the court recognized that such a lease creates a mineral estate and a mineral estate owner who owns the mineral estate in fee simple absolute – not just a mere *profit a prendre* or chattel real.²²

This skewed reasoning is perhaps symptomatic of the problems which arise from attempting to deal logically with a substance that does not fit easily into existing categories of property rights. It should be pointed out, however, that the potential conflict between an unlimited grant of a right to reduce a thing into possession not owned *in situ* and determination that such a grant represents an estate in fee has not unduly concerned the judiciary in allowing the transference of such qualified property rights in other contexts. As discussed in chapter two, under the English common law relating to wild animals, although it is recognised that there is no right of ownership in wild animals present on land as such, the right of a landowner to kill or reduce into possession the same – which must be classified as akin to a *profit a prendre* – may be transferred to others for an unlimited period as an estate in land.

It is worth noting that these sorts of definitional difficulties are manifest in other ways. For example, in respect of percolating groundwater, landowners receive proprietary protection afforded by the law in some ways but not in others. As noted in chapter three, under English common law it would appear that landowners are protected against

²¹ 52 P.2d at 243 (internal citations omitted).

²² J. Bennet, 'Ownership of Transitory Minerals, Utah and Zebra: Proof that Oil and Gas Ownership Law Needs Reform' *J.L.REL.* 2001.

loss caused by pollution of the resource by another whose land overlies the water but not against appropriation of all the water by the same individual.²³

Other States that have rejected ownership in place have instead held that landowners or leasees hold a servitude right to oil and gas. For example, as the Supreme Court of Louisiana (with a civil law origin) held in *Shaw v Watson* “[i]t is settled ... that a sale of a landowner’s right to oil and gas beneath his land is an alienation of a real right, which with regard to the prescription by which such rights are released is classed as a servitude upon the land”.²⁴ Again the key point about a servitude right is that it is a real right and one which can be transferred to others.

Comment

Such a right to reduce the oil and gas into possession are very similar to the qualified right to reduce wild animals into possession in that it countenances the practical difficulties of vesting full ownership in a substance that exhibits ‘vagrant’ characteristics (albeit not, it is submitted, as vagrant as wild animals) and hence is not under the control of landowners until reduced into possession while recognising the economic value of such substances to landowners which hence requires some form of legal protection. Moreover, the right is capable of being transferred to others separate from the land in order to facilitate its most efficient use.

Privy Council Authority

As has been noted, UK authority in this area is sparse. Furthermore it is difficult to draw any concrete conclusions from the case-law. A brace of Privy Council decisions

²³ The relevant case is *Ballard v Tomlinson* (1855) 29 Ch D 11 – the same rule also applies to wild animals – see chapter 2.

²⁴ *Shaw*, 92 S at 377-78.

dealing with Commonwealth appeals²⁵ on the extent to which property rights may be said to exist in natural gas sets out contradictory views.

In *U Po Naing v Burma Oil Company*,²⁶ the defendants held a lease to a number of oil well 'sites' and the right to take oil from them. In attempting to extract the oil the defendants were largely unsuccessful in this respect but did manage to draw out large quantities of gas. The plaintiff proceeded to raise an action against the defendants on the ground that the gas was his property. The Privy Council opined, however, that the plaintiff did not own the natural gas obtained from wells sunk for the purposes of extracting petroleum for the simple reason that natural gas, *in situ*, akin to underground percolating water, is *res nullius*, and not therefore a subject of ownership until reduced into possession.

The Privy Council, however, performed a notable *volte face* in the ensuing case of *Boys v Canadian Pacific Railway*.²⁷ In this case, CPR sold land to Boys, subject to the reservation of petroleum. The petroleum was then leased separately to an oil company which proceeded to commence drilling activities. Boys subsequently sought an injunction on the grounds that the 'cap of gas' which he owned on top of the oil would be lost on extraction. In denying the injunction, the court was nonetheless "prepared to assume that the gas whilst *in situ* is the property of the [landowner] even though it has not been reduced into possession."²⁸ This is in direct contrast to the opinion of the court in *U Po Naing* that gas, *in situ* is *res nullius*. Why the court took a different opinion in respect of ownership of the gas is not clear from the judgment in the case. As shall be discussed below, however, whether or not the hydrocarbons were owned *in situ* had no bearing on

²⁵ Based upon English common law.

²⁶ (1929) 56 L.R (IND. APP.) 140.

²⁷ [1953] A.C. 217

²⁸ *ibid.* at 230.

the decision in either case which followed US approaches in this regard and affirmed the efficacy of a rule of capture.

Fugacious minerals in Scots Law

Given the paucity of case-law it remains unclear what the position regarding property rights in fugacious minerals and other such sub-soil substances would be under Scots common law.²⁹ Speculation as to what the position in this regard would be can be gleaned by deduction from general principles. As has been noted above, that the maxim *cujus est solum* is a principle of Scots law is not debatable and while this brocard may have been watered down in practice in England this is arguably not the case in Scotland where as Reid suggests "the authorities are unanimous in asserting that dominium lies with the landowner and in him alone".³⁰ It is well established that, in general, minerals are therefore *pars soli* and owned *in situ*. Whilst the position regarding underground percolating water is unclear, on the balance of the authorities analysed in chapter 3 it is plausibly best viewed as incapable of private ownership until reduced into possession. Nonetheless, it would appear that given the relatively stable nature of oil and gas there is no reason to suggest that such hydrocarbons should not, akin to hard minerals, be viewed as *pars soli* and owned *in situ*.³¹ Moreover, as noted in the previous chapter, underground water is arguably treated as being incapable of private ownership *in situ* not merely because of its migratory nature but also because it is a life-sustaining resource essential to mankind.³² The same cannot readily be said of oil and gas deposits,

²⁹ This analysis is theoretical in some senses given that petroleum resources have been vested in the Crown by statute.

³⁰ Reid, *supra* n. 2 at para 198.

³¹ Of course the Petroleum Act 1998 expressly provides that hydrocarbons *in situ* belong to the Crown and the question here is that if there were no nationalisation of resources what would the legal position be?

³² Given the importance of water to society in general, this raises questions as to why the current common law in Scotland treats percolating groundwater and water in defined channels differently. This issue is discussed further in chapters 5 and 6.

particularly when other minerals of potential financial value to the landowner are (aside from exceptions provided by positive law) part of the estate in which they are found.

A law of capture and hydrocarbons

Nature of petroleum reserves

Recognition of the nature of petroleum reserves in their natural state is central to an understanding of the operation of a law of capture³³ in relation to hydrocarbons.

According to Taverne :

[p]etroleum consists of naturally occurring and naturally generated hydrocarbons and associated non-hydrocarbon substances. Natural hydrocarbons are generated in the subsoil, in rocks referred to as source rocks, through deep burial characterised by high temperatures and pressures. After generation, the natural hydrocarbons migrate through the rock formations or rock layers and become entrapped in the pores or fissures of a suitable rock such as limestone and clean sandstone, known as reservoir rock... When brought to, appearing, or present at the surface... under atmospheric conditions, petroleum may be either solid (tar, asphalt) or a mixture of liquid and gaseous natural hydrocarbons... After being brought up through the borehole and passing the wellhead... petroleum is split into crude oil, condensate and natural gas.³⁴

It is obvious, therefore, that despite the fact that land is owned in precisely defined areas, 'vagrant' petroleum resources, being no respecter of artificial boundaries, may not fit neatly below any single defined piece of land. Indeed, a reservoir of hydrocarbons may commonly extend beneath a surface area which has been divided into two or more tracts of land. In such instances, one of the major questions to be addressed relates to whether one landowner can legitimately develop the whole field by carrying out legitimate drilling activities upon his own land. While UK and Commonwealth guidance is sparse and contradictory, the overwhelming consensus of the US case-law is that at common law such a landowner is permitted to develop an entire field leaving the aggrieved proprietor

³³ The law or rule of capture is outlined in chapter 1 and discussed further in relation to water in chapter 3.

³⁴ Taverne, *Co-operative Agreements in the Extractive Petroleum Industry*, (1996) at p 1.

with a depleted resource and no legal remedy. Such activities are sanctioned by the law (or rule) of capture.

Origins of the law of capture

The term 'law of capture' has its origins in the oil boom of the late 19th century in the USA. The seminal decision in this respect is the 1889 Supreme Court of Pennsylvania case of *Westmorland and Cambria Natural Gas Co v De Witt*.³⁵ In this case, in affirming the existence of a law of capture in respect of hydrocarbons, the court ruled that:

Hydrocarbons, like wild animals but unlike other minerals, have the tendency and the power to escape, even against the will of its owner and to continue to be his property only while within the area subject to his control, but when they migrate to other areas or fall under the control of other persons, that title of the previous owner disappears. Therefore possession of the land does not necessarily involve possession of the hydrocarbons. If someone drilling on his own land reaches the common deposit and obtains through those wells the hydrocarbons of neighbouring areas, the ownership of that oil and gas passes to whoever produced it...³⁶

It is interesting to note that the term 'possession' is used here in the fifth line of the above quote instead of 'property' and the two concepts do not seem to be properly distinguished here. This notion that remedies stem primarily from possession and not property (or ownership) is an English common law trait that will be returned to later.

Following on from this decision, the subsequent case of *Barnard v Monongahela Natural Gas Co*³⁷ in a similar fashion afforded little protection for those whose oil was extracted from beneath their feet. In the opinion of the court, the only option was for concerned oil-men to 'use it or lose it' and make haste drilling their own wells. It is important to place these court judgements within the context of the industry at the time. From a policy perspective it is clear that the decisions of these courts set out a rule of convenience to meet the energy needs of a growing nation. Without such a rule, or any

³⁵ 18 A 724 (1889).

agreements between adjacent landowners, the oil simply could not have been extracted without incurring legal sanction.³⁸ As McIlvaine P.J. noted in *Barnard* "[the law of capture] may not be the best rule, but neither the legislature nor the highest court has given us any better".³⁹

Arguably the most interesting aspect of the law of capture is that it would appear that whether or not hydrocarbons are viewed as being owned *in situ*, subject to a qualified proprietary right to reduce them into possession, or are merely *res nullius* is not a relevant factor in a capture situation and in every case the *legitimate* drilling activities of one party may lawfully appropriate hydrocarbons which have been drawn from beneath another's land. At least in respect of the issue of capture, the issue of ownership of hydrocarbons in the ground is to a great extent superfluous. Bennet has gone so far to remark

one must ask whether these theories [of ownership] really assist legal practitioners and public administrators in the twenty-first century in predicting how a conflict in the arena of oil and gas will be decided or whether these theories are merely Socratic method fodder that law professors love to throw at students.⁴⁰

This may be true to some extent but nonetheless the issue of ownership throws up some interesting conceptual questions. Where ownership of the hydrocarbons in place is recognised it seems, at first blush, a somewhat odd notion that this right of ownership does not in practice prohibit the taking of property from party A by party B without party A's consent. As has been noted previously, in relation to oil owned *in situ*, the US courts have held that given the fugacious nature of oil and gas, ownership is simply taken

³⁶ *ibid.*

³⁷ 216 Pa 362, 65 A. 901 (1906).

³⁸ B. Clark, "The Law of Capture: A Brick Dropped in the Pond of Ownership Theory?" (1999) 7 OGLTR 178.

³⁹ *Barnard*, *supra* n. 37.

⁴⁰ J. Bennet, *supra* n. 22.

to cease if the oil and gas migrates.⁴¹ This does not merely apply where the oil migrates by natural causes (something which in practice is unlikely to occur); the exception goes so far as to sanction the 'capture' of hydrocarbons from beneath one tract of land caused by the legitimate drilling operations of an adjacent landowner. The Supreme Court of Texas opined that

[t]he rule is simply that the owner of a tract of land acquires title to the oil and gas which he produces from wells to his land, though part of the oil and gas may have migrated from adjoining lands. He may thus appropriate the oil and gas that have flowed from adjacent lands without the consent of the owner of those lands and without incurring liability to him for drainage. The non-liability is based upon the theory that after drainage the title or interest of the former owner is gone.⁴²

Many US states (i.e. those that have adopted qualified proprietary rights regimes), however, have found the absolute ownership theory untenable not only in relation to the question of how full ownership can vest in substances over which a landowner has neither possession nor control but also because the rule of capture is viewed as being anathema to this doctrine's central theme, along the lines of 'if someone has full ownership in property how can it be appropriated by another in the absence of the owner's consent without any resulting ground of action?' It has been argued that :

this result was contrary to the essential characteristic of ownership, viz., the right of an owner to follow and to re-acquire his property from one who has removed it without permission, and concluded that oil and gas are incapable of being owned apart from the rest of the land until actually reduced to possession, the right of the landowner being one to search for and produce such products.⁴³

⁴¹ Hemmingway, *supra* n. 8 at p 25.

⁴² *Elliff v Texon Drilling Co.* 210 SW 2d 558 (Tex. 1948). This theory is recognised in a number of states including Texas, Michigan, West Virginia, Ohio, Pennsylvania, New Mexico and Tennessee.

⁴³ Hemmingway, *supra* n. 8 at p 28.

Capture of hydrocarbons/other fugacious substances under UK/Commonwealth case-law

Does the law of capture operate in respect of hydrocarbons and other subsoil migratory substances in the UK? The short answer to this question is that the position is unclear and what little case-law exists in this area is somewhat contradictory.

Natural gas

In the aforementioned Privy Council appeal of *U Po Naing v Burma Oil Company*⁴⁴ the analysis is straight-forward and the court simply took the view that the gas, akin to running waters was *res nullius* and hence it belonged to no one until reduced into possession with the first party acquiring the gas thus taking title to it. This case then merely involves what can be termed 'physical capture' rather than 'legal capture' – title to the gas does not pass from one party to another as the gas is simply taken by the first party who acquires it from an ownerless state. Capture is 'physical' in the sense that it is physically taken from beneath an adjacent land and the law leaves determinations of ownership rights until after when possession by one party has taken place.

The subsequent Privy Council appeal of *Boys v Canadian Pacific Railway*⁴⁵ is far more enlightening on the issue of interaction between ownership and the law of capture. In brief, even though the court took the view that the gas could be owned in strata, their Lordships were not prepared to hold "that the [oil company] is under an obligation to conserve the appellant's gas with the consequent denial of the right to recover the petroleum in the usual way."⁴⁶ The most salient issue in *Boys* therefore is clearly not

⁴⁴ *supra* n. 26.

⁴⁵ *supra* n. 27. Facts discussed above.

⁴⁶ *ibid* at 228.

one of ownership but rather a balancing of correlative rights. As their Lordships noted, "the question [and hence the more important issue] is not whose property the gas is, but what means the respondents may use to recover their petroleum". From the judgement, the most important aspect of the case in terms of balancing the opposing rights of the applicants seems to lie in the fact that the respondents had an express grant to the petroleum (albeit not from the appellants) in respect of which it must have been implied that there was a right to work the same.⁴⁷ As their Lordships remarked "[b]ut the main strength of the respondents' case is that they have a direct grant of the petroleum, whereas the appellant has merely such residual rights as remain in him subject to the grant of the petroleum".⁴⁸ Obviously therefore, the facts of this case are not fully analogous to a situation where two adjoining landowners have equal rights to reduce petroleum (which lies in a joint reservoir) below their land into possession.

The fact that work was carried out in accordance with usual practice was also seen to be in the respondent's favour. Counsel for the appellants had contended that the earlier case of *Barnard-Arque-Roth-Stearns Oil & Gas Co Ltd v Farquharson*⁴⁹ was authority for the proposition that in working reserved petroleum the respondents would be bound to take proper care to preserve the appellant's gas. Their Lordships held that the key point in *Farquharson* (which in fact related to the reservation of 'springs of oil') lay in the fact that in that particular case the owners of the oil did not recover their oil in the normal way but rather did so by tapping the respondent's gas in a 'different container'.⁵⁰ Later in the *Farquharson* judgement the court in fact affirmed the general rule which was subsequently followed in *Boys*

⁴⁷ *ibid* at 228. There was no express right to work the minerals.

⁴⁸ *ibid.* at 229.

⁴⁹ [1912] AC 864.

the company are clearly entitled to search for and work for oil in these springs of oil and to win and carry it away from them, provided they do so in a reasonable manner and do as little injury as possible. While the point does not arise in this appeal for decision, their Lordships think that the company would not be responsible for any inconvenience or loss which might be caused to the respondents... in the conduct of their operations in the manner mentioned.⁵¹

In *Boys* it was pointed out that the only possible grounds of challenge might have been under the appellant's right of support, had the surface been disturbed. As there was no evidence of removal of support, this point was not considered further by the court. This aspect of the decision appears to be in line with US case law, alluded to above, which suggests that even where the gas (or oil) is owned *in situ* then it can be lawfully appropriated by the *legitimate works* of another. This decision – similar to the USA cases – is clearly underpinned by a policy consideration that supports the notion that natural resources are there to be appropriated and the purpose of the law should not be to impose barriers to such exploitation but rather facilitate legitimate activities in this respect.

Asphalt

The decision of the Privy Council in *Trinidad Asphalt v Ambard*⁵² sits somewhat uneasily with *Boys* and at first blush seems to support a thesis denying the operation of a US-fashioned law of capture. In *Trinidad Asphalt*, when the defendants dug away their land, the semi-solid pitch or asphalt present on the plaintiff's land was exposed to the elements and then oozed over into the defendant's border and was appropriated by the defendants. Additionally, the defendants' excavation also had the effect of damaging some buildings on the plaintiffs' land due to subsidence which resulted from the removal of the asphalt. The Privy Council was prepared to hold that there had been an

⁵⁰ *ibid* at 870.

⁵¹ *ibid* at 871.

⁵² [1899] A.C. 594.

actionable wrong and awarded damages in respect not only of damage to buildings but also the value of the pitch itself (which greatly exceeded the value of the buildings) on the basis that the pitch, as part of the soil carried with it a right of support which had now been eroded. The fact that damages were awarded in respect of the subsidence to the buildings caused by the removal of support should hold few surprises as this is clearly in line with the general obligation under English law not to remove support discussed in the previous chapter.⁵³ What is perhaps somewhat more unexpected is that damages for appropriation of the pitch was also awarded.

An action brought on the grounds of support would not generally involve an award of damages in respect of the value of the thing providing support which had been removed (of course, this is rarely an issue in support cases where the complaint relates to subsidence and structural damage). Nor did the Privy Council indicate that the actions of the plaintiffs amounted to theft (although it was indicated that the asphalt was part of the soil and hence by implication part of the estate in which it lay). In the rather opaque judgement, damages in respect of the pitch appear to have been awarded simply on a rather unsubstantiated equitable basis. The order of the full court in appeal that damages be payable only in respect to damages to property on the plaintiff's land was in the opinion of Lord MacNaghten of the Privy Council, "[a] conclusion so lame and impotent [that it is] hardly in accordance with the principles of equity or common sense"⁵⁴ The damages the Privy Council deemed suitable were in accordance with the original judgement of the Chief Justice and as such, payable in relation to the "injury [caused] by the loss of the [pitch]."⁵⁵

⁵³ See support section in chapter 3.

⁵⁴ *Trinidad Asphalt*, *supra* n. 52 at 601.

⁵⁵ *ibid* at 502.

What seems to set *Trinidad Asphalt* apart from the gas cases of *Boyers* and *U Po Naing* is that the latter cases are concerned with a situation where one party is legitimately exercising a right to work the minerals in accordance with proprietary or contractual rights. *Trinidad Asphalt* on the other hand involved behaviour by the defendants which can be considered *illegitimate* and hence in terms of balancing the rights of the two parties the court sought to find a way to uphold the plaintiffs arguments and support legitimate uses over illegitimate ones. Whether the actions of the defendants in appropriating the pitch were *prima facie* unlawful as such is a moot point. The fact that the land had subsided as a consequence of support being removed gave further credence to the plaintiff's case and provided a ground of action which allowed the court a device by which to award damages in respect of the value of the pitch. Such subsidence was of course not present in the natural gas cases alluded to above.

Running Silt

In *Jordenson v Sutton, Southcoates and Drypool Gas Co.*⁵⁶ which involved the withdrawal of silt from beneath another's land, the case was determined by reference to the fact that silt (unlike water) should be viewed as part of the soil and therefore subject to a right of support. When the actions of the defendants served to remove the silt from the plaintiff's land and hence caused subsidence, an actionable wrong had taken place and a claim for damages was upheld. The issue of property in the silt was not directly relevant to the analysis. Unlike *Trinidad Asphalt* there was no conscious effort to 'capture' the silt; this was merely a by-product of the work undertaken on the defendant's land. The silt was in itself of no value and hence no damages were sought in relation the substance itself.

Brine

The first case dealing with the removal of brine (salt dissolved in water) from beneath the land of another is *Salt Union Ltd v Brunner, Mond and Co.*⁵⁷ When it was alleged that the removal of brine from beneath adjacent land caused subsidence, the court was able to side-step the question of whether this gave rise to an actionable wrong as on the facts the court was satisfied that it had not been proven that the defendant's pumping activities had caused the subsidence. The (*obiter*) words of Alverstone CJ, suggest, however, that where legitimate pumping activities had the effect that brine was appropriated from beneath adjacent land there would be no actionable wrong. As merely amounting to water with salt dissolved therein, brine did not carry with it a right of support.⁵⁸

A different result ensued in the subsequent case of *Lotus Ltd v British Soda Co.*⁵⁹ In this case, serious damage had been caused to buildings on a factory site belonging to Lotus Ltd, a shoe manufacturer, due to subsidence of their land caused by 'wild brine' pumping by the defendants, on nearby land. Wild brine pumping is the extraction by pumping of saturated brine resulting from the dissolution of rock salt by water. As the defendants extracted the brine, more water flowed beneath L's land which had the effect of dissolving more salt. The resultant brine was pumped away to be replaced by yet more water which had the effect that land and buildings had subsided. The defendants argued with regard to the pumping of brine that no case should lie as "there is no distinction between brine and water when considering what may be pumped from beneath one's soil. Brine is merely water containing some degree of salt, and indeed all

⁵⁶ [1899] 2 Ch 617.

⁵⁷ [1906] 2 KB 822.

⁵⁸ The inconsistency inherent in not affording a right of support to underground water is discussed in chapter 3.

⁵⁹ [1969] 1 Ch 123.

water contains some salt.” They pointed, *inter alia* to *dicta* in *Salt Union Ltd v Brunner, Mond & Co* as authority for this proposition.⁶⁰ The plaintiffs however, pointed to the fact that “no question arises in the present case of a right to support from water, or even from brine, as opposed to a right of support from *solid rock salt*”. (emphasis added).⁶¹ The fact that such a mineral was part of the soil, it was argued, gave rise to a right of support. The court agreed with this viewpoint and following *Jardenson v Sutton Southcoates and Drypool Gas Co*⁶² found that the defendants were liable in damages. Additionally, L Ltd was entitled to claim an injunction to prohibit further such pumping by the defendants. The illogical differentials drawn between circumstances in which a party draws away underground water and where a party draws away a substance such as silt – which is itself suspended in water – that causes an erosion of support has already been noted.

Comment

To make some general comments about the law of capture, it is trite to remark that no real measure of doctrinal consistency results from the relevant case law. The main principles that appear to exist are that where a substance is captured from another's land, damages or an injunction may be brought primarily when a right of support has been infringed. For this to occur it would seem that the substance removed must be part of the soil – eg asphalt, silt or rock salt and that the removal of the same must cause actual subsidence (which ruled out a claim on such a basis in *Boys*). If no right of support is infringed then in so far as the activities which are carried out on the defendant's land represent a legitimate working of the land carried out in the usual way then it would appear that no action will lie – this is fully in line with US cases relating to oil and gas

⁶⁰ *ibid* at 127.

⁶¹ *ibid* at 125/126.

⁶² [1899] 2 Ch 217 C.A.

exploration. Although it causes conceptual problems with the idea of property, the extent of property rights vesting in the thing *in situ* do not appear to be germane to whether or not an action will lie (at least under English common law). Property rights are largely ignored and in the absence of any other ground of action such as support or a nuisance/negligence remedy, the right to exploit property legitimately out-flanks the property rights of the aggrieved party.

In *Trinidad Asphalt* damages were awarded in respect of the value of the appropriated substance itself. As has been noted, however, the judgement is somewhat opaque and no real legal rationale is presented to justify the award of damages in respect of the pitch which was appropriated by the defendants. It is arguable that the unsatisfactory nature of the judgement in *Trinidad Asphalt* is symptomatic of the deficiencies inherent in English common law notions of ownership, which shall be discussed below.

Limitations on English common law notions of ownership

While notions of ownership vary across legal jurisdictions, the concept has a number of general features that are commonly taken as read. According to Mattei,

[o]wnership must be protected by the most effective set of legal remedies that are available in the legal system given the circumstances. Typically, the owner will be protected against (1) dispossession (by a remedy that allows him to recover the commodity), (2) behaviors that interfere with the exercise of the property right both temporarily (nuisances) or permanently (destruction) (in this case the legal system will use the most effective protection that is available given the circumstances – typically injunctions and other specific remedies – rather than damages), and (3) claims both explicit or implicit of incompatible rights over the object of ownership.⁶³

As alluded to above, where a migratory thing is owned *in situ* by a landowner or leasee, a law of capture would appear anathema to these general legal protections attendant to

⁶³ U. Mattei, *Basic Principles of Property Law* (2000) at p 77.

ownership. To some extent it may be possible to rationalise this conundrum under the fact that the English common law arguably does not fully countenance the idea of ownership – at least in respect of moveables.

Smith, for example, goes as far to say that

[ownership] rarely troubles practising lawyers, whose concern is usually as to what property is subject to ownership or else what proprietary rights are recognised. The nature of ownership may be seen as more of a jurisprudential question than a legal one. [The reason for this lack of interest in the issue of ownership is that] [ownership in English law is remarkable for the absence of remedies based upon proof of ownership... [common law] remedies are usually based upon possession and rights to possession. It is generally sufficient simply to prove a better right than the other party and not necessarily to prove absolute ownership. This has the consequence that issues relating to ownership are less likely to come before the courts.⁶⁴

This legal proposition is very much symptomatic of the historical inductive development of the common law system, in which it is the existence of recognised legal remedies themselves which bestow rights, rather than the deductive civilian notion that the existence of a general right confers certain remedies. Under English common law, no special remedies have developed to enforce proprietary rights. Interests in tangible property are by contrast protected under the banner of 'trespassory protection' for interference with possession⁶⁵ which encompasses a number of tortious remedies including trespass and nuisance (in respect of land) and trespass and conversion (for personalty).⁶⁶

⁶⁴ R. Smith, *Property Law* 2nd ed (1998) at p 7.

⁶⁵ This emphasis upon remedies based upon possession rather than ownership is a very pragmatic phenomenon. Penner has noted that "[i]n]o one can do anything to interfere with a person's ownership of an item, since that is a normative relationship. A person can only do things which interfere with a person's possession. Interference is factual, and alters a person's factual relationship to an item of property. The only thing that can alter a person's ownership of his property are rules of law or the exercise of legal powers" – J. Penner, *The Idea of Property in Law* (1997) at p 144. It is important to emphasise, however, that possession is not merely a factual manifestation of ownership, it is a distinct legal right in itself – see *Halsbury's Laws of England*, (1960) 3rd ed Vol 29 at paras 720–724.

⁶⁶ See generally A. Tatonborn, *Clerk & Lindsell on Torts* (18th ed (2000), Ch.14; R. F. V. Heuston and R. A. Buckley, *Saborn & Heuston on the Law of Torts* (21st ed) (1996); W. V. H. Rogers, *Winfield & Jolowicz on Tort* (16th ed) (2002); S. Worthington, *Personal Property Law: text and materials* (2002) chpt 7.

It is tempting to argue therefore that given that oil and gas in the ground has never been possessed by the landowner then as long as the actions of the taker are in themselves legitimate and in the absence of any other remedies such as support (and there would clearly be no trespass in such a scenario) then in keeping with the emphasis on possessory remedies then no valid claim can be made by the aggrieved party. This, however, is to oversimplify matters. Where oil and gas is owned *in situ* or subject to a qualified right to reduce into possession, even where, as usual, there is no other available action based on support or trespass, the tort of conversion (a possessory remedy) would arguably allow the return of the oil and gas (or an equivalent value). Even though the oil and gas is not in the possession of the landowner when it is taken, the original landowner undoubtedly has a *right to take the same into possession* which importantly may be the basis for an action under this remedy.⁶⁷

Despite the theoretical possibility of such a possessory remedy it is likely that obstacles to the bringing of a claim may result from the fact that English common law does not recognise ownership as an absolute title. In practice it is not for the aggrieved landowner to prove an absolute title, rather that in relative terms his title is better than the takers.^{67a} This is precisely perhaps where the problems for the aggrieved landowner arise in that the judge-made law of capture simply holds that the taker's title is the better one in relative terms. The case-law is unanimous that there is simply a choice to be taken between the competing rights of the parties. The law of capture affirms that the ascendancy of exploitation of natural resources accords the capturer with the better right than the correlative right (of potential future exploitation) by the other party. This would even be the case where there is ownership *in situ* of underground minerals. In the

absence of a case founded on support, or trespass the legitimate taker in possession gains a title which is deemed by the courts to be better than the landowner who has seen the resource taken from beneath his feet.

Injunction

The question of whether an injunction could be applied for prior to exploitation of the shared resource taking place may be a different matter, however. The remedy of injunction may be sought by any party to prevent the commission of alleged torts which are anticipated. Given that the award of damages is the primary remedy in England and Wales, an injunction, as a discretionary remedy is generally granted where the injury or loss would be such that it could not properly be quantified.⁶⁸

To succeed with such a remedy, an aggrieved proprietor must first establish that he has a proprietary interest which will be irreparably damaged if the action of the defendant is not halted.⁶⁹ While a landowner may well have a proprietary interest in oil and gas beneath his land, it seems clear, however, that a law of capture sanctions the legitimate activities of the other party so that his proposed act cannot be seen as an unlawful invasion of those property rights and hence an alleged tort.

It needs to be noted, however, that injunction is an equitable remedy which can be granted at the discretion of the court. This remedy is normally granted when the court is of the opinion that it would be "just and convenient" to do so.⁷⁰ Even though in practice the courts have generally been reluctant to grant an injunction where all the

⁶⁷ See *Halsbury's Laws of England* 4th ed. Vol 45 (1985).

^{68a} This rule can be traced back to *Armory v Delamire* (1722) 1 Stra. 505; 93 E.R. 664.

⁶⁸ Brazier, *Street on Torts*, 11th Ed. (1999) at p 516.

⁶⁹ *Proctor v Bailey* (1889) 2 Ch. D390; *Pride of Derby Ltd v British Celanese Ltd* (1953) 1 Ch. 149 at 181.

⁷⁰ *North London Ry v Great Northern Ry* (1883) 11 QBD 30; *Dupont Steels Ltd v Sirr* (1980) 1 WLR 142.

elements of tort necessary to found an action are not present,⁷¹ courts have on occasion granted injunction to protect title to property, even where no tort has been established.⁷² In *Springhead Spinning Co. v Riley*⁷³ the defendants were officers of a trade union who gave notice to workmen, by means of placards and advertisements, that they were not to hire themselves to the plaintiffs pending a dispute between the union and the plaintiffs. The plaintiffs subsequently sought an injunction to restrain the actions of the defendants as such actions were intimidating and hence prevented the workmen from hiring themselves to the plaintiffs which thereby rendered them from unable to continue in their business and the value of their property was seriously injured and materially diminished as a result. The court held that the acts of the defendants amounted to a crime and the court would interfere by injunction to restrain such acts, inasmuch as they also tended to lead to the destruction or deterioration of property. Although it was recognised that the chancery court has no jurisdiction to prevent the commission of crimes, Sir R. Malins VC, held that “[t]he jurisdiction of the [Chancery] court is to protect property, and it will interfere by injunction to stay any proceedings, whether connected with crime or not, which go to the immediate, or tend to the ultimate destruction of property, or to make it less valuable or comfortable for use or occupation”.⁷⁴ Clearly the facts of this case are different from the ‘capture’ scenario central to this analysis but the general principle remains that injunction may be granted even in circumstances where no tort is proven. It is surely at least arguable that reasoning such as this might be applied to the hydrocarbon scenario before a proposed capture takes place.

⁷¹ *Burnett v George* [1993] 1FCR 1012, CA.

⁷² *London v Ryder (No. 2)* [1953] Ch 423; *Springhead Spinning Co v Riley* (1868) LR 6 Eq 551.

⁷³ *ibid.*

⁷⁴ at pp 558 – 559.

It does at least seem plausible that a claim brought before the court for an interlocutory injunction which would provisionally halt a party from extraction until the final application is heard, would not fall on deaf ears. In respect of such interim applications, the court must merely be satisfied that the 'balance of convenience' between plaintiff and defendant favours such a grant.⁷⁵ As Nwosu points out, amidst a lack of clarity as to the efficacy of a law of capture, "the grant of an interim (*sic*) injunction will be 'just and convenient' in the circumstances because while it preserves the plaintiff's proprietary rights, it will not on the other hand permanently extinguish the defendant's interests."⁷⁶ From a practical point of view it is likely that the granting of an interlocutory injunction would provide a window within which the adjoining proprietors may be able to forge an agreement in respect of joint development of the resource.

Remedies under Scots law

For Scotland, as alluded to above, the authorities are clear that the landowner alone holds dominion and hence in respect of sanctioning the propriety of the appropriation of another's property upon or beneath land without the owner's consent, there would be no balancing of rights as such. As noted in chapter 3, it is hard to see how Scots law would sanction the appropriation of a thing owned by another party without that party's consent.⁷⁷ To establish how any remedy under Scots law would operate in practice, it is

⁷⁵ As Brazier notes a *prima facie* case does not need to be stated, provided there is a 'serious question' to be answered - Brazier, *supra* n. 68 at p 317. If this is the case, the balance will thus lie in favour of a grant of injunction if the award of damages would be inadequate or inappropriate and the plaintiff has given an undertaking to pay damages in respect of the defendant's losses from the injunction if the plaintiff loses his case. See *American Cyanamid Co v Ethicon* [1975] AC 396.

⁷⁶ Nwosu, *supra* n. 31 at p 55.

⁷⁷ The non-application of *occupatio* where a migratory thing is held to be owned *in situ* is also discussed in chapter 3.

perhaps useful to draw analogies with the law relating to wrongful appropriation of minerals in general.⁷⁸

While minerals *in situ* are heritable as a severable estate in land, once they are removed from the strata in which they lie, they are by definition rendered moveable. Remedies for unlawful removal would therefore relate to the minerals as moveable property. In respect of minerals in general, Gordon has noted that,

[w]rongful removal may involve criminal liability for theft or otherwise, but, this apart, the minerals themselves may be recovered in the same way as any other moveable property which has got into the wrong hands, and an action for damages may be brought in respect of the wrongful removal. It will normally, in fact, be more practical to claim damages, and all authorities seem to relate to actions of damages.⁷⁹

Damages for minerals in general are granted in respect of the value of that removed.⁸⁰

This undeniably will cause a problem in respect of capture of fugacious minerals from a shared resource as even taking into account today's technical expertise in such matters it may be difficult to quantify the oil that has been taken from beneath an adjacent tract of land. Nwosu has noted in relation to offshore oil exploration:

despite the undisputed advancement in geology and geophysics, it is still impossible to ascertain the quantity of oil in a particular licence area with relative precision. This is moreso, where the reservoir straddles two adjacent blocks. This is why there is always provision for redetermination of tract participation in unit operating agreements.⁸¹

⁷⁸ This analysis is of course somewhat hypothetical in that throughout the UK petroleum reserves are vested in the Crown by legislation, although an action could theoretically proceed on the basis of appropriation of some other migratory thing of value.

⁷⁹ W. Gordon, *Scottish Land Law* 2nd ed (1999) at para 6-78.

⁸⁰ *Gordon v Stoutie* (1837) 15 S. 549.

⁸¹ K. Nwosu, 'Is the Law of Capture applicable in Petroleum Operations in the North Sea?' (1997) 1 *C.A.R.* 1, 117 at p 125. There are furthermore various different processes that can be employed to estimate oil in place including stock tank oil originally in place (STOOIP), recoverable oil, or moveable oil in place (MOOIP).

It is further worth noting the English decision of *Indian Oil Corp. Ltd. v Greenstone Shipping S.A.*⁸² In this case, it was held that if the property of two persons becomes comixed and intractable difficulties in determining the respective shares of the parties resulted from the wrongful act of one party, that party will forfeit his interests in favour of the other who obtains title to the whole. It is submitted that such an outcome would be inequitable in relating to oil and gas drilling unless some fraudulent or grossly negligent action could be attributed to the defender. If the petroleum had been abstracted in ignorance or on the basis that it was a mere incident of their exploit one's own resources then it would seem more appropriate to strike some sort of equitable arrangement based upon an estimation of the resource misappropriated from beneath the other's land. Although admittedly this solution does not circumvent the practical difficulties with estimate the extent of oil resources below adjacent tracts of land.

The established rule in relation to wrongful excavation of minerals generally is that the minerals taken are valued *in situ* and that the full value, without an allowance taken for the costs of excavation, would be payable if the taking has been done in the absence of the right to do so.⁸³ If the taking had been done in good faith and with no knowledge of the other party's title then it would be likely that the costs of working would be deducted from any damages payable.⁸⁴ What the position in respect of hydrocarbons in this regard would be is unclear. It may be suggested, however, that given the lack of clarity surrounding property rights in oil and gas *in strata* and the extent to which a law of capture operates, if the court were to find in favour of an aggrieved party, then it would

⁸² (1988) QB 345.

⁸³ *Gordon v Suttie* *supra* n. 80.

⁸⁴ *Davison's Trs v Caledonian Ry* (1895) 23 R. 45.

seem likely that any award granted would deduct the cost of working the oil and gas from any damages payable.⁸⁵

The issue of whether a law of capture would operate in Scotland and circumvent any remedy sought has already been discussed in this thesis in chapter 3 in relation to water. If, the thing in question is *res nullius*, by operation of the doctrine of *occupatio*, it would lawfully vest in the first party able to reduce it into possession. Recalling the discussion in chapter 3, it was submitted that it is very hard to see how the law could sanction the appropriation of thing which is owned *in situ* from one landowner to another without the first landowner's consent or some compensation payable. Scots law follows Roman law in stipulating that ownership is an absolute right.⁸⁶ In general, "[p]roof of a right of ownership prevails over other claims not derived from the owner's right".⁸⁷ Restitutory remedies arising from ownership should allow for the return of the property taken by another. As Gordon has noted, however, the situation is not so clear cut:

in Scots Law, the distinction between the remedies of owner and possessor is blurred. As Stair puts it : 'we make not use of the name or nature of Vindication... We have shown before [*Lib I, Tit Restitution* [I, 7] that there is a real obligation upon possessors, not having title sufficient to defend their possession, to restore or re-deliver, not only to the proprietor, but to the lawful possessor, which is also consonant to that common principle of the Roman law *suum cuique* [to each his own]'⁸⁸ While in Scots law, the owner is, in principle, entitled to recover the property from any other holder, his claim is not based as firmly on his ownership as it is in Roman law. His claim is rather that the present possessor is not entitled to withhold the property from him because of the circumstances in which he acquired it. His action is therefore a petitory action for delivery based on the fact that the possessor has no title to withhold the property in question, rather than a claim for delivery based on his ownership, although there may also be a declaratory conclusion that the pursuer is the owner of the property claimed".⁸⁹

⁸⁵ A claim for interdict would also be possible.

⁸⁶ See Erskine, II, i, 1.

⁸⁷ D. Carey Miller, *Corporal Moveables in Scots Law* (1991) at p 6.

⁸⁸ *Stair* IV, 3.45.

⁸⁹ W. Gordon, 'Corporal Moveable Property' in K. Reid (ed), *The Law of Property in Scotland* (1996) at para 531.

It would remain to be seen in practice, whether a landowner with a right to a migratory thing *in situ* could found upon his ownership *in situ* as a basis to claim the return of the resource concerned (or equivalent monetary value) in a 'capture' situation. Unlike the situation with minerals generally, where there would have been in evidence some illegitimate act to remove the same, capture of a migratory thing may entail a legitimate act upon the abstractor's own land. Would such circumstances, in Gordon's words "in the circumstances in which he acquired it" render the new possessor with "no title to withhold the property in question"? If a court were to take the view that to grant an aggrieved proprietor a remedy in such circumstances may stand in the way of legitimate exploitation and lead to transactional costs and inefficiencies concerning estimating the extent and value of the resource then it may be that, despite the initial ownership in place, the court would find the circumstances in which the taker acquired it would not give rise to a presumption that a remedy should be available.

Rights of exploitation under the UK Offshore Petroleum Licensing Regime

From a practical perspective one the most important UK issues relevant to this analysis is the law relating to property rights and a rule of capture in respect of hydrocarbons drilled for under the terms of the UK offshore licensing regime. The offshore context is by far the most important in commercial terms in the sense that given the lack of petroleum reserves onshore, the vast majority of hydrocarbon exploration takes place offshore. Some space is devoted here to an analysis of the application of current legal thinking as regards property rights in migratory things and a law of capture in relation to the offshore context. The discussion reveals some practical difficulties and deleterious consequences of the imposition of traditional (US-based) viewpoints and moreover, flags up a number of relevant policy factors to be considered when developing an appropriate property allocation regime for migratory things in general.

To begin with it is worth noting that debates over the applicability of the law of capture are relevant from a practical standpoint in this context. Of course this is true because, despite the fact that offshore licences in the UK are awarded in relation to strictly defined blocks of UK seaward areas, 'vagrant' petroleum resources, being no respecter of artificial boundaries, do not always fit neatly within a single licence area. Indeed, a reservoir of hydrocarbons may extend beneath a surface area which has been divided into two or more blocks held by different licensees.⁹⁰ In such instances, one of the major questions to be addressed relates to whether each licensee should develop separately that part of the reservoir underneath his own licence block, or whether the consortia engaged in the exploitation of the joint-reservoir should forge a pact ('unitisation agreement') to take necessary steps to develop the reservoir as a single unit. As shall be noted, the UK regulatory regime may compel the joint development of fields which straddle more than one block. The rationale behind compulsory unitisation – primarily to engender more efficient exploitation of natural resources – is discussed in more detail in chapter 5.

Unitisation powers of the Secretary of State

In relation to UK offshore petroleum operations, by virtue of Model Clause (MC) 23 of the Petroleum (Production) (Seaward Areas) Amendment Regulations 2004⁹¹ the Secretary of State is empowered to require such unitisation where he is "satisfied that a field lies within a licensed area and an area comprised by another licence and considers that it is in the national interest in order to secure the maximum ultimate recovery of

⁹⁰ In the Minister for Energy's report to Parliament in 1992, of 47 offshore production fields in the UK sector of the continental shelf at the end of 1991, some 19 of these fell within areas underlying two or more licensees. - M. Taylor and S. Tyne, *Taylor and Winsor on Joint Operation Agreements*, 2nd ed. (1992) at p.110.

⁹¹ SI No. 1435.

petroleum and to avoid unnecessary competitive drilling that the field should be unitised.”⁹² In such circumstances, if the licensees to the neighbouring blocks cannot agree on a unitisation scheme which meets with the approval of the Secretary of State, the minister may impose his own scheme on the parties. Such a scheme, by virtue of MC 28 must be “just and equitable” to the parties.

In practice, however, there is no known case where a scheme has been imposed by the Secretary of State and it may be speculated that parties are keen to shy away from state intervention and invariably reach their own agreement. Reaching their own agreement also serves to avoid the delays and attendant costs that may result from the imposition of a scheme by the Secretary of State.⁹³

Unitisation agreements in the UK

Unlike the situation as regards onshore drilling in the USA, it is commonplace for the unitisation agreements in relation to a joint reservoir to be crafted at the earliest possible stage of exploration in the UK offshore petroleum regime. The huge expense of the complex offshore technology, limited seasons for exploration and the capricious nature of labour and market supply build a convincing argument for the early implementation of a unitisation agreement.⁹⁴ In any case, the overriding factor compelling the earliest possible unitisation flows from the Secretary of State’s MC 28 power to compel unitisation in the absence of an agreement by the parties.

⁹² Taylor and Tyne, *supra* n. 90 at p 110.

⁹³ Additionally any scheme imposed by the SS may be done in such a way to be favourable to the SS rather than the parties (eg in respect of timing).

⁹⁴ Pitsas, *The Joint Operating Agreement in the UK - the rationale behind the main provisions*, CPMLP PgD thesis (1991) at p 56.

Unitisation agreements, which in relation to the joint reservoir, override the provisions of each licensee's Joint Operating Agreement (JOA)⁹⁵ are typically complex and multifaceted and have been discussed in some detail elsewhere.⁹⁶ When a unitisation scheme is imposed by the Secretary of State (or where parties agree a scheme to avoid such an imposition) the question of a law of capture operating becomes somewhat redundant. As shall be noted below, however, there may be circumstances under the UK offshore regime where unitisation could not be imposed by the SS and hence the applicability of a law of capture may become of great import.

Where unitisation might not be imposed

First, there have been instances where the licensees holding the majority of a field's reserves have been allowed to develop the joint field in its entirety.⁹⁷ It has been noted that in these situations, "[the DTI] will generally expect the companies wishing to proceed with the development to obtain the consent of licensees of the adjoining block who are likely to require an undertaking from those developing the field that they will subsequently enter into unitisation discussions if requested to do so."⁹⁸ In 1991, a spokesman stated that the "Department of Energy,"⁹⁹ would act to ensure that no actions which may result in the capture of hydrocarbons from adjoining acreage can take place unless the agreement of the licensees has been obtained."¹⁰⁰

In practice, a waiver would only be granted by an adjoining licensee where it was considered that the oil lying in that part of the field beneath their block was of negligible

⁹⁵ The JOA is the contract that governs the relationship between joint-venturers engaged in production within a particular licence area. For a discussion see Taylor and Tyne, *supra* n. 90.

⁹⁶ For example, English, *Unitisation Agreements in Upstream Oil and Gas*, David (ed.) (1996) at p 115; Taylor and Tyne, *supra* n. 90 at p 110.

⁹⁷ Model Clause 17. See Taylor and Tyne, *supra* n. 90 at p 111.

⁹⁸ Taylor and Tyne, *supra* n. 90 at p 111.

⁹⁹ As it was then known.

¹⁰⁰ Quoted in Taylor and Tyne, *supra* n. 90 at p 111.

commercial value. The difficulties with such estimations, however, include the fact that if, as normal, a waiver was granted prior to production, little may be known at the time about the geology and geo-physics of the field. Indeed, it may at a later time transpire that a greater quantity of oil than had hitherto been estimated subsists beneath the waiver's block. It is commonplace, therefore, for the agreement within which the waiver is set out to include a provision enabling the parties to re-evaluate the situation. Clearly, if a law of capture was held to operate, it may be prudent for the party issuing to waiver to stipulate that any new unitisation agreement agreed upon at this stage operates with retroactive effect.¹⁰¹

A second scenario where the efficacy of capture may become relevant is set out by Taylor and Tyne when they assert that in circumstances where licence-holders covering part of a field which also falls into an adjacent block are able to develop the entire field, and the adjacent block licensees are either unwilling or unable to drill their own wells, then on a strict interpretation of the regulations, it would appear that the Secretary of State has no power to impose a unitisation under MC 28.¹⁰² This argument stems from that fact that strictly speaking MC 28 can only be invoked to avoid unnecessary competitive drilling and to secure ultimate recovery of petroleum – it cannot be invoked merely to achieve equitable distribution of resources to adjacent licensees. If only one licence group is seeking to develop the field and has the technical capacity to do so then there is no competitive drilling, no concerns over the maximum recovery of petroleum and therefore arguably no national interest requirement for unitisation.¹⁰³

¹⁰¹ Alternatively, if as normal one licensee has sold his rights in relation to a joint reservoir to an adjacent licensee, it would be prudent to include a flexible pricing clause.

¹⁰² Taylor and Tyne, *supra* n. 90 at p 110.

A further problem might possibly arise when an adjoining licence area has not been awarded to another licensee. If a joint reservoir is discovered in such circumstances, to avoid the appropriation of oil from beneath an adjacent, unlicensed block, it is probable that the Secretary of State may withhold development consent until the next licensing round or perhaps make an *ad hoc* 'out of round' licence award.¹⁰⁴ It has been suggested that in such a scenario it would not be in the national interest to allow the licence holder to develop the whole field by drilling a well lawfully within his own licence area.¹⁰⁵ Again, however, on a strict interpretation of the regulations, it is arguable that MC 28 will not apply and therefore it may not be possible for the DIT to withhold development consent pending a unit agreement.

Further possible cases may arise when after production has commenced, a joint reservoir from which oil has been drawn by one group of licensees is detected where one was not previously believed to be in existence. From the date of discovery, unitisation would be compelled under MC 28; prior to this date, however, questions remain as to the legal ramifications of drainage by a licensee from beneath an adjacent block.

The Import of the Law of Capture

Save where a party has knowingly misled the DTI in order to circumvent licence requirements on unitisation and to obtain DTI approval for a development programme,¹⁰⁶ in all of the above scenarios if it is held that a law of capture exists in this context it is arguable that parties who have had oil extracted from beneath their licence

¹⁰³ It may be speculated that the SS would seek to impose unitisation in such circumstances, but it is arguable that such a move could be challenged in judicial review by the party seeking to develop the whole block.

¹⁰⁴ Some doubt regarding the efficacy of this has arisen in light of the 1994 Hydrocarbons Licensing Directive; Council Directive 94/22/EC.

¹⁰⁵ Nwosu, *supra* n. 31 at p 16.

¹⁰⁶ As parties are not able to benefit from their own fraud.

area will have no remedy available to them to compensate for loss of the oil. In the absence of any agreement to the contrary, by operation of the law of capture, any oil drawn from beneath the adjacent block would become the property of the licensees who captured that oil.

In respect of whether such a rule exists in the UK, the Department of Trade and Industry laying its cards on the table, has been unequivocal :

...it is only the oil which lies vertically below the licence which a licensee is entitled to extract... there is no doubt in the department that a licensee is not entitled to the oil which may flow into the licence area from adjoining acreage - licensed or unlicensed - as a result of any action on the part of the licensees viz. production. To put it briefly the law of capture does not apply in the UK.¹⁰⁷

This view is contrary to US and Commonwealth jurisprudence analysed earlier in this chapter. Against this air of confusion then, the next section examines the legal efficacy of the law of capture within the context of the UK offshore petroleum licensing regime. It should be noted that there is at the time of writing no direct judicial authority on this issue.

Property Rights of the Licensees

As has been discussed earlier in this chapter, despite the DIT's position, according to Commonwealth and American authority it appears that a law of capture in relation to hydrocarbons would exist as a matter of common law, at least where a party is exercising a legitimate right to work the minerals in the usual manner. While it may be possible

¹⁰⁷ Hughes, *Department of Energy View on Unitisation* Langham Oil Conferences, London March 26 1992. Taylor, 'Unitisation' in *European Energy Law : Selected Topics*, MacDougall and Walde (eds.) (1994) at p 227, has pointed out that this assertion would seem curiously inconsistent with the provisions of MC 28 which compel unitisation in the face of competitive drilling if in fact that self-same process is not a legitimate concept. In this writer's opinion, however, there is nothing inconsistent in the formation of good industry practice regulations which seek to compel behaviour which avoids conflict with common law principles.

that hydrocarbons could be viewed as *pars soli* and hence owned *in situ* this would seem not to be a bar to a rule of (legal) capture operating at least under English common law and claims brought under the heading of removal of support would not be appropriate on the obvious basis that subsidence will not have occurred. The position may however be different under Scots law where the importance of the issue of *dominium* and the availability of remedies arising from ownership itself may render a law of capture in relation to hydrocarbons more difficult to accept. It would seem therefore that an issue of importance is determining what law applies to the offshore environment. It might also be said at this stage that whatever the position as to a law of capture may be with regard to general principles of the common law, the offshore petroleum licensing framework and property rights thereunder may in fact bring about different results.

The application of UK domestic laws to the offshore regime

Within the context of offshore oil exploration, it is therefore necessary to establish when English law applies and when the applicable law is Scottish. Additionally, and more fundamentally, it needs to be established that UK laws apply at all to the offshore regime.

The application of provisions of the domestic law to the UK continental shelf is a matter for international law. Acting with authority granted by international law, the UK has taken steps to extend criminal and civil laws offshore. To this end, under the auspices of the Continental Shelf Act 1964, the Petroleum Act 1998, ss 10 and 11 empowers the government to make Orders in Council extending civil and criminal law offshore. For the purposes of this thesis the extent that the civil law is extended and the circumstances

Indeed, if capture doesn't exist under the common law, in the absence of unitisation (compelled by MC 28 or otherwise) oil could simply not be extracted from joint reservoirs.

in which the applicable law is Scottish or English are the most salient questions. In this sense, Daintith and Willoughby have noted that

[w]ith regard to the application of the civil law offshore the decision was made to split the United Kingdom designated waters into English, Scottish and Northern Irish "areas",¹⁰⁸ each under the appropriate domestic jurisdictions. The present authority for the division of the United Kingdom designated waters into English, Scottish and Northern Irish areas is section 1(1) of the 1998 Act and the Civil Jurisdiction (Offshore Activities) Order 1987.¹⁰⁹ The method adopted by the Civil Jurisdiction (Offshore Activities) Order to obtain these ends is to apply the civil law of the relevant domestic jurisdiction to the appropriate area and also to give the relevant court hierarchy jurisdiction over the appropriate area".¹¹⁰

Unfortunately the wording of the Jurisdiction Order is pregnant with ambiguity and leaves open the question of the exact scope of the application of the civil law. Nor is the wording solely determinative of the question of which court hierarchy (Scots, English or Northern Irish) is to have jurisdiction in a given case. "Something more, therefore, needs to be said on each of these topics".¹¹¹

Does all UK civil law apply offshore?

One problem with the Civil Jurisdiction (Offshore Activities) Order is that it fails to stipulate that all domestic civil law applies to the offshore regime, nor does it make clear what parts of the domestic law apply to the regime. Article 2 states that the domestic law of England and Wales, Northern Ireland, or Scotland as appropriate "shall apply for the determination of questions arising out of *relevant acts*." (emphasis added) occurring within the offshore area. Article 1 defines 'relevant act' as "an act or omission taking place on, under or above the offshore area" which arises out of activities concerned with the exploration or exploitation of offshore natural resources.

¹⁰⁸ The line between the English and Scottish areas is drawn along the 50°50' parallel : Civil Jurisdiction (Offshore Activities) Order 1987 (S.I. 1987 No. 2197), art. 1.

¹⁰⁹ S.I. 1987 No. 2197.

¹¹⁰ Daintith and Willoughby, *UK Oil and Gas Law* 1-504.

¹¹¹ *ibid.*

The extent that UK common law therefore applies is not clear. It has been suggested that it must be taken that given the reference to 'acts and omissions' at least the domestic law of delict (for Scots law) and tort (for English law) applies to the offshore area.¹¹² It is noteworthy that other areas of law (eg statutes relating to employment law) have been expressly extended to the offshore area by Parliament separate from the Civil Jurisdiction Order.¹¹³ On a narrow interpretation of the Civil Jurisdiction Order, therefore, it is arguable that aside from delict and tort and those other areas of law expressly extended to the offshore area, then the domestic law will not apply.

Under such a viewpoint, the law of property within the UK would not be extended to the offshore area. A broader, more holistic interpretation of the law relating 'acts and omissions' may be more appropriate, however. Property law and delict/tort are in practice intrinsically linked and the question of allocation rights in natural resources is obviously coloured by both areas of law. Determining questions relating to acts and omissions in the offshore environment may also entail reference to property law as well as principles of tort or delict. On this basis,

[t]he very concept of exploration and exploitation connotes activity, so that the apparent limitation of section 11(1) can in fact embrace ... issues such as questions of title, so long as they are related to exploration or exploitation.¹¹⁴

Capture and the Licensing regime

Even if it can be speculated that at least under English common law, an absolute dominium rule is applicable, which would facilitate a law of capture in relation to migratory resources such as hydrocarbons, in relation to offshore petroleum

¹¹² Daintith and Willoughby, *supra* n 110.

¹¹³ As statutes will generally be taken not to extend beyond the boundaries of the UK and its territorial waters.

¹¹⁴ Daintith and Willoughby, *supra* n 110 at 1-509.

development and production, the analysis is coloured by the legal framework and application of the UK licensing regime. Taylor and Tyne have suggested that

even if the law of capture did not apply as a matter of general law, it is possible that each licence could be interpreted as conferring upon the holders a right to drill within their licensed area and to extract any resulting petroleum. If this interpretation were upheld, the terms of the licences would therefore result in a rule of capture as between holders of neighbouring licences.¹¹⁵

The suggestion here is that the general common law position is effectively displaced by the licensing regime. The regime which is implemented is in fact some kind of prior appropriation regime — ie one in which rights are granted and protected by the State in respect of beneficial uses.^{115a} It may be further argued (this point is taken up below) that by implication of the way in which rights are granted under this regime, operation of a law of capture applies. This begs the question as to what exactly the nature of the rights granted under the licence to licensees are.

Rights under the licence

The precise nature of the rights bestowed upon licensees has been the subject of some academic debate and disagreement.¹¹⁶ It would seem useful to begin by identifying what rights the Crown has in offshore reserves as clearly no greater rights than vest in the Crown can be transferred to licensees. Under international law, by virtue of the Geneva Convention on the Continental Shelf, 1958,¹¹⁷ the Crown has 'sovereign rights for the purpose of exploring and exploiting natural resources' within the UK Continental Shelf.¹¹⁸ These rights, as the exclusive preserve of the Crown, may not be exercised by

¹¹⁵ Taylor and Tyne, *supra* n. 80 at p. 112.

^{115a} Such regimes are commonplace relative to water exploitation in US states — see chapter 5.

¹¹⁶ P. Cameron, *Property Rights and Sovereign Rights: The Case of the North Sea* (1983) at p 47.

¹¹⁷ Reprinted in I. Brownlie, *Basic Documents in International Law* 5th ed (2002) at pp 88-91.

¹¹⁸ Article 2(1).

any other entity without the Crown's consent.¹¹⁹ The provisions of this treaty are enshrined within domestic law by virtue of section 1(1) of the Continental Shelf Act 1964, which provides that 'any rights exercisable by the UK [under the terms of the Convention] outside territorial waters with the respect to the sea-bed and sub-soil and their natural resources' shall vest in Her Majesty'.

The key authorities in this area, Daintith and Hill, have argued that while these rights fall short of vesting full ownership of the natural resources in the Crown, they are nonetheless proprietary in nature (or 'real' in Scotland). In support of these contentions they point to authority to this effect in *Earl of Lonsdale v A-G*¹²⁰ where the court took the view (albeit *obiter*) that, as a result of section 1(1), 'statutory title' to hydrocarbons beneath the continental shelf vested in the Crown.¹²¹

This view has not been universally shared, however. Other commentators have argued that offshore petroleum deposits are no more than *res nullius* until reduced into possession and that the licensing regime does no more than set out a regulatory framework for their exploitation which the Crown can control.¹²² Daintith and Hill counter such assertions, however, by arguing convincingly that "[t]he wording of section 1(1) is not consistent with the granting of a regulatory power; the contractual form of the licences themselves argues against it; and so does the absence of any explicit provision, in the 1964 Act or elsewhere, forbidding unlicensed activities".¹²³ The idea that the

¹¹⁹ Article 2(2).

¹²⁰ [1982] 1 WLR 887, at pp. 945-947.

¹²¹ Daintith and Hill, *supra* n. 19 at p. 33.

¹²² Marriage, 'North Sea Financing in the United Kingdom' (1977) 5 *Int Bus Lawyer* 207 at p. 209; Bentham, 'The concept of a continental shelf and the financial problems of exploitation' in *Fifth Commonwealth law conference proceedings and papers* (1977) at p. 439.

¹²³ Daintith and Willoughby – *supra* n. 110 at p. 11.

Crown obtains proprietary rights to hydrocarbons offshore is bolstered by the fact that customary international law and practice would seem to lend support to this notion.¹²⁴

If one follows this contention it therefore ensues that section 1(1) of the 1964 Act affords the Crown "the [proprietary] right both to reduce [natural resources] into possession and to exclude any others from doing so."¹²⁵ Is such a proprietary or real right passed to licensees? In the UK, seaward petroleum licences confer upon the licensee the exclusive right to "search and bore for, and get, petroleum in the sea-bed and under the subsoil under the licence area."¹²⁶ This, it has been argued, is best construed as "conferring a licence (to engage in activities in the licensed area which would otherwise infringe the Crown's exclusive privilege of exploration and exploitation) which is exclusive and is coupled with a grant (of all petroleum which the licensee may get under the licence)."¹²⁷ This assertion is ambiguous, however; does this relate to petroleum beneath the block when drilling is commenced,^{127a} or all oil that can be brought to well-head, some of which may have migrated from an adjacent block? This is a central question and is discussed below.

Unlike other licences, however, which as a general rule fail to confer on the licence-holder any proprietary rights as against third parties,¹²⁸ it has been asserted that offshore petroleum licences "operate to pass a property right in the nature of a *profit a prendre*."¹²⁹ The best Scottish equivalent is probably rights bestowed by the creation of a servitude

¹²⁴ see *The North Sea Continental Shelf Cases* (1969) 1CJ Rep 3; For a discussion of the continental shelf regime see I. Brownlie, *Principles of Public International Law* 6th ed (2002) at chpt. 10.

¹²⁵ Daintith and Hill, *supra* n. 19 at p 33.

¹²⁶ Model Clause 2.

¹²⁷ Daintith and Hill, *supra* n. 19 at p 34.

^{127a} This is the DTP's view as noted above.

¹²⁸ See e.g. *Patel v Patel* [1983] Crt. App. Unbound Transcript 930; *King v David Allen and Sons, Billposting, Ltd.* [1916] 2 AC 54 at 59 and *Clow v Theatrical Properties Ltd and Westby & Co Ltd.* [1936] All ER 483 at 490. Although for a contrary view see *Errington v Errington and Woods* [1952] 1 KB 290.

¹²⁹ Daintith and Hill, *supra* n. 19 at p 34..

right to minerals.¹³⁰ Without giving a legal basis for this contention, Daintith and Hill suggest that the licence should be construed in such a proprietary fashion in view of the public policy rationale that "the massive resources which the licensee may be called upon to devote to the licence warrant the fullest possible protection of his rights."¹³¹ Regardless of such a public policy argument, however, the fact that the right to 'get' the petroleum is conferred on the licensees may in itself be indicative of a sufficient proprietary interest enabling the licence to be construed as akin to a *profit à prendre* or a servitude right to minerals in Scotland.

Is a rule of capture created under the licensing framework?

For the purposes of this question, it is important to note at this juncture that licensees do not therefore have property in the oil until it reaches the well-head. Clearly as the Crown does not have title to the oil *in situ* (at best a proprietary right to reduce the same into possession) then it follows that neither can the licensees. As noted above, under English common law, whilst not conferring on the holder a right of ownership to the subject matter *in situ*, possession of a right akin to a *profit à prendre* is sufficient, however, to sustain an action in tort on behalf of its owner against third parties. Similar arguments would apply in Scotland.¹³²

While this seems clear enough, the salient question to be addressed is whether such protection will extend to providing a licensee with a legal remedy if oil is captured by an adjacent licensee from beneath his block acting in a legitimate fashion and in accordance

¹³⁰ As opposed to the creation of a separate tenement reservation of minerals which bestow ownership of the minerals *in situ* – see W. Gordon *supra* n. 79 at paras 6-28 – 6-67.

¹³¹ Daintith and Hill, *supra* n. 19 at p 34.

¹³² *Bolton v Forest Pest Management Institute*, 1986 2: DLR (4th) 242 at pp 248-249; *Stephens v Snell* (1939) ALL ER 622; *Maroon v Clarke* (1995) AC 778. A Scottish analogy is *Mull Shellfish v Golden Sea Produce* 1992 SLT 703 in which the court held that a crown tenant of the sea-bed was able to sue in respect of damages by the defenders to free-floating mussel larvae which might be captured by their attaching themselves to ropes hung by the pursuers over the sea bed and developing into mussels.

with the license terms under one of the theoretical circumstances set out above in this chapter where unitisation cannot be compelled? Rosalyn Higgins is of the opinion that since the licence grants the right 'to search and bore for, and get, petroleum' in the seabed and sub-soil, "it must be held to imply all that is beneath the licence area at the moment of exploitation."¹³³ This means therefore that if hydrocarbons have migrated from an adjoining block by lawful drilling operations, they can be produced. The rationale underlying this is elaborated by Higgins as

even where title to petroleum *in situ* is vested in a licence owner, he has legal entitlement to percolating substances only to the extent that he can 'capture' them in production. I see no reason why this should not be equally attributable to property rights which are *profits à prendre*.¹³⁴

Daintith and Willoughby agree and argue that the terms of the licence would allow a licensee to appropriate oil from beneath the block of another licensee in the absence of any unitisation. While arguing that unlicensed drilling or unauthorised activities which renders one licensee's interest diminished could be restrained there would be no action available in respect of licensed activities which serve to appropriate oil from beneath the adjacent block :

[t]he reason is that the license, while proprietary in nature, conveys no property in any specific parcel or volume of petroleum such as that existing beneath the licensed area at the moment of the award. It rather authorises, in a defined area, activities of searching and boring for, and getting, whatever petroleum may be present there for the time being, and accordingly affords no protection against migration of petroleum provoked by the exercise of identical rights by the licensee of an adjoining area. Such protection can only be provided by the Secretary of State in pursuit of his limited powers to require a scheme of unitisation in appropriate circumstances".¹³⁵

¹³³ R. Higgins, *Ten Years of State Involvement In the Petroleum Industry* Energy Law Seminar Proceedings (1979) at R.1.6. An argument supported by others; see for example, Daintith and Willoughby, *UK Oil and Gas Law*, (R.26: April 1997), 5-344.

¹³⁴ Higgins, *supra* n. 103 at R. 1.6.

Comment

Whatever the position under Scots or English common law may be, it seems a convincing argument that once a licence is granted, a law of capture is in essence created by the licence terms – in that the specific property right transferred to the licensees is one which includes the right to exploit any hydrocarbons which are brought to the wellhead, which may include hydrocarbons from beneath an adjacent block. As has been noted, unitisation may not be compelled in all cases which leaves open the possible occurrence of the deleterious consequences of a law of capture. Such repercussions, from a policy perspective, require to be addressed. The analysis proceeds to this general issue in chapter 5.

It can be stated at this juncture, however, that the example of offshore hydrocarbon exploitation illustrates that although a state-controlled, licence-based regime may ensure that the most beneficial uses are made of scarce resources and hence may be more favourable than private, absolute dominium approaches in this respect, difficulties may nonetheless continue to exist in respect of the application of such a regime to migratory things. Depending on how the licence granted is crafted then it may be that it encompasses the right to abstract the resource from beneath the land of another – ie the law of capture continues to exist in this context. As noted above in respect of water and hydrocarbon exploitation, the impact of a law of capture may be somewhat inequitable in that, for example, it may render obsolete the often heavy financial investment in exploitation of such resources by abstractors powerless at law to stop the resource being drained from beneath their feet. Having said that, crafting a licensed right in such a way as to merely bestow authority upon the abstractor to exploit the resource falling upon or below his own tract of land may be fraught with difficulties from a practical perspective.

¹³⁵ Daintith and Willoughby *supra* n. 133 at 1-347.

This issue is given more consideration in the next chapter but it may suffice here to say that determination of the extent of the resource *in situ* beneath a particular tract of land may be a vexed question. Hence such a rule limiting the right to a resource to that falling beneath or upon a particular piece of land may make exploitation impossible or at least subject to high technological costs if exploitation is to proceed on that basis or perhaps significant transactional costs in reaching some form of agreement with the other party (or parties) affected by any exploitation.

Summary of development of law relating to migratory things

Prior to moving on to a more detailed analysis of some of the policy themes underpinning different approaches to issues of allocation of property and rights of use in migratory things, it may first be prudent to pull together the development of the common law across different migratory things under both Scots and English law. From the preceding chapters it has become apparent that no single approach can be taken to the allocation of rights in migratory things across both jurisdictions. What can be said is that despite the fact that at times it seems that private ownership *in situ* is recognised (for example, on some authority in respect of gas and underground percolating water) the law *de facto* leaves the allocation of ownership of such things until after they have been reduced into possession. This result in effect renders the notion of ownership *in situ* largely meaningless, although the qualified proprietary rights that are recognised in some cases may bestow upon the landowner certain legal protection from the acts of others – eg against pollution of underground water supplies, or spoiling tactics in respect of hunting for game. In most cases, an absolute dominium approach has been taken which has meant that under the developing common law, landowners have had a largely unfettered right to exploit the resource concerned. This is so, even where their actions draw the migratory thing from the land of another – what might be termed ‘physical

capture'. In other cases – where the migratory thing is owned *in situ* – such appropriation also entails 'legal capture', which entails the transfer of ownership from one party to another. This passing of ownership without the consent of the owner, is save in the case of a State compulsory acquisition, a somewhat novel concept. The technicalities of English law, and in particular its paucity of remedies based upon ownership, may go some way to rationale this situation from a doctrinal basis. As noted above, a rule of legal capture is more difficult to rationalise under Scots law.

The notable exception to the absolute dominium rule is that in respect of water in defined channels, a riparian regime operates under both Scots and English common law which places limitations on the absolute dominium approach in the name of protecting the correlative rights of other riparian users. Additionally, in certain contexts the absolute right to exploit a resource may be curtailed. In Scotland, for example, the absolute right to abstract underground water is prohibited in the limited circumstances in which the motive in so doing is spite. Moreover, in both jurisdictions where the thing removed causes an erosion of support (although not underground water in England and possibly Scotland) an action may proceed on that basis. The US case-law relating to hydrocarbons has for largely practical reasons affirmed the general absolute dominium approach and operation of a law of capture. Moreover such determinations were rooted in a formalist theory and simply applied existing precedent in relation to other similar migratory things. Misunderstanding and misconception abound in these decisions.

Aside from the exceptions discussed above (and discounting statutory exceptions), the absolute dominium approach reigns supreme in respect of migratory things. As we have noted from the discussion in the preceding chapters, the doctrine is largely one rooted in the encouragement of industrial development. Landowners would hence be able to

exploit natural resources upon their land in a largely unfettered way for economic purposes which would in turn in general serve the interests of society. Moreover, the hidden and ambient nature of many of these migratory things meant that it would be unfair and impractical to hold landowners liable if their legitimate exploitation activities impacted adversely upon the rights of others. Additionally, the doctrine is subject to minimal transactional costs as disputes arising from abstraction are unlikely to be entertained by courts and costly determinations of correlative rights – such as what might be an equitable use – are not required. While such benefits may be present, the absolute dominium regime has been shown in many contexts to cause intractable difficulties. Such concerns have in many areas led to the abandonment of absolute rights of private exploitation in favour of curtailments on use in the name of public utility.

PART II: CHAPTER 5

POLICY CONSIDERATIONS UNDERPINNING MIGRATORY THINGS

Introduction

This chapter is concerned with the policy rationale that underpins the law relating to migratory things and examines the need for a re-appraisal of the law in the light of new policy aims. As already alluded to in the previous chapters, the current law has at times been crafted against a vacuum of directly applicable legal precedent. In such cases, courts have simply drawn analogies with other established rules that bore comparison. In some instances, such comparisons have been largely specious. At other times the law has developed as a result of specific policy goals that were sought to be advanced. All this has taken place in respect of substances that are unique in the sense that they often fall outwith the control of proprietors in ways not shared with other forms of property. Sometimes, the nature and extent of the substances concerned occurring on land are themselves unknown and 'occult' and this lack of technical knowledge has been an influencing factor in shaping the law. The result is, as noted in previous chapters, a patchwork of inconsistent, uncertain and at times illogical and inefficient rules. This chapter begins by revisiting the policy choices that underpin the law relating to migratory things.

Policy choices inherent in property and rights of use in migratory things

As will be discussed later in this thesis, policy markers are often less explicit in the development of law by courts than when determined by regulators. It can be seen from the preceding chapters, however, that policy choices have informed the development of the law relative to migratory things in different ways. As noted from part I of the thesis, migratory things are in general (although not always) not subject to full ownership rights while *in situ*. The policy underpinning this approach is one which reflects the ambient

nature of the resource and proprietors' lack of control over such things until reduced into possession. In addition, at times the lack of full ownership rights *in situ* is a reflection of the wider social utility of the resource and the fact that it is thus too precious to be the subject of private rights of ownership. As noted above, however, operation of a law of capture (whether merely physical or both physical and legal) in general renders the notion of ownership *in situ* largely redundant – ie remedies will not lie for the appropriation of the thing from the land of another by the commission of legitimate works upon one's own land. The development of the law of capture was steeped primarily in the ground of necessity. This rule of first possession reflected the ambient nature of migratory things and the fact that the extent of their presence *in situ* and the impacts of different uses could not always be evaluated, at least without heavy transactional costs, prior to any proposed uses. Traditional approaches in this regard therefore reflect a notion of efficiency – ie in the sense that a legal regime ought not to stand in the way of valuable industrial exploitation and rather encourages the same by being characterised by certainty of rights of use.

The law of capture renders the extent that a private landowner is vested by the law with rights to exploit the resource concerned as the key question in respect of migratory things. The dominant model discussed above in respect of migratory things is one of absolute dominium (or absolute right to use). Akin to that relative to the law of capture, the underlying policy rationale behind the absolute dominium approach is founded upon the encouragement of legitimate beneficial uses in the name of societal advancement and also efficiency, in the sense of certainty of right of use and avoidance of transactional costs in respect of costly court disputes that might be hard to determine equitably.

Subtle variations in the absolute dominium rule were unearthed in respect of wild animals which reflect different policy ideals. In the context of 'hot pursuit' situations, by comparing Scottish and English approaches thereto, we can see the two policy markers of encouraging beneficial uses and efficiency being pitted against one another. Under the Scottish rules, where one is in hot pursuit of a wild animal or where it has been mortally wounded, the law would grant the pursuer a property right in the thing at that time in the name of recognising the effort and perhaps economic investment that had been expended in the pursuit. By contrast, under English approaches, reflecting the factual uncertainties that might surround the determination of when parties were in 'hot' pursuit or when an animal was mortally wounded, in an efficiency-promoting measure to cut down on any resulting transactional costs, property would not pass until the animal is captured or killed. As we will learn later in this thesis, there may commonly be a balance to be struck between these competing policy aims in respect of migratory things.

The notion of beneficial uses promoted by the absolute dominium regime may also encompass recognition of the fact that certain uses which might be beneficial in some ways are in fact detrimental to other current or projected uses of value. In respect of water in defined channels, we reviewed above the operation of systems of riparian rights which sought to recognise the correlative rights of adjacent landowners in water running through their land. While perhaps on some occasions quelling beneficial, industrial uses of riparians, these limitations upon absolute rights of exploitation can be seen as a reflection of the protection of the legitimate uses of others in society.

While riparian rights regimes reflect the correlative rights of other landowners, there may be wider constituencies that may fall under the protectorial banner of 'beneficial uses'. While the development of the common law relative to hydrocarbon exploitation

reflected the traditional policies of efficiency and a narrow view of facilitating beneficial uses by adopting an absolute dominium approach and a law of capture, unitisation developments like those discussed above in the UK occurred in the name of providing equity in respect of the correlative rights of competing industrial users and conservation to help preserve a finite resource for the benefit of all in society. Hence, in this sense the policy of facilitating 'beneficial uses' has a wider, societal connotation. Equally, it should be remembered that efficient rules which encourage legitimate exploitation do reflect the wider notion that such industrial development benefits society in general.

A further policy, which in broad terms might be labelled one of 'legality' can be identified from US hydrocarbon jurisprudence. Although US courts reiterated the general rationale behind the absolute dominium use rule and operation of a law of capture in terms of clarity of right and facilitating legitimate uses, the approach taken in such matters was also rooted in precedent relative to other migratory things. The courts here can be seen to be striving to act in accordance with existing legal rights that landowners had previously been held to have vested in them in respect of other, comparable ambient resources. While this formalistic approach to legal reasoning is not quite synonymous with the issue of the state's acting in accordance with existing private property rights in a resource in respect of the imposition of a new state-controlled exploitation regime that is alluded to later in this thesis, nonetheless, this recognition of traditional approaches in migratory things reflects a general policy of recognising existing legal rights.

The above policy rationales can perhaps be grouped into three broad headings: legality; efficiency and the encouragement and protection of beneficial uses. These policy markers will be further developed and explored later in this thesis in relation to an

analysis of the current reforms which are currently taking place in respect of water exploitation in Scotland. It is fair to say that the dominant absolute right to exploit model might be viewed as efficient and moreover encourage beneficial uses in certain ways but the approach is myopic in that it may produce woefully deficient results with regard to other aspects of these policy markers. The discussion now turns to this issue.

The Absolute Dominium Rule Re-Visited

The chapter now proceeds to an analysis some of the general problems that may emanate from the dominant 'absolute dominium'¹ approach to migratory things that developed under UK common law and parties' reliance upon self-help remedies in this context. In this sense, the wholly negative experience of the US oil industry in the late 19th century may be particularly instructive. In light of these general deficiencies, the chapter then proceeds to an analysis of some of the more specific problems that may emanate from a largely unfettered right for landowners to abstract water. This is followed by an examination of some of the alternative approaches to percolating groundwater found in other jurisdictions (particularly in the USA²) and the rationale behind adoption of these new rules and rejection of the traditional absolute dominium approach.

Some general problems with absolute dominium approaches

A diminished property right

The absolute dominium approach³ is often expressed as an unfettered property right - a manifestation of the *a coelo usque ad centrum* doctrine in relation to land ownership.⁴ The

¹ Or unfettered right to exploit approach.

² The USA was chosen because of the multifarious approaches manifest in different states and the abundance of materials available.

³ This term shall be used to denote this approach throughout but see the note below.

absolute, largely unfettered right to abstract underground water under English and Scottish common law, or to abstract hydrocarbons under early American jurisprudence can clearly not be viewed as a full property right in the traditional sense, however.⁵ Chapter 3 touched upon the limitations inherent in property rights in things subject to a law of capture in that where a substance is at law held to be owned *in situ* or subject to a property right to exploit the same, this in itself would generally offer no protection against the legitimate actions of others carried out on their own lands which has the effect of drawing that substance away. This is clearly a phenomenon anathema to recognised fundamental characteristics of property rights. It is interesting to note that the opposite also applies in respect of this absolute right to appropriate -- ie. no remedy is generally available to other parties adversely affected by exploitation of this absolute right to underground water. This is clearly inconsistent with the general notion that property is conceived as both a bundle of rights in a thing and also *responsibilities* to exploit the thing in such a way as to not unreasonably cause harm to others.⁶ Even if one perceives property as a unitary right, exploitation of such a right is of course normally subject to the qualification of reasonableness in respect of rights of others. Again this approach is not reflected in the absolute right to exploit underground water.⁷

This notion may be taken further in that that things subject to a law of capture (whether the law bestows them with the label of ownership in place or not) are arguably wholly deficient in relation to commonly recognised central attributes of property rights. In relation to things subject to a law of capture, as Votteler has stated

⁴ Discussed in chapter 4.

⁵ Moreover, despite the common use of the terms 'absolute dominium' or 'absolute ownership' respect of groundwater, as was seen in chapter 3 the better view would seem to be that manifest in the early case-law was an absolute right to abstract groundwater which gave no ground of action in tort rather than ownership in the water itself.

⁶ See for example, J. Penner *The Idea of Property in Law* (1996); J. Penner 'The Bundle of Rights Picture of Property' 43 *UCLA L. Rev* 711 (1996).

⁷ Although of course riparian rights to water in defined channels do countenance the correlative rights of others.

the fundamental characteristics of property rights are absent. In neoclassical economic theory a 'property right' refers to a bundle of entitlements defining the owner's rights, privileges and limitations for use of a resource... An efficient property rights system has the following characteristics : 1) universality – all resources are privately owned, and all entitlements completely specified; 2) exclusivity – all benefits and costs accrued as a result of owning and using the resources should accrue to the owner, and only to the owner, either directly or indirectly by sale to others; 3) transferability – all property rights should be transferable from one owner to another in a voluntary exchange; 4) enforceability – property rights should be secure from involuntary seizure or encroachment by others.⁸

Using the example of ground-water in the Texas Edwards Aquifer, it may be noted that

none of these [above] characteristics have been present under a law of capture. There was no universality because entitlements could not be specified under a system where a pumper's use of water was vulnerable to extraction by a neighbor. Exclusivity did not exist. During periods when pumping was not needed, well owners did not have the option of leasing or selling the water to which they had access. Similarly, transferability did not exist. Even if a well owner was paid not to pump water, nothing prevented another landowner drilling a new well into the Aquifer to begin pumping. Thus a transfer would be rendered meaningless because the purchaser was not protected from excessive pumping by other users. Finally there could be no enforceability of a property right for all of the reasons stated above. There was no effective way to prevent one pumper from encroaching on another individual's property right.⁹

Generally speaking where property rights are well defined in respect of the characteristics set out above, an owner has a strong incentive to use that resource wisely because a drop in the value of that resource is tantamount to a financial loss. This is not the case, however, with resources that are subject to a law of capture. The lack of knowledge today as to what the state of a shared resource may be tomorrow, encourages inefficient behaviour.¹⁰ By this it is meant that even though the most efficient way to exploit a resource may be to sit tight for the time being with a view to exploitation at a later date,

⁸ T. Votteler 'The little fish that roared : The Endangered Species Act, state groundwater law, and private property rights collide over Texas Edwards aquifer' (1998) 28 *ENTL (Environmental Law)* 845 at p 875.

⁹ T. Votteler, *supra* n. 8 at p 875.

¹⁰ It is worth noting that the extent to which the right to capture water is in fact a property right is an important question when it comes to discussing whether the imposition of a state controlled licensing regime for abstraction amounts to an appropriation of property and hence if imposed without compensation may be contrary to the European Convention of Human Rights (ECHR), protocol one, article one. This point (as well as other human rights concerns) is discussed extensively in chapter 7.

use of the resource may be undertaken prior to this because of the fear that delaying exploitation will let in another user who's actions may entirely or significantly deplete the resource. This idea is indicative of the well-known concept of the 'tragedy of the commons', which this thesis turns to next.

The tragedy of the commons

In Hardin's classic article 'The tragedy of the commons' he laid out the choices facing a rational herdsman contemplating the grazing of additional stock on a single, commonly held pasture.¹¹ Considering the range of options available to him, a herdsman may weigh up the potential benefits of adding one more animal to his herd. Clearly all the profits emanating from the grazing of the additional animal will accrue to the herdsman while the detriment to the pasture will be shared amongst all the owners of the pasture. On a rational basis therefore the herdsman will add that animal and any number of others to his herd in an effort to maximise his profits. Other herdsman are likely to respond likewise in an effort to restore parity with the first herdsman. The resulting 'tragedy' is the rapid decimation of the pasture and the consequent loss of profit for all.^{11a}

A self-fulfilling prophecy is in evidence here. When an absolute dominium rule is in place, parties may seek to exploit shared resources before other parties make use of the same and deplete the resource which may in itself lead to over exploitation, wastage and other inefficiencies relative to the particular substance concerned. Having said that there

¹¹ G. Hardin, 'The tragedy of the commons' (1968) 162 *Science* 1243.

^{11a} Similarly, under a simple allocation rule rational actors have no incentive to invest in maintaining or improving the asset *in situ* as the fruits of such investment will be shared by all who may access the resource whether they have paid for such investment or not – see T. Eggertsson, 'Open access versus common property' in T.L. Anderson & E.S. McChesney (eds.), *Property Rights Cooperation, Conflicts and Law* (2003) at p 75.

may be some circumstances where this sort of rule is appropriate. In some of the early US cases in relation to oil and gas, amidst a relative legal vacuum, the courts made practical decisions that were viewed as efficient at that time.¹² Tarlock has suggested (in fact in relation to shared water resources, but the underlying principle is the same) that

[a] simple allocation rule is appropriate when the costs of allocating a common resource are high, supplies are abundant, and all competing users are making a similar use of the resource. Capture becomes inefficient [however] when the costs of present consumption become high. Ideally, a pumper should base the decision to pump on a comparison of the present versus future benefits of extraction. A rule of capture is inefficient when it is likely that future uses be more highly valued because it penalizes a pumper who defers consumption [and finds the resource no longer available to him].¹³

Oil boom and bust

Hardin's model is no mere theoretical construct. The 'tragedy' inherent in an unfettered right of private exploitation in shared resources was all too apparent in the oil boom in the late 19th century in the USA. As seen in chapter 4, operation of a law of capture left parties to joint reservoirs who found their 'black gold' drained away from beneath their feet with the only friend of a self-help remedy of making haste and doing likewise. In the USA, the deleterious practical ramifications of the operation of this 'law of piracy' and resultant competitive drilling was stark. Against a backdrop of 'use it or lose it', oil exploration in the US became "a kind of wild race where there was no compunction in drilling on a reservoir straddling the boundary of a lease and producing from it as much, as fast, as possible."¹⁴ Of this competitive drilling, Hardwicke asserted:

the outstanding evils commonly in mind are... production in excess of requirement, unnecessary storage, untimely drilling of wells, the drilling of many unnecessary wells, wasteful and disorderly production practices, instability of markets and feast and famine with respect to reserves, and particularly the unsound and burdensome drill and produce as you please method to protect property lines against drainage.¹⁵

¹² As seen in chapter 4.

¹³ D. Tarlock, *Law of Water Rights and Resources* (2001) at § 4:6.

¹⁴ Blinn *et al.*, *International Petroleum Exploration and Exploitation Agreements*, (1986) at p 210.

¹⁵ Hardwicke, 'The Rule of Capture and its Implications as Applied to Oil and Gas' (1935) 13 *Texas Law Review* 391.

The cost of the unnecessary production wells was passed on to the consumer in terms of higher prices.¹⁶ However, the increased production levels led to a flooding of the market which in fact caused prices to plummet and hence greatly reduced investors' profits.¹⁷ Excess production produced storage problems and whilst oil was stored in a variety of makeshift receptacles such as "gulches, creeks and earthen reservoirs until demand increased or until storage could be built"¹⁸ resulting in evaporation and seepage, excess natural gas was simply evaporated into the air. The extent of this wastage cannot be overestimated. In the infamous Glen Pool oil field, for example, it was estimated that some 50,000,000,000 cubic feet of natural gas was wasted by 1912.¹⁹

There are furthermore other serious problems, aside from overproduction, which may result from competitive drilling for hydrocarbons. As Murray and Cross have contended

individual non-cooperative oil production will not only increase the costs of production, but will also dissipate the benefits achievable from a reservoir due to certain geological characteristics of the oil fields. The most efficient production of oil from a field requires a reservoir specific rate of production and careful well location. This is generally called the 'maximum efficient rate' or 'MER' of production. The production rate of an oil field must be controlled to maintain the pressure necessary to force the oil out. The location of wells is also crucial because if wells are drilled into the portion of the reservoir containing gas or water, these wells permit escape of the very substances that produce the pressure necessary to recover the oil. Engineering studies can now approximate the most efficient rate of production and well location for a particular reservoir.²⁰

Such technological knowledge concerning optimum well spacing and MER of production clearly lends itself to collaboration between competing users. The compulsory unitisation provisions relative to UK offshore hydrocarbon exploitation discussed in chapter 4 are clearly underpinned by such concerns.

¹⁶ J. Clark, *The Oil Century* 97-99 (1958).

¹⁷ *ibid.*

¹⁸ R. Chamberlain, 'A new dimension in the ratable taking of natural gas in Oklahoma: enrolled house bill' 1221 Fall (1984) *Tulsa Law Journal*.

¹⁹ J. Clark, *supra* n. 16 at p 149.

²⁰ P. Murray and F. Cross, 'The case for a Texas compulsory unitization statute' 23 *St Mary's L.J.* 1099, pp 1108, 1109. (intercal citations omitted).

The Coase Theorem

The oil boom and bust scenario illustrates that an absolute dominium approach may result in inefficiencies and ultimately be of no benefit to either the competing parties themselves or society as a whole.^{20a} As Mattei notes, however, most legal rules in fact are of a default nature.²¹ "They constitute a programme of allocation of resources from which parties are in principle able to negotiate alternative, more efficient solutions".²² What in economic theory has been termed the 'Coase Theorem' stipulates that whenever parties are left free to negotiate alternative rules – and the transactional costs of so doing are not prohibitive – parties will attempt to negotiate more efficient agreements which 'contract out' of the general law.²³

So, for example, in a theoretical land subsidence case, suppose party A's benefits from a continuous pumping operation were greater than the harm inflicted on B by the subsidence emanating from such an operation. If B was empowered at law to prohibit A's actions, A and B could negotiate and come to an agreement whereby A would make a payment to B equal to the damage sustained. A still would realise a net gain by continuing operations because the benefits would outweigh the costs incurred in the payment to B. If the benefits did not outweigh these costs, then A would simply not proceed with the pumping operations. Suppose, instead, that B had no right at law to prohibit the actions of A. Where A's benefits from continuous operation were less than the harm inflicted on B, it would be in B's interest to induce A to cease operations by

^{20a} This point is borne out further in the context of water use later in this chapter.

²¹ Those that he terms 'yielding rules' or *ius dispositivum* to be contrasted with rules which cannot be avoided – 'coercive rules' or *ius cogens* – whereunder some greater public or third party interest must be protected – U. Mattei, *Basic Principles of Property Law* (2000) at p 55.

²² *ibid* at p 54.

²³ See R. Coase, 'The Problem of Social Costs' 3 *J.L. & Econ* 1 (1960); R. Coase, 'The Cost of Coase' 11 *J. Legal Stud.* 1 (1982). Assuming that parties are acting rationally. This assumption is not always borne out in practice and is further discussed in chapter 7 in relation to water markets.

making a payment to A. The payment, equal to the benefits that A could have generated through continued operation, would compensate A for the lost benefits. Meanwhile, B would be realising a net gain in benefits as the costs to induce A to cease operations would be outweighed by the benefits derived from not having to suffer the harm. If B's benefits in avoiding the subsidence did not outweigh the net costs to A in ceasing operations then on a rational basis no agreement would be forged.

In the light of this, should it therefore be a concern whether the current law in relation to migratory things may result in the inefficient exploitation of these scarce resources? Will parties not seek out their own more efficient agreements which will circumvent the deleterious consequences of the law? The key point is that transactional costs and the risk of non-compliance by the other parties to any agreement may dictate otherwise. As will be seen, a party may (at least initially) stand to gain more personally by breaching an agreement or failing to agree to such arrangements until other parties begin to do likewise. Aside from the above difficulties, it may be problematic to estimate the costs or benefits that may accrue to each party from any particular course of action. In relation to the hypothetical subsidence case above, establishing a party's costs resulting from the other party's proposed activities (which moreover may not be certain to cause subsidence at all) and establishing the correlative profits that may emanate from the exploitation that might cause the subsidence may not be easy to determine with any certainty. Additionally, such determinations may themselves entail expensive technological processes and hence may add to transaction costs.²⁴

²⁴ In relation to percolating groundwater, for example, Todd states "[k]nowledge about groundwater has improved in recent years, but it remains costly. In fact, relative to the immediately apparent, somewhat small benefits of coordinating well spacing, knowledge and other transaction costs involved in coordinating may seem very high. Transaction costs may be so high as to foreclose any bargaining". D. Todd, 'Common Resources, Private Rights and Liabilities: A Case Study on Texas Groundwater Law' (1992) 32 *Nat Resources J* 233 at p 240.

Game theory

By utilising a game theory model Murray and Cross illustrate that, in the context of hydrocarbons exploitation, while three parties to a joint reservoir can mutually gain from cooperation and contracting out of the general law, one party might be tempted to increase his gain through non-cooperation to any agreement although ultimately such non-cooperation may result in all parties (and society in general) dramatically reducing their cost-benefit ratio.²⁵ The prisoner's dilemma inherent in their model can be summarised as follows : if we assume that the total recoverable oil from a reservoir is 3 B and the total costs are 3 C, then assuming that the oil is readily accessible and hence the value of the oil will outweigh the costs of production, if the three parties cooperate to produce from the well the same amount of oil, each party's profit can be set out as follows :

$$(1) B - C$$

$$(2) B - C$$

$$(3) B - C$$

If party one decides that he can maximise his profits by ceasing to cooperate and doubling his efforts, then the following breakdown of profits is realised :

$$(1) 1.5 B - 2 C^{26}$$

$$(2) .75 B - C$$

$$(3) .75 B - C$$

If the 2nd party decides to do likewise, the result would be :

²⁵ Murray and Cross, *supra* n. 20 at pp 1105 - 1110.

²⁶ Doubling the production will not double oil recovered. If the profit made on the oil is sufficient however, this would not deter him.

$$(1) 1.2 B - 2 C$$

$$(2) 1.2 B - 2 C$$

$$(3) .6 B - C$$

If the third party decides to cease 'cooperation', the result becomes

$$(1) B - 2 C$$

$$(2) B - 2 C$$

$$(3) B - 2 C$$

The original allocation of recovery returns to the original situation where parties were cooperating, but the key difference lies in the fact that each party's costs have doubled. An additional $3 C$ has been expended by society in costs.

Furthermore, if the fact alluded to above that competitive drilling may reduce the amount of oil which can be recovered from the reservoir (as drilling operations deviate from the maximum efficient recovery) is taken into account then (assuming that doubling production results in a fifty percent reduction in recoverable petroleum) the final result is thus :

$$(1).5B - 2 C$$

$$(2) .5 B - 2 C$$

$$(3) .5 B - 2 C$$

Unitisation responses

In relation to oil and gas development in the USA, the voicing of such concerns paved the way for calls for compulsory unitisation of joint reservoirs and against such a backdrop remedial action on the part of both industry and government was deemed necessary to avoid these undesirable consequences. Over time, such action took place in the guise of conservation rules and practices within the US oil industry,²⁷ and also through both US state and federal legislation governing well-spacing and compelling unitisation of joint reservoir operations.²⁸ All US states, with the notable exception of Texas, have now adopted legislative measures compelling compulsory unitisation of joint reservoirs.²⁹ This is a typical, neo-classical economic approach to solving the problems of over-exploitation of shared resources through either the vesting of the property in the state or at least curtailing unfettered private rights to exploit such resources and re-definition of rights to private individuals by government institutions.³⁰ The extent that such an approach ought to be imposed within Scotland in relation to water resources is discussed in chapters 6 and 7.

As noted in chapter 4, in relation to offshore hydrocarbon exploitation in the UK, the law of capture that is arguably inherent in the licensing regime is similarly circumvented by the compulsory unitisation powers of the Secretary of State which may be invoked to avoid the deleterious consequences of competitive drilling in circumstances where an oil field straddles more than one block. As the previous analysis in chapter 4 suggested, however, on a literal interpretation of the model clauses, the Secretary of State may be unable to impose a scheme where only one party is willing or unable to develop the joint

²⁷ See Murphy, (ed). *Conservation in Oil and Gas: A Local History, 1948* (1972; reprint).

²⁸ For examples of the legislative regulatory measures, approved by the Supreme Court, see *Ohio Oil Co. v Indiana*, 177 US 190, 44 L. Ed. 729 (1900). See also the Model Act on Conservation 1949 promulgated by the Interstate Oil Compact Commission.

²⁹ It is interesting that such a move towards unitisation was not viewed as a federal matter despite the public interest in maximising recovery. Presumably this was due to the states' jurisdiction over land and the lack of public ownership of hydrocarbons.

³⁰ G.A. Tobin *et al.* 'Water Resources' in *Geography in America* Gaile and Wilmot eds (1989) at p 127.

field. As there is no competitive drilling in such circumstances, the SS's powers of unitisation could arguably not be invoked. Of course the fact that there is no competitive drilling in such a scenario means that many of the deleterious consequences of the absolute dominium regime – such as inefficient exploitation of the resource and over-production – would be avoided. Nonetheless, such a scenario is clearly unpalatable in that it potentially renders parties who have invested heavily in a project with no recourse at law when the natural resource is exploited by an adjacent licensee. The lack of guarantee that one's financial stake will be protected at law is stark. For the policy reason of encouraging investment and safeguarding the interests of investors it is arguable that such a loophole should be closed.^{36a} A simple redrafting of the appropriate Model Clause 22 would restore the position to that which legislators obviously intended.

This chapter now proceeds to the issue of comparative approaches to migratory things which are manifest in other jurisdictions. The focus shifts to water law, as the study will later involve an examination of the current reform of Scottish water law. The material in this following section will assist in informing the analysis pertinent to that debate. This chapter now reviews different approaches manifest in respect of water resources in the USA and begins with some specific problems that the absolute dominium approach might hold for water exploitation.

Water exploitation

The absolute dominium rule revisited

In chapter 3 it was noted that the traditional rule that applies at common law in respect of percolating groundwater in the UK is the absolute dominium rule under which a

^{36a} Although it is arguable that as investment decisions could be made in the knowledge of such a risk then there is no need for the law to offer protection against it.

landowner has an unfettered right to make use of such water as may be present below his land. At the extreme end of the traditional rule is that espoused in the English case of *Bradford v Pickles*³¹ where a party was able to extract water from beneath another's land even if done for malicious reasons. In chapter 3 it was noted that this view stemmed largely from the fact that English common law does not recognise any 'abuse of rights' doctrine found in many civil law systems, nor the *aemulatio vicini* doctrine (recognised in Scotland) which would prohibit purely malicious pumping. Despite continued acceptance of this approach in England, the rule was arguably never fully accepted in US states and it is widely assumed today that no US court would allow purely malicious pumping. As Tarlock has simply stated, "[the rule] is inefficient and unfair".³²

It is interesting to note that there is some US authority suggesting that the absolute right to use underground percolating water should not extend to sanctioning acts borne purely of malice which in fact pre-dates *Bradford* and indeed *Acton v Blundel*.³³ In the Massachusetts Supreme Court case of *Greenleaf v Francis*³⁴ the defendant drilled a well on his own land but also close to his neighbour's land which had the effect of draining away his neighbour's water supply. The court referred to the *a coelo usque ad centrum* doctrine and held that as the owner had dominium in the soil, this included the underground water. The court (which was not troubled by consideration of whether an abuse of rights doctrine was apt), viewed, however, that "[t]hese rights should not be exercised for mere malice".³⁵ Not all US courts took this line, however, and at least some decisions affirmed the *Bradford* view and rejected the malice qualification.³⁶ In common with the

³¹ [1895] AC 587 F.L.

³² D. Tarlock, *supra* n. 13 at S 4: 6.

³³ (1843) 12 M & W 324. The earliest reported English percolating groundwater abstraction case.

³⁴ 18. Pick. 117; 35 Mass. 117 (1836).

³⁵ *ibid* at 121-123. While such a rule seems equitable, it will be noted below that a mere malice exception does not go far enough in alleviating some of the negative repercussions of the absolute dominium rule.

³⁶ Including *Chatfield v Wilson* 28 Vt 49 (1855); *Huber v Merkel* 94 N.W. 354 (Wis. 1903).

rationale set out in *Bradford* the reasoning behind this rejection stemmed from the principle that “an act legal in itself, violating no right, cannot be made actionable on the ground of the motive which induced it”.³⁷ In short, such courts rejected operation of an abuse of rights doctrine under the common law as internally inconsistent. While this may be seen as a negative development, this re-assertion of the harshest aspect of the absolute dominium doctrine provided a shot in the arm for the development of new, more equitable approaches to the allocation of rights in percolating water encompassing restrictions on private exploitation which went far beyond the mere prohibition of acts taken in malice.³⁸

Some US states ultimately rejected the absolute dominium rule in its entirety and adopted alternative approaches designed to circumvent the harsher aspects of the rule: including limiting uses to those deemed ‘reasonable’ (known as the ‘reasonable use’ or simply, ‘American’ rule) or adopting a correlative rights regime for groundwater. Furthermore other states have developed regimes based upon protection of the right of prior appropriation of the resource for beneficial uses. Before these various alternative approaches are examined it may first be worth analysing some of the general reasons why the traditional absolute dominium rule may be rejected in relation to underground percolating water.³⁹

Reasons to reject the absolute ownership rule

Refusal to treat surface and sub-surface water the same

It is well established that percolating groundwater and surface water are in hydrological terms inextricably linked – for example, water may diffuse (and hence becoming

³⁷ *Chatfield v Wilson* 28 Vt 49 (1855) at 55.

³⁸ M Taggart, *Private Property and Abuse of Rights in Victorian England* (2002) at p.156.

³⁹ A number of states still recognise the traditional English rule in respect of groundwater: including Texas, and Connecticut.

percolating) from an underground channel or percolating water may flow into or become part of a defined stream.⁴⁰ It has been argued therefore that “[t]o anyone at all familiar with elementary hydrology principles it must seem astounding that the law should divide water into surface water and ground water and treat each independently”.⁴¹ The approach inherent in the UK (and elsewhere), that compartmentalises water and sets out different legal rules for water lying in different states in essence means that one party’s abstraction of the same water but at different stages in its hydrological cycle may incur different legal consequences. Furthermore, despite the fact that there is a general legal presumption in the UK that all underground water is in fact percolating (and not moving in a defined underground stream) even in today’s technologically advanced society, from a hydrological point of view it may still in some instances be impossible to determine whether or not water at any given point of abstraction is in fact percolating or falling within a defined sub-surface channel.

It has also been recognised that given the cause and effect relationship between percolating water and water in defined channels, to ensure an efficient and sustainable approach to water allocation and use, governance regimes need to approach water resources with consistency across the board.⁴² There is little to be gained, for example, in concentrating on conservation in respect of water in surface channels and protecting correlative rights therein when no efforts are made to tackle excess abstraction of ground-waters which may themselves feed surface streams and diminish surface water flows. In the context of Scotland, for example, clearly a regime that countenances riparian rights and hence limitations on riparian owners’ rights of use in relation to water in defined channels on the one hand but recognises an unfettered absolute dominium

⁴⁰ The relationship between surface water and groundwater flows is classically set out in Darcy’s Law – see the entry ‘Henri-Philibert-Gaspard Darcy’ in *Encyclopaedia Britannica*, III *Micropaedia* 377 (1974).

⁴¹ J.L. Sax, *Water Law: Cases and Commentaries* (1965) at p 238.

⁴² See generally RA Dowling, *Groundwater: our hidden asset* (1998).

approach in relation to ground water on the other, fails to approach water governance in such 'joined-up' terms.⁴³

Lack of knowledge of underground water is no longer present today

As discussed in chapter 3, a key part of the rationale behind the absolute dominium rule and a denial of any operation of riparian rights in relation to underground percolating water related to the lack of scientific knowledge in such water deposits. In a damning critique of the Texas absolute dominium rule (based on English common law), Shadwick asserted that

[w]hile lack of scientific knowledge may justify... the 1904 Texas Supreme Court decision in *East*,⁴⁴ yesterday's excuses are an intolerable basis for today's law... Born in a time frame when groundwater hydrology was unknown, Texas groundwater law is based upon scientific ignorance. Against a backdrop of what is known today... groundwater law stands out as a jurisprudential anomaly... *East*, was the result of inexpertise.... As occult and secret as the hydrology of groundwater may have seemed in 1904, the presumption of the unknown in 1991 is inconsistent with present knowledge.⁴⁵

The science of hydrology, underpinned by an interaction of many disciplines including geology, chemistry, microbiology, physics and mathematics, has for some time evolved so that it is more possible to "know with a great deal more certainty than was previously [the case] the direction and rate of groundwater flows".⁴⁶ Clearly, groundwater is no longer always the 'hidden' treasure of old and hence it may be possible, if it is deemed appropriate, to apply the rules which govern defined streams to underground percolating water.⁴⁷ As noted below, such approaches are now followed in certain US states. This type of regime may, however, entail significant costs. The issue of whether such a move

⁴³ Any move though to protect an individual's rights from abstraction of ground water may require considerable individual and wider societal costs. These ideas are developed in chapter 7.

⁴⁴ *Houston & T.C Ry. V East*, 98 Tex. 146, 81 S.W. 2d 279, 280-281 (1904). This case is the seminal Texas decision affirming the traditional absolute dominium rule.

⁴⁵ L. Shannon Shadwick, 'Obsolescence, Environmental Endangerment and Possible Federal Intervention Compel Reformation of Texas Groundwater' (1991) 32 *JTXLR* 641 at p. 666.

⁴⁶ T. Anderson, *Water Crisis: Ending the policy drought* (1983) at p 93.

⁴⁷ Also see generally, R.A. Dowling, *supra* n. 42.

would be a useful one in the UK is analysed in chapters 6 and 7. Whatever the merits of such a move, clearly the ignorance rationale is no longer in itself a viable one.

Water not a renewable resource

It has already been noted that the absolute dominium approach may lead to over-exploitation of resources between competing proprietors and waste. While such a scenario may not be problematic in respect of resources that are abundant and renewable, the key point about water in general is that it is not, as once thought, a renewable resource in the strict sense. Strantz has noted that :

the commonly understood 'water cycle' envisioned surface water evaporating into the atmosphere, then cooling and falling ...into oceans, rivers and lakes...collecting in underground aquifers, percolating upwards... and becoming surface water once again, ready for... repetition of the cycle. However, this simplistic model presumed that equal volumes of water always move through each stage at equal rates, and that materials mixed with water were always able to naturally precipitate out somewhere in the cycle, leaving pure water cycling through the system. In fact, varying rates of natural flow, natural contamination... and the ability for human activities to upset the volume balances in each stage, create the potential of...contamination and permanent damage...Too rapid an extraction or too great a mixing of deleterious material... can remove useable water from the cycle.⁴⁸

Environmental problems

Linked to the above is the notion that too heavy abstraction of groundwater may lead to a number of environmental problems. For example, species, fauna and flora and general ecosystems dependent on springs fed by the groundwater may become threatened.⁴⁹ Near coastal areas, where water levels begin to fall after excess abstraction, sea water may begin to intrude into the aquifer thus contaminating the supply.⁵⁰ Generally, when the water table level is declining, the aquifer is particularly susceptible

⁴⁸ N.J. Strantz, 'Rights to groundwater in North Dakota : trends and opportunities' (1995) 71 *NDLR* (North Dakota) 619 at p 623.

⁴⁹ See for example, Anonymous comment, 'Environmental significance of instream flows' 17 *St Mary's LJ* 1297 (1986).

⁵⁰ N.A.Dowling, *supra* n. 42 at p 34.

to various kinds of contamination. Decreasing the amount of water in the system will exacerbate any pollution problems because their concentration per unit of water will increase. In addition, the act of pumping helps disperse pollutants more quickly throughout the aquifer. Of course, if pollutants continue to enter the system, then the problem becomes even more acute. Further problems emanating from excess withdrawals may include land subsidence (for which, as noted in chapter 3, under English common law there is no remedy for aggrieved landowners), increasing mining costs as water levels decline⁵¹ and 'drawdown' (discussed below).

Water level drawdown.

Water level drawdown is a common problem that stems from over-abstraction. The problem as experienced in Texas is usefully articulated by Todd:

[a]s groundwater is pumped, the water table...will typically decline. If pumpage greatly exceeds recharge (flow into the aquifer) drawdown can be significant. Extensive drawdown has been measured in the Houston-Galveston area.⁵² From 1943 to 1977, water levels declined as much as 250 feet in wells completed in the Chicot aquifer, and as much as 300 feet in wells drawing from the Evangeline aquifer. Drawdown at this scale is a concern for two reasons: first, lift costs increase, and second, if the water table drops below the screened depth of the well, the well may have to be reworked or even abandoned or replaced.⁵³

Moreover heavy withdrawals from aquifers which share what can be termed 'blended zones' with less pure aquifers may ruin naturally occurring pressure barriers thus speeding up the degradation of the purer aquifer.⁵⁴ As will be seen when analysing alternative water regimes, such problems may still arise to varying degrees when other allocation rules for underground water are in place. Nonetheless, clearly the absolute dominium approach, placing few limits on exploitation, tends to create these problems more commonly than in other systems.

⁵¹ See examples cited in D. Todd, *supra* n. 24 at p 235.

⁵² In Texas.

⁵³ D. Todd, *supra* n. 24 at pp 234-235.

⁵⁴ N. Strantz, *supra* n 48 at p 643.

Alternative approaches to groundwater governance.

The discussion now proceeds to an analysis of alternative approaches that may be encountered in relation to groundwater governance which seek to alleviate some of these commonly encountered repercussions.⁵⁵ Although there are variations of each there are in fact two main approaches to groundwater governance:⁵⁶ prior appropriation regimes, where rights to groundwater are now commonly vested in the State and certain private uses are authorised and protected on a priority basis; and non-appropriation regimes where the right to exploit groundwater is seen as an incident of private ownership, which encompasses the largely unfettered right set out in traditional absolute dominium rule and those systems which place certain limits upon the right of exploitation, including the reasonable use rule and the correlative rights rule.

Protecting prior uses

Some water law regimes have chosen to protect existing uses of groundwater under recognition of a beneficial prior or prescriptive right. In fact there is some early English precedent in relation to groundwater in which such a view was given judicial support. Prior to the seminal, absolute dominium case of *Acton*, in *Balston v Bensted*⁵⁷ Lord Ellenborough supported the principle of preserving a prior or prescriptive right of use of groundwater under English common law.⁵⁸ The facts in this case were set out by Lord Ellenborough:

⁵⁵ Percolating groundwater has been chosen because of the multifarious approaches to rights to abstraction that can be found. Most of the approaches (apart from absolute dominium) are also utilised in respect of surface water in defined channels.

⁵⁶ G. Sheek, 'Eastern water law' (1986) 1 *Nat'l Resources & Env't* 47.

⁵⁷ 1 Camp 463(1808.)

⁵⁸ By contrast prior appropriation was never accepted in Scotland either in relation to groundwater or defined streams. According to Whitty, "Scots Law developed directly from the *jus commune* beginning in the seventeenth century at latest and at no time received the English doctrine of prior appropriation" – N. Whitty, 'Water Law Regimes' in Reid & Zimmerman (eds) *A History of Private Law in Scotland* (2000) Vol 1 at p 451.

[a]s far back as could be recollected, there had been a gush of water from a hole in the plaintiff's close... In 1805, the plaintiff purchased this close, and erected a paper manufactory upon it; for which a copious supply of spring water is essentially requisite. At the same time the defendant, becoming owner of the adjoining close, opened a stone quarry in it. As the excavations proceeded, considerable quantities of water were found... A deep drain was afterwards made to carry it off into the river... But, in the meantime, the water flowing into the plaintiff's [collector] had been gradually decreasing and subsequently to the making of the drain did not amount to more than an eighth or tenth part of its former quantity. On the idea, therefore, that the defendant had unlawfully diverted the water coming to the spring, this action was brought.⁵⁹

Causation was duly proven that the defendant's actions had caused the water in the plaintiff's stream to dry up. The court recognised operation of a sort of proto-prescriptive right and upheld the plaintiff's case on the basis that "20 years exclusive enjoyment of water in any particular manner affords a conclusive presumption of right in the party so enjoying it".⁶⁰

If the common law had followed this approach, the first drawer of water would possess a prior right based upon prescription which others could not thereby erode by virtue of their own activities. The rule was not conjured out of thin air by Lord Ellenborough; rather it echoed the traditional English common law rule that was applied in relation to water in a defined channel prior to the later adoption of the riparian rights regime.⁶¹ There is some dispute as to whether this early doctrine was one merely based upon a prior use or rather a prescriptive right. Blackstone's view, for example, was a simple rule of priority: "[i]f a stream be unoccupied, I may erect a mill thereon, and detain the water; yet not so as to injure my neighbour's prior mill, or his meadow: for he hath by first occupancy acquired a property in the current";⁶² other authorities such as Ellenborough's view above, however, suggested that the right was based on some prescriptive period.

⁵⁹ *Bakton v Bensted* 1 Camp 463 (1808) at 464.

⁶⁰ *ibid.*

⁶¹ See the cases and references cited at footnote 72.

⁶² W. Blackstone, *Commentaries* Vol II 403.

Whatever the case in this respect, the rule proved short lived in England in relation to both groundwater and water in a surface stream. This approach has, however, flourished elsewhere.

Such prior or 'appropriative' rights regimes can be found in certain western US states such as Nevada, Kansas, Idaho and New Mexico. The states which have adopted this rule tend in a climatic sense to be the driest in the USA.⁶³ This is no coincidence as the prior appropriation approach has historically been seen as the most appropriate in arid climates. Under such approaches, established, beneficial uses of this scarce resource can be recognised and protected under law. As the Nevada Supreme Court on rejecting riparian rights in respect of groundwater suggested in *Reno Smelting, Milling and Reduction Works v Stevenson*⁶⁴

[the] inapplicability [of the riparian rights rule] ... applied forcibly to the state of Nevada. Here the soil is arid, and unfit for cultivation unless irrigated by the waters of running streams. The general surface of the state is table land, traversed by parallel mountain ranges. The great plains of the state afford natural advantages for conducting water, and lands otherwise waste and valueless become productive by artificial irrigation. The condition of the country and the necessities of the situation, impelled settlers upon the public lands to resort to the diversion and use of the waters. This fact of itself is a striking illustration, and conclusive evidence of the inapplicability of [riparian rights].

The majority of prior appropriation regimes are now regulated by statutory licensing systems whereunder the state is vested with ownership of groundwater and rights to abstract the water are granted to private parties on a priority basis and conferred protection against competing users.⁶⁵ The key point about the prior rights systems in western US states is that a prior right can only be established and hence protected when

⁶³ For example, Nevada is the driest state in the USA with annual rainfall on average a mere 9 inches, with some part of the state receiving only 4 or less – Nevada Division of Water Planning, Nevada Water Facts at <http://www.state.nv.us/cnr/ndwp/wat-fact/precip.htm>.

⁶⁴ 21 P. 317 (Nv 1889) at 318.

⁶⁵ Any jurisdiction seeking to establish a state-controlled licensing system for water abstractions may be faced with compensation concerns over the taking of private property rights. This issue is discussed at the end of this chapter and extensively in respect of Scotland in chapter 7.

the use is a beneficial one.⁶⁵ The term 'beneficial use' is itself a somewhat vague concept and although state legislators have at times attempted to define what amounts to beneficial and/or non-beneficial uses, as Tarlock has suggested, definition of the term remains a largely judicial role "which historically performed three functions... [that] are being expanded to incorporate new limitations on the use of water in light of changing competing demands. First, the doctrine emphasized that the basis of the water right is the continued use of the water. Second, it suggested that the use of water was limited to productive purposes. Third, it empowered the courts to curb the wasteful use of water".⁶⁶

The sum total of these rules may mean that beneficial uses tend to be compatible with current uses rather than future exploitation. So for example, abstracting water and storing it with a view to future uses may not be seen in this context as "beneficial". Wiel asserted the traditional view that for beneficial use "the intention must be *bona fide* and not for speculation, such as the intention to store water for a monopoly".⁶⁷ While such an approach may obviously lead to short-termism in water use, future uses have been deemed 'beneficial' in more modern times. For example, since the late 1960's, the "progressive growth doctrine" developed in New Mexico allows an appropriation to be based on projected future uses such as the expansion of irrigated acreage.⁶⁸

At first blush, a clear drawback of a prior appropriation regime is that there is no equitable apportionment of water guaranteed thereunder which means that if water is

⁶⁵ *Union Mill & Mining Co. v Dangberg*, 81 F. 73 (C.C.D. Nev. 1897).

⁶⁶ D. Tarlock, *supra* n 13 at S 5.66. It should be noted of course that here in Scotland any new regime which sought to bring in the state regulation of water uses could be brought about on a different basis – eg on a *de novo* 'reasonable' allocation basis.

⁶⁷ I. Wiel, *Water rights in western states* 3rd ed. (1911) at p 407.

⁶⁸ *State ex rel. State Engineer v Crider* 78 N.M. 312, 431 P.2d 45 (1967); *Dept of Ecology v Theodoratus* 135 Wash. 2d 562, 957 P 2d 1241, 1255-57 (Sanders, J dissenting).

scarce then later appropriators may simply go without. A key point, however, is that appropriators may lose their right of appropriation through either prescription or forfeiture/abandonment of beneficial uses. In times of water scarcity, therefore, competing parties may take aggressive action to either challenge existing uses as non-beneficial in nature or attempt to show that a right has fallen into disuse. In relation to Nevada's groundwater regime, for example, it is provided that :

[f]ailure for five successive years on the part of the holder of any right... to use beneficially all or any part of the underground water for the purpose for which such right shall be acquired or claimed, shall work a forfeiture... and abandonment of ... rights to the use of such water to the extent of such nonuse. Upon the forfeiture of a right to the use of ground water, such water shall revert to the public and shall be available for further appropriation, subject to existing rights.⁶⁹

The general prior appropriation rule can be justified in the sense that beneficial uses are secured in respect of groundwater which is a relatively scarce resource in most Western states. Although latecomers may have to do without water in times of scarcity, the doctrine acknowledges the financial investment and effort in relation to such activities as drilling and irrigation and safeguards investors' interests in this regard.⁷⁰ Despite the inherent requirement that this scarce resource should be effectively utilised in arid climes, appropriation regimes have been heavily criticised, however, as both failing to recognise the legitimate water needs of secondary users and also being inherently wasteful on the basis that such a 'use it or lose it' approach is out of kilter with the need to conserve water resources and discourage wastage.⁷¹

⁶⁹ Act of Mar. 15, 1947, ch. 43, 1947 Nev. Stat. 52.

⁷⁰ N. Strantz, *supra* n. 48 at p 629.

⁷¹ S. Harrison, 'The Historical Development of Nevada Water Law' (2001) 5 *University of Denver Water Law Review* 148 at p 182. For a recent example of the loss of prior appropriation water rights see W. Turner 'Water rights can't be saved : use them or lose them' at <http://www.waterbank.com/Newsletters/nws45.html> 9th July 2004.

Correlative rights

It has already been noted that one of the reasons why riparian rights recognised in relation to flowing waters in a known and defined channel have no role to play in relation to underground percolating water concerned the practical difficulties of monitoring water flows beneath the land and hence attributing correlative rights to landowners. Nonetheless some judicial support for upholding some sort of correlative rights regime in respect of percolating groundwater was in fact manifest in some early English case-law. Take for example, the dissenting views of Sir John Taylor Coleridge in *Chasemore* who supported both correlative rights and a prescriptive appropriative right in under ground water :

why water in natural course of transit under ground should, as such, be more of a subject of individual property than water flowing above ground, is not explained; but passing that by, it seems to have been overlooked, the water draining from under his neighbour's soil into, as well as collected in, the neighbour's well, must on the same principle be the neighbour's property; indeed, independently of this, it is well established that water collected in a well is so much taken from the common stock and reduced into possession, and become the subject of property. Now it is certainly a novel principle that by an operation on my own land, I may both excusably abstract, and lawfully convert to my own use, the underground property of my neighbour.⁷²

If one were to apply a riparian rights regime similar to that which exists in relation to streams above ground (and those below in a known and defined channel) to underground percolating water, overlying landowners would have the right to underground water subject to the ordinary and reasonable use of the water by the competing users, the right to take and use water at least for domestic purposes and the right to draw water for extraordinary purposes provided that such use is reasonable and

⁷² *Chasemore v Richards* (1859) 7 HL Cas. 349. A number of early English cases relating to mill use supported a prior or prescriptive right in relation to mill use on water running in a defined stream – see for example, *Littrel's Case* (1600) 4 Coke 86a, 76 ER, KB; *Russel and Handfords Case* (1583) 1 Leo 273, 74 ER 248 KB; *Richards v Littill* (1695) 5 Mod 206, 87 ER 611, KB; *Anonymous* (1638) Cro Car 449, 79 ER 1031, KB; *Tenant v Goldwin* (1705) 2 Raym LC 1089, 1094, 92 ER 222, 225, KB; *Palmer v Keblethwaite* (1686) 1 Show KB, 64, 64, 89 ER 451, 451. Whether or not these early cases in fact established a doctrine of prior right, rather than a prescriptive right is discussed in CM. Rose, *Property and Persuasion : Essays on the History, Theory and Rhetoric of Ownership* (1994) at p 168.

the water is not substantially altered in volume or character.^{72a} Despite being a more equitable rule, where water is scarce, such an approach may be difficult to adhere to in practice.

Some of the terminology used in modern parlance is somewhat confusing and the approach outlined above is in some respects similar to both the 'American' or 'reasonable use' rule adopted in most Eastern US states and the 'correlative rights' rule that has been adopted in California which in some senses mirrors reasonable use but differs in certain key ways. Here both rules are discussed:

Reasonable use rule

The reasonable use rule in essence provides a modification to the absolute dominium approach in that the right to exploit underground percolating water remains an incident of landownership but such exploitation is limited to that which is deemed reasonable. The doctrine was developed historically as a riposte to the perceived inequities and harshness of the absolute dominium rule. Since the New Hampshire Supreme Court explained in 1854 that

the rights of each owner being similar, and their enjoyment dependent upon the action of other landowners, their rights must be correlative and subject to the maxim *sic utera*, so that each landowner is restricted to the reasonable exercise of his own rights and a reasonable use of his own property in view of the similar rights of others

a number of US States have rejected the absolute dominium rule and replaced it with a reasonable use equivalent.⁷³

^{72a} Subject to prescriptive rights which, for example, could sanction an industrial use which exhausts the water supply.

⁷³ *Basset v Salisbury Manufacturing Co* 43 N.H. 569 (1862). States such as Alabama, Florida, Kentucky, Maryland, New York, North Carolina and Tennessee have all embraced a reasonable use rule.

Judicial recognition of the concept of recognition of correlative rights was fuelled by the practical effects of industrial exploitation. To this end, the expansion of the reasonable use rule (often simply termed the 'American' rule owing to its popularity) in the late 19th century across Eastern States, was to large extent a response to the emerging technology of high capacity pumping. Such new, mass abstraction techniques were utilised when wells were sunk in rural areas to feed the growing needs of cities. The resulting drying up of rural land was perceived by the courts to amount to unfair competition for farmers.⁷⁴ The leading New York case of *Forbell v City of New York*⁷⁵ set out the following justification for advancement of the rule :

the courts of New York have held that the drainage of land ... by a city pumping works, which exhausts from ... the natural supply of underground or subterranean water, and thus prevents the raising of crops... renders the city liable to the landowner for the damages he sustains, and entitles him to an injunction against the continuation of the wrong... The strong trend in later decisions is towards a qualification of the earlier doctrine that the landowner could exercise unlimited and irresponsible control over subterranean waters on his own land, without regard to the injuries which might thereby result to the lands of other proprietors in the neighbourhood. Local conditions, the purpose for which the landowner excavates or drills holes or wells on his land, the use or non-use intended to be made of water, and other like circumstances have come to be regarded as more or less influential in this class of cases, and have justly led to an extension of the maxim '[s]ic utere tuo ut alienum non laedat' to the rights of landowners over subterranean waters, and to some abridgement of their supposed power to injure their neighbors while benefiting themselves.

Reasonable uses

It would be misleading to suggest that reasonable use rules are effect driven. Hence if loss is caused to a neighbouring landowner as a result of an abstraction, that in itself would not be grounds for an action. Rather the rule is process driven and the focus is on whether or not the abstraction complained was a reasonable one to have been made in the circumstances. What amounts to a reasonable use, is clearly therefore a key question. Determination of this point may be no easy task and hence in such regimes,

⁷⁴ D. Tarlock, *supra* n. 13 at S.4.8. (2002).

⁷⁵ 47 App. Div. 371, 164 N.Y. 522, 58 N.E. 644 (1900).

one might expect transactional costs in the guise of court disputes to be high. In reviewing the operation of the American rule across US States, Behrens and Dore have noted that "there is no bright line test for what constitutes a reasonable use. The court must evaluate whether a use is reasonable on a case by case basis in light of all pertinent factors including the parties involved, their relative positions, the comparative value of their uses of the groundwater, and climatic conditions".⁷⁶ Reasonableness may further take into account such factors as well location and volume of water abstracted.⁷⁷

Having said this, certain assumptions about what sort of uses might fulfil the reasonableness requirement can be made. It was established at an early stage that the use must be for a beneficial purpose on the overlying land;⁷⁸ secondly, use on non-overlying land is *per se* unreasonable. It has therefore been suggested that the reasonable use rule is the most constricting on landowners as the fact that water can only be abstracted for beneficial uses upon overlying land and not for any other use, is clearly an enterprise limiting measure.⁷⁹ On the other side of the coin, however, it appears that generally under a reasonable use rule, if a use can be established for a beneficial purpose on overlying land then the landowner may abstract all the water even to point of leaving his neighbour with none. So, in this sense, no regard is paid to other landowners' correlative rights.⁸⁰ Moreover, while it is clear that any malicious abstraction will *per se* be unreasonable, conservationists have challenged the reasonable use rule in that it is at least

⁷⁶ E. Behrens and M. Dore, 'Rights of landowners to percolating groundwater in Texas' 32 *South Texas Law Review* 185 (1991) at p 190.

⁷⁷ T. Henderson, J. Trauberman & T. Gallagher, *Groundwater Strategies For State Action* 2 (1984) at p 31.

⁷⁸ *Evans v City of Seattle* 182 Wash. 450, 47 P.2d 984 (1935).

⁷⁹ E.F. Murphy, 'The Recurring State Judicial Task of Choosing Rules for Groundwater: How Occult Still?' 1987 *NLR* 120 at p 134.

⁸⁰ In so far as one use is preferred to another. A list of cases in respect of different states is listed in Tarlock, *supra* n 13, including: Ky, *United Fuel Gas Co. v Sawyers* 259 S.W.2d 466 (Ky. 1953); Tennessee, *Nashville C & St. L. Ry. v Richert*, 19 Tenn. App. 89 S.W. 2d 889 (1935); N.C., *Bayer v Nello L. Teer Co.* 256 N.C. 509, 124 S.E.2d. 552 (1962).

open to question as to whether practices that are wasteful are prohibited on that basis alone without the wastage causing any damage to competing users.⁸¹

California Correlative Rights

The correlative rights rule was brought to the fore in the landmark California case of *Katz v Walkinsban*⁸² where the doctrine espoused was based upon reasonable use, but also drew on the application of riparian rights and the idea of the proportionate sharing of withdrawals among landowners overlying a common basin – this right arising as an incident of ownership of the land overlying the aquifer. Basically speaking, under the correlative rights regime, all overlying landowners are entitled to abstract unlimited amounts of water on their land for beneficial purposes except that where there is a scarcity of supply each landowner is limited to a “fair and just proportion” of the total ground water supply.⁸³ In the absence of any other knowledge, the general rule seems to be that the owner of the largest tract of land is simply entitled to the largest share of water regardless of whether this is the most efficient or fair solution.⁸⁴

The rule is more complex than others. In addition to the correlative rights of overlying landowners, in times of surplus, groundwater may be subject to further claims of others based upon the right of prior appropriation. Generally, if after meeting the reasonable

⁸¹ Moses, ‘Basic Groundwater Problems’ (1969)14 *Rocky Mt Min. L. Fdn. Inst* 501 at p509, suggested that ‘waste is inherent in the terms reasonable use. Waste is unreasonable’. Courts have not always shared this view. See for example, see for example, *Prohowsky v Prudential Ins. Co.* 767 F.2d 387 (7th Cir. 1985).

⁸² 74, P 766, 772 (Cal 1902).

⁸³ *ibid*; The doctrine was summarised concisely by Justice Shaw in the subsequent case of *Burr v. Mackay Rancho Water Co* at 154 Cal. 428, 434-35, 98 P. 260 (1908) as follows (at 263) : “Two owners of separate tracts of land, situated over common strata of percolating water, may each upon his own land, take by means of wells and pumps from the common strata, such quantity of water as may be reasonably necessary for beneficial use upon his land, or his reasonable proportion of such water, if there is not enough for all, but that one cannot, to the injury of the other, take such waters from the strata and conduct the same to distant lands not situated over the same water-bearing strata”.

⁸⁴ The California approach is very similar to that set out in “The restatement (second) of torts” (1977) which states the rule at § 858 this way : “Liability for Use of Ground Water (1) A proprietor of land or his grantee who withdraws ground water from the land and uses it for a beneficial purpose is not subject to liability for interference with the use of water by another, unless ... (b) the withdrawal of ground water exceeds the proprietor's reasonable share of the annual supply or total store of ground water”

and beneficial needs of the overlying owners, there is surplus water, then it can be used reasonably and for beneficial uses on non-overlying lands.⁸⁵ In contrast to the rights of overlying landowners, the most recent non-overlying appropriators must give up their uses first in times of shortage – there is no *pro rata* sharing in this context.⁸⁶ As between (non-overlying) appropriators, priority in time applies; the initial appropriator is entitled to all reasonably and beneficially used surplus water, to the exclusion of subsequent appropriators. Where an appropriator's use follows that of an overlying owner it is limited to waters surplus to the overlying landowner's use.⁸⁷ If an appropriator's use precedes that of an overlying landowner, however, he must give way to the overlying landowner, although his privilege is limited to a quantity necessary for his use.⁸⁸ These rules that prefer use by overlying owners, operate in essence to preserve the finite resource. This is so because external appropriations, or extractions for export, actually withdraw water from the basin, whereas uses by overlying owners at least partially replenish the basin.⁸⁹ It may be speculated, however, that by granting an unwavering priority to overlying users, courts may have failed to consider the relative social utility of specific extraction programs and the environmental damage or benefit that they may create.

Moreover, correlative rights regimes have been criticised because under these approaches the state is not in fact able to limit overall levels of abstraction. Furthermore, in practice

⁸⁵ See *City of Pasadena v City of Alhambra* 33 Cal. 2d 908, 925, 207 P.2d 17, 28 (1949); *Alphough Irrig. Dist v County of Kern* 113 Cal. App. 2d 286, 292, 248 P.2d 117, 120 (1952).

⁸⁶ See California Civil Code § 1414 (West 1954); *City of Pasadena* *supra* n. 85; *City of San Bernardino v City of Riverside* 186 Cal. 7, 26-28 (1921).

⁸⁷ See, e.g. *Corona Foothill v Lilibridge* 8 Cal. 2d 522, 66 P.2d 443 (1937).

⁸⁸ See *Katz* *supra* n. 82.

⁸⁹ *County of Inyo v City of Los Angeles (Inyo II)* 61 Cal. App. 3d 91, 100, 132 Cal. Rptr. 167, 173 (1976).

the regime may entail high transactional costs. Disputes between competing abstractors as to who should get what water and when can generally only be settled by litigation.⁹⁰

These concerns have been elaborated by Kletzing :

[a] cogent argument has been made that the Katz case unintentionally established principles that were prone to produce overdrafted groundwater basins... The essence of the [correlative rights] doctrine was the sharing of available supplies fairly among overlying users. Its weakness was that the only method for limiting withdrawals was by court action. The court could have hardly anticipated that, because of the time and expense, law suits would prove to be impractical for the individual user; only eight basins would be adjudicated in the succeeding eighty-five years. Many of the remaining basins would continue in overdraft. But even if the court had been prescient, it had no authority to establish a simplified administrative procedure for allocating rights or a State regulated permit system for extractions. The most it might have done was to proclaim the need for legislation and thus focus public attention on the problem.⁹¹

The doctrine of mutual prescription and equitable solutions

The above problems may to some extent have been exacerbated (albeit inadvertently) by the California Supreme Court's adoption of a doctrine known as "mutual prescription". In the case of *City of Pasadena v City of Alhambra*,⁹² concerning a dispute over groundwater rights in a basin at a time of increasing water scarcity concerns, the court held that as the basin had been in overdraft for a 5 year period,⁹³ all the parties (both overlying landowners and appropriators) had gained prescriptive rights as against one another and as such their rights to extract water from the basin should be "limited by a proportionate reduction in the amount which each party had taken throughout the statutory period."⁹⁴ The court's view was that the public interest was better protected in this way because a

⁹⁰ K. Norris, 'The Stagnation of Texas Ground Water law : a political v environmental stalemate' (1990) 22 *STMLJ* 493 at p 513.

⁹¹ P. Kletzing, 'Imported groundwater banking: the kern water bank--a case study' (1988) 19 *PACLJ* 1225 at p 1234.

⁹² 207 P.2d 17 (Cal. 1949).

⁹³ Overdraft commences whenever extractions increase, or the withdrawal maximum decreases, or both, to the point where the surplus ends.

⁹⁴ *City of Pasadena supra* n. 92 at 33.

proportional reduction in each abstractor's share of water would be less severe than a ruling which eliminated the water rights of some users entirely.⁹⁵

The result of this decision, however, has been to encourage abstractors to take as much water as possible when water scarcity in respect of the aquifer could become a possibility, and in the run up to any possible court adjudication which, on the basis of mutual prescription, would reduce each appropriator's respective abstraction rights proportionate to their levels of pumping over the prescriptive period. In the case of *City of Los Angeles v City of San Fernando*,⁹⁶ involving a dispute over water rights to a depleting aquifer, the court was able to sidestep the mutual prescriptive approach set out in *Pasadena* by holding that section 1007 of the California Civil Code⁹⁷ prohibited the establishment of a prescriptive right against public bodies. As Taguchi has noted "[t]his holding was significant because nearly all basins have some public users who would now have an edge over private parties who claimed prescriptive rights in a groundwater basin adjudication".⁹⁸ The essence of a public body is one which is acting on behalf of society (or at a section thereof) and some sort of presumption that such a body's rights should trump those of private investors may hold some moral resonance. This approach, however, may not be seen as an industry-friendly one. This general issue of societal versus industry interests is picked up in chapter 7.

In addition to the public body exception, the court also amended the *pro-rata* pumping, mutual prescription approach set out in *Pasadena* to one which, in Taguchi's words, "some believed would compel courts to look at equitable factors... including physical

⁹⁵ *ibid.*

⁹⁶ 14 Cal.3d 199, 537 P.2d 1250, 123 Cal.Rptr. 1, Cal., May 12, 1975.

⁹⁷ California Civil Code S 1007 (West 2002).

⁹⁸ T.L. Taguchi, 'Whose space it is anyway? Protecting the public interest in allocating storage space in California's groundwater basins' 32 *Sw. U.L. Rev.* 117 (2003) at p 129.

and climatic conditions, consumptive use in different areas, and the extent of established uses before apportioning water in future basin adjudication cases".⁹⁹ This approach, although shrouded with uncertainty, would pay more regard to notions of public utility by taking into account the promotion of the most beneficial uses of the groundwater and lessen the extent that competing abstractors might seek to increase their pumping prior to any possible court adjudication of water rights.

The current situation, however, is perhaps not synonymous with the *City of Los Angeles* decision. In the most recent basin adjudicative case of *City of Barstow v Mojave Water Agency*,¹⁰⁰ while upholding the general approach set out in *City of Los Angeles*, the Supreme Court viewed that "[w]e have never endorsed a pure equitable apportionment that completely disregards overlying owners' existing legal rights. Thus, to the extent ... [that] [*City of Los Angeles*] could be understood to allow a court to completely disregard California landowners' water priorities, we disapprove it".¹⁰¹ In *City of Barstow*, an equitable, physical solution that had been crafted by the original trial court after the parties to the action had collected appropriate hydrological data, was therefore held not to be binding on any overlying landowners who had refused to sign up to it. As Tarlock has noted

[t]he court's reluctance to impose the trial court's physical solution on the holdout farmers appears to be based upon the conclusion that it was inequitable to deprive farmers of their prior water rights because the payment of replacement waters would be a hardship to them and the fact that the trial court had not made detailed findings on the beneficial or non-beneficial use of the holdouts.¹⁰²

⁹⁹ *ibid.*

¹⁰⁰ 5 P 3d 853 (Cal. 2000).

¹⁰¹ *ibid.* at 868.

¹⁰² D. Tarlock, *supra* n. 13 at S 4.17.

Overview

The above section has provided a review of the various alternative approaches to ground-water allocation. Indeed most of the rules are also applied (perhaps with modifications) in respect of water in defined surface channels. Each rule has certain positive and negative attributes and moreover their appropriateness to any particular area may be dictated to a large extent by hydrological attributes and climate. For ease of reference, the next table summarises the pros and cons of the three alternative approaches inherent in the US states, plus the absolute dominium model :

Table 1: alternative approaches to groundwater governance in the US

Approach	Pros	Cons
Prior appropriation	<ul style="list-style-type: none">- Rights may be vested in the state to recognise value of water resources- Beneficial uses protected- Licensed rights may be determinable and exclusive and hence open to trading to ensure the most efficient use of the resource- Value placed on water may encourage efficient use	<ul style="list-style-type: none">- Rights vested in state may entail compensation issues- Problems determining beneficial uses- Focus on current uses may lead to 'short-termism'- Where water is scarce, secondary users may go without- 'Use or lose it' principle may lead to waste
Reasonable use	<ul style="list-style-type: none">- Reasonable use approach pays due regard to rights of others.- No State 'taking' of private property right	<ul style="list-style-type: none">- Problem of determining what is a reasonable use- Prohibitive in that uses generally limited to overlying land- In times of scarcity a reasonable use may pay no regard to correlative rights of others
Correlative rights	<ul style="list-style-type: none">- Rule inherently concerned with fairness in respect of correlative rights of others- In times of surplus allows parties other than overlying landowners to share in resources- No State 'taking' of	<ul style="list-style-type: none">- State unable to restrict the total amount of water extracted- High transactional costs; high incident of inter-party disputes- Mutual prescription doctrine leads to overuse

	private property right	and waste
Absolute dominium model	<ul style="list-style-type: none"> - Low transactional costs - Pro development (historically) 	<ul style="list-style-type: none"> - State unable to restrict total amount of water extracted - May lead to inequity, unfairness - Law of capture encourages inefficiency and over-use

It would appear from the above analysis that there is no one-size-fits all 'optimum' model. From the review of the various different regimes above, all of the possible advantages that might result from their imposition – some of which are prevalent in more than one system – which an optimum water governance regime might strive for are now identified:

- A recognition of the importance of water rights for all in society
- A need, however, to countenance existing private property rights in water
- A need to take into account the correlative rights of other overlying landowners
- Allowing others (beyond overlying landowners) the right to make use of the resource
- Certainty of extent of right and hence low transactional costs
- Disallowing unreasonable activities in respect of water
- Encouraging water use to aid industrial development
- Encouraging and protecting beneficial uses
- Limiting water uses in times of shortages/environmental problems
- Setting out exclusive and determinable rights which may encourage trading to produce the most efficient use of the resource.¹⁰³

¹⁰³ Trading is discussed extensively in chapter 7.

Clearly not all positive features are present in any one system. The choice of regime that individual states have made in respect of water governance represents a prioritising of certain positive features at the expense of certain other features and this balancing act may be influenced by a number of different factors including, historical legal influences, political expediencies, climate, prevalent current or historical water uses, localised environmental concerns and technological awareness of water resources. In Western states in the USA, for example, the presence of arid climates and relatively low water deposits led to the need to establish appropriative regimes in which the scarcity of the resource demanded a state-controlled system at the expense of private rights, which could limit the total amount of water abstracted to avoid drought and recognise and protect the most socially beneficial uses. By contrast, in many Eastern states, where water is generally plentiful and drought concerns have not historically been prevalent, except in specific localised areas - states have typically embraced an absolute dominium regime or in rejecting the inherent unfairness of such an extreme Blackstonian approach, correlative rights regimes which although tend not to limit the total amount of water abstracted, encourage water use in the name of industrial development whilst recognising the correlative rights of others in society.

A key aspect which cannot be ignored pertains to the legal ramifications of the imposition of any new water abstractions regime. The US state of Texas, which has continued to adopt an absolute dominium approach in respect of groundwater, has in the face of continual environmental and drought concerns, been reluctant to move to a state-controlled prior appropriation system which might fit in with current climatic/hydrological conditions. Although such a system would perhaps best address these drought problems it would likely be politically unacceptable to landowners and (in

the absence of compensation) potentially contrary to the 5th Amendment of the US Constitution which stipulates that "no person shall be...deprived of ... property, without due process of law; nor shall private property be taken for public use, without just compensation".¹⁰⁴ Texas already operates a permit system in respect of use of water in defined channels and as McCleskey has noted

[t]he Texas Water Commission could administer a permit system for ground water...[h]owever, Texas or US courts may hold divesting all Texas landowners of their water rights to be a taking. Would the State's assuming ownership of all ground water be considered an exercise of eminent domain? If so, the State would have to compensate for the reasonable value of the water beneath their land.¹⁰⁵

Summary

From the above it can be seen that policy ramifications have played a part in the reform of the law relative to migratory things in different jurisdictions. In respect of water, new policy considerations have arisen often in light of emerging knowledge of the extent of the resource *in situ* and as a fuller appreciation of the impacts of different uses has become more apparent. Competing policy aims may not be compatible in their entirety and some policy markers may be required to be sacrificed in lieu of others. This is an issue discussed later in this thesis.

This thesis has already discussed in some depth the current common law situation in Scotland. As the discussion in Part III over the next two chapters illustrates, Scotland is set to undergo some radical reforms in water governance over the next decade or so. Whether or not these reforms may produce an optimum system for Scotland is another matter. Clearly an optimum regime in Scotland should hope to achieve at least some of

¹⁰⁴ It is unnecessary for the purposes of this thesis to analyse the nature of the 'takings regime' in the US. For an in-depth discussion of the US takings regime and the Supreme Court's different articulations of the concept of property in this regard see L.S. Underkuffler-Freud, 'Takings and the Nature of Property' 9 (1996) *CANJLJUR* 161.

¹⁰⁵ R.A. McCleskey, 'Maybe Oil and Water Should Mix - at least in Texas Water Law' 1 (1994) *TXWFLR* 207 at pp 223-224.

those societal benefits that have been articulated above and that the balance be struck and trade-offs made in the correct way for the needs of the nation. Moreover this should be done in such a way that is not inconsistent with existing private property rights which may currently be present in water. In this respect although there is no constitutionally grounded right against an uncompensated state taking in Scotland, the impact of the European Convention on Human Rights (ECHR) may produce a similar debate to that prevalent in Texas regarding any state variation of existing rights to water.

In short, the next two chapters will thus focus on the proposed reforms in Scottish water governance. Chapter 6 examines the nuts and bolts and a number of 'micro issues' which arise from implementation of the new scheme. Chapter 7 takes a more analytical approach, and by drawing on material in this and preceding chapters and other relevant literature, discusses the impact of the proposed reforms and whether or not the new regime is an appropriate one for water governance in Scotland.

PART III: CHAPTER 6

SCOTTISH WATER LAW REFORM : NUTS AND BOLTS

Introduction

It is utterly trite to remark that water is a life-sustaining resource essential to the well-being of mankind. This has been recognised since classic formulations of the law held that water in its natural state was too precious to be subject to the vagaries of private ownership and hence should rather be vested in the state for the benefit of all. Water's uses in society are, of course wide and varied and include both municipal and industrial demand in respect of food security (irrigation), economic development, environmental and natural resource protection, mining and navigation.¹

On a global level, the fact can be pointed to that some 97% of the earth's surface is covered in water. The general view commonly taken as regards water supplies may hence be that such resources are abundant and the issue of scarcity is not one that should trouble society unduly. It should be understood, however, that some 94% of the world's water is non-accessible in that it is contained in the world's oceans. Moreover, much of the remainder is tied up in ice-caps or glaciers. "It has therefore been estimated that only 0.36% of the world's water contained in rivers, lakes and swamps is sufficiently accessible to be considered as a renewable fresh water resource".²

In fact increasing world water scarcity is a topic that has received much attention over recent years. World Bank statistics have identified approximately twenty countries that have been declared "chronically water scarce". Furthermore, with projected climate

¹ Moreover water uses are constantly shifting and needs may fluctuate with climatic change.

² G. Sherk, P. Wouters and S. Rochford, 'Water wars in the near future? Reconciling competing claims for the world's diminishing freshwater resources – the challenge of the new millennium' *CEPMLP On-line Journal*, vol 3, art 2, p1.

changes and increasing abstraction needs, it is estimated that by 2050, some 66 countries encompassing some two thirds of the world population will face between moderate to severe water shortages.³

In a statement made in July 2000 to the Scottish Grand Committee on behalf of the Department of International Development, George Foulkes MP remarked that "[m]any countries desperately need clearer legal frameworks for efficient and equitable allocation and effective use of water, and to ensure sustainable management of the water resource for future generations".⁴ While referring to the need for the imposition of such regimes in other (particularly developing) nations, Foulkes should perhaps have been looking closer to home. His observations may be salient in respect of the UK where the current legal regimes in places arguably do not in fact reflect such ideals. Scotland, in particular, is currently undergoing root-and-branch reforms in an effort to align herself with such an enlightened approach, with a radical shake up of the regulation of water rights to be implemented over the next decade or so.

Unlike the case in England and Wales, where for some time the common law has been altered by the imposition of a comprehensive licensing framework,⁵ the current situation in Scotland remains one largely governed by the common law rules of absolute

³ World Water Council, "From vision to action: organising the policy think tank" (1999), p 7.

⁴ G. Foulkes, *The Scottish Contribution to International Development* Statement to the Scottish Grand Committee, 10 July 2000 available at http://www.dundee.ac.uk/law/water/foulkes_speech.htm.

⁵ In England and Wales, subject to certain exceptions, no party may abstract water from any source except in pursuance of a relevant license granted by the water authority (the Environment Agency) (Water Act 1963 s 23; Water Resources Act 1991, s24(1)) and in relation to groundwater, a party may not begin or cause any other party to begin to construct a well, or borehole or work by which the water may be abstracted from the strata (1963 Act, s 23(2)(b)). The general restriction does not apply where the quantity of water does not exceed 5 cubic meters (1991 Act s 24(1)), nor does the abstraction of a quantity not exceeding 20 cubic meters fall within the terms of the restriction in so far as this has the consent of the Environment Agency. Nor will abstraction of underground water for domestic purposes fall within the terms of the restriction (in so far as the quantity abstracted does not exceed 20 cubic meters in any 24 hours – 1991 Act s 24). Changes to the regime will be forthcoming when the Water Act 2003 becomes operational.

dominium as regards groundwater and riparian rights in relation to water in defined channels.⁶ Scotland is a nation generally perceived to be blessed with (or perhaps blighted by) a surfeit of water. Indeed, concerns over flooding and arguments over the rights of proprietors to eject water onto adjacent lands have historically been far more common than disputes relating to water shortages.⁷ Official statistics of water resources bear out this experience. The Scottish Environment Protection Agency has noted that :

[I]f Scotland's available water resources are measured against a UK or European basis, Scotland is not short of water. Exploitable water resources are equivalent to 16,000 m³ per person per year in comparison with 2,090 m³ for the UK, 3,490 m³ for France and 2,156 m³ for Germany. As a consequence of the perception that water supplies are plentiful, powers to control abstractions of waters and to regulate use of rivers in Scotland are fragmentary and limited.⁸

Aside from a smattering of case-specific, statutory exceptions,⁹ the traditional common law position has been historically perceived as generally sufficient for regulating water use in Scotland.¹⁰ These common law rules are set to be overlain with a comprehensive statutory framework, however, in the aftermath of potentially radical reforms brought forth by the Scottish Executive's landmark piece of legislation, the Water Environment and Water Service (Scotland) Act 2003 (WEWS). This, *inter alia*, for the first time provides for the development of a comprehensive statutory licensing regime for water use in Scotland.¹¹

⁶ Discussed in chapter 3.

⁷ N. Whitty, 'Water Law Regimes' in Reid and Zimmerman (eds) *A History of Private Law in Scotland* (2000) at p 468. As was discussed in chapter 3 there is a general paucity of cases dealing with disputes over rights to water in Scotland.

⁸ Scottish Environmental Protection Agency, *State of the Environment, Water Quality Report : Part 1* (1996) available at http://www.sepa.org.uk/publications/state_of/1996waterquality/report/text/waterqual.htm.

⁹ There are a few notable exceptions including : water for public supply is abstracted under The Water Act 1908, s 17; water for hydro-electricity is abstracted under the Electricity Act 1989, sched. 5; limited controls powers exist under the Natural Heritage (Scotland) Act 1991 to control abstraction for irrigation and in cases of drought.

¹⁰ At least by implication. Case-law dealing with water rights has been few and far between in Scotland and there is relatively little academic discussion of such issues.

¹¹ Water provision being a devolved rather than 'reserved' issue under the Scotland Act 1998.

Problems engendered by the current regime

The main driver for reform has clearly been the requirement to bring Scottish water governance in line with provisions set out in the European Water Framework Directive.¹²

The current largely *laissez faire* water governance regime in Scotland is on any cursory analysis clearly not compatible with the provisions of the Directive. It would be misleading to suggest, however, that concerns about compatibility with European attempts at harmonisation are the only drivers for change. Recalling the positive features of water regimes discussed in chapter 5, collated from the various approaches found in different US state jurisdictions, it can be noted that currently some of those are prevalent in Scotland but not others. So, for example, the absolute dominium regime for percolating groundwater has encouraged water use to aid industrial development and the certainty inherent in the law has aided low transactional costs. The current law in this regard has not, however, protected in any way the correlative needs of others in society, nor has it reflected a need to view groundwater as a public resource, too precious for unfettered and perhaps wasteful, private exploitation.

Perhaps in the past – and the shortage of case-law regarding disputes over abstractions is testament to this fact – such concerns were not in practice pressing ones given the prevalence of water resources in Scotland. If it is indeed a case of ‘water, water, everywhere’ then as a fundamental assertion it can be stated that there seems little need for the law to interfere much in the realm of apportioning water rights (at least in terms of abstraction) beyond sanctioning a simple absolute dominium approach.

¹² Directive 2000/60/EC.

Despite the perception of Scotland as a perennially wet realm, localised incidents of water shortages and other identified environmental problems stemming from over-abstraction have, however, in recent times resulted in calls from commentators for abstractions to be controlled.¹³ In keeping with the perception of percolating groundwater as an abundant resource, the incumbent absolute dominium approach has allowed largely unlimited abstractions by landowners and, in particular, certain industrial sectors. This unfettered right of abstraction, while not always problematic, has begun to cause well documented problems in certain geographical areas of Scotland. SEPA, for example has reported a number of concerns, including: increasing abstraction of water from groundwater aquifers in Dumfries had lowered the water table both threatening a valuable drinking water resource and resulting in the drying out of connecting rivers; there are approximately 1000 hydro-energy 'off-takes' in Scotland which transfer water out of catchments to generating stations, many of which in fact remove all the water during low river flows; the combination of recent dry summers and increased irrigation has led to pressure on small east coast water burns; over abstraction of water for drinking from lochs or reservoirs may have significant impacts upon river ecology downstream. Examples include rapid changes from high to low flows in the River Leven downstream of the Loch Lomond barrage which leads to the stranding of migratory salmon fish and their spawning beds;¹⁴ The increasing phenomenon of bottled water (some 500 million litres are sold in the UK every year) which is almost always sourced from groundwater may also put further pressure on groundwater supplies.¹⁵

Although the current system in respect of water in defined channels is subject to restrictions on use engendered by riparian rights, the regime in Scotland has arguably, on

¹³ Including SEPA – see for example, SEPA : 'State of the Environment, Water Quality Report' : Part 1 (1996) available at

http://www.sepa.org.uk/publications/state_of_1996waterquality/repon/tx/watertext.htm

¹⁴ Some of these knock on effects have been discussed previously in chapter 5.

¹⁵ SEPA, *supra* n. 13.

occasion, failed to adequately protect correlative rights in practice and moreover, fails to restrict total amounts of water abstracted. In respect of surface waters (and underground waters) in defined channels, as noted in chapter three, riparian rights allow landowners to draw water freely for private use and primary purposes.¹⁶ While such largely minor abstractions are of limited concern, rights to undertake secondary (such as commercial) abstractions may also be acquired by prescription.¹⁷ When these rights are acquired, downstream riparians would not be able to object, regardless of their impact. As Hendry has noted "many such abstractors exist (particularly breweries, distilleries, fish farmers and agricultural users) and problems (in particular, localised over-abstraction) are recognised but not at present addressed",¹⁸

So it is against this backdrop of a regime which has increasingly been recognised as flawed that the current reforms are to take place. It is perhaps with some irony that the reforms are not the direct result of such concerns but rather stem from an agenda driven from within Europe. While change is needed, whether such a European agenda and its policy manifestations will result in an optimum regime for Scotland's waters is another matter. This chapter now proceeds to an analysis of the main provisions of the reforms. In the next chapter, the proposed regime is judged according to a set of criteria which it is submitted are in accordance with an optimum water regime for Scotland.

¹⁶ discussed in chapter 3.

¹⁷ Although the period of prescription is unclear WM Gordon, *Scottish Land Law*, 2nd ed (1999) at para 7.32 suggests such a right would be acquired in line with the 20 year negative prescription period.

¹⁸ S. Hendry, 'Enabling the framework - the Water Environment and Water Services' (Scotland) Act 2003 (2003) 14 *Water Law* 16 at p 20.

The European Framework Water Directive and the Water Environment and Water Service (Scotland) Act 2003.

As noted, WEWS is primarily a response to the need for the Scottish water regime to be compliant with the aims of the European Water Directive. Compatibility with the European measures is to be achieved by way of Ministerial orders made under powers conferred by WEWS. Prior to examining the WEWS provisions, it may be worthwhile first casting an eye over the main themes of the directive.

The Water Framework Directive

EC Directive 2000/60/EC was adopted in 2000 and entered into force on 22 December 2000. The Directive is an attempt to establish a harmonised framework throughout member states and is the consequence of a realisation that the pre-directive European water measures were too fragmented and while commonly targeted specific problems relative to water, ignored an overall strategic approach to water resources across Europe.¹⁹

The basic purpose of the directive is set out in Article 1 :

The purpose of this Directive is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater which:

1. prevents further deterioration and protects and enhances the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems;
2. promotes sustainable water use based on a long-term protection of available water sources;
3. aims at enhanced protection and improvement of the aquatic environment, inter alia, through specific measures for the progressive reduction of discharges, emissions and losses of priority substances and the cessation or phasing-out of discharges, emissions and losses of the priority hazardous substances;
4. ensures the progressive reduction of pollution of groundwater and prevents its further pollution, and

¹⁹ See A. Farmer, 'The EC Water Framework Directive : An Introduction' (2001) 12 *Water Law* 1.

5. contributes to mitigating the effects of floods and droughts.

At the heart of the directive's rationale is the concept of sustainability and to this end ensure that water resources in member states remain imbued with (or are altered to attain) certain characteristics deemed in accordance with such an aim. Under Article 4 of the Directive, therefore, member states are required to achieve what has been labelled in ecological terms 'good groundwater status' and 'good surface water status' by 2015. Waters will be classified by States in to one of five classes : 'high'; 'good'; 'fair'; 'poor' and 'bad'. Such a status will be determined by the worst of three separate assessments of biological, chemical and hydro-morphological status.²⁰ For the first time, the status of surface water will be assessed in terms of ecological quality as well as chemical quality, and the quality and quantity of both groundwater and surface water will be considered together.²¹ Clearly, therefore, the overarching aim of the directive and hence abstraction regimes that are manifest thereunder is to ensure the sustainability of the resource for the good of all in society. It hence can be flagged up at this stage that while such an aim has at its heart the notion that water is too precious to be left to the whim of private ownership, it may only be delivered at the cost of making inroads into current private property rights held in water. Similarly, the directive's aim may also, at times, be at odds with the goal of industrial development which may reap economic benefits for society.

There will be only limited exceptions to the requirement to meet good status in accordance with the timetable set out in the directive,²² for example, bodies of water which have been "heavily modified" by human activity (e.g. those that have been

²⁰ Annex V of the Act sets out various parameters which will determine how the ecological status of a given water body can be identified.

²¹ The Directive will also, *inter alia*, introduce a new, integrated approach to the control of pollution at source through the setting of emission limit values and of environmental quality standards for water.

²² ie by 2015.

artificially constructed or restricted). Further exceptions (whereunder members states may be given additional time to meet 'good status' detailed in article 4) may be possible on a variety of other grounds include technical problems, natural conditions and cost implications. Such exceptions may be important in that they may allow water regulation in Scotland room to manoeuvre and the consideration (at least in part) of a number of different water regulation regimes whereunder priorities other than preservation of the resource may be in the ascendancy.

The requirement in general throughout member states, however, is some sort of licensing regime for abstractions akin to that found in prior appropriative regimes common in western US states. To this end, in order to lay the groundwork for achieving the aims of the directive, Article 11 requires member states to establish:

controls over the abstraction of fresh surface water and groundwater and impoundment of fresh surface water, including a register or registers of water abstractions and a requirement of prior authorisation for abstractions and impoundments... Member States can exempt from these controls, abstractions or impoundments which have no significant impact on water status.

WEWS

The current abstraction regimes in Scotland in relation to both groundwater and surface water clearly do not live up to the requirements set out in article 11 of the directive. For one, given the largely unlicensed nature of water governance in Scotland, information on the extent of water resources *in situ* and abstractions thereof is patchy. Additionally, as alluded to above, there may be localised instances of over-abstraction heralding deleterious environmental and other consequences which presently are not controlled at all and hence, under the terms of the directive will require to be licensed. Provisions compatible with the terms of the directive are thus to be put in place under powers set

out in WEWS. The salient measure of the Act in this respect is section 20 which allows Ministers to put into place a regulatory framework to control, *inter alia*, abstractions of groundwater and from surface streams and impoundments of surface water.²³

The detail of the licensing provisions requires to be fleshed out through ministerial orders. Draft orders have now been forthcoming²⁴ and further information can be found in the discussion papers which preceded the Act²⁵ and information published by SEPA – the body to whom the role of enforcing the new regulatory licensing regime has been entrusted.

Basis for the regime

The abstraction licensing regime is part of a wide-ranging strategy based upon what has been termed a 'river basin management planning process'. This process is a requirement of the European water Directive²⁶ and will provide for the regulation of water-related activities which hold environmental consequences within a 'river basin district' in accordance with the aims of the planning process. River basin management planning "will... [thus] provide a reference point for all forms of planning that affect the water environment".²⁷ Importantly, 'joined up' thinking in terms of the water environment and the impact thereon of a myriad of different water uses is central to the planning process :

²³ An enabling provision.

²⁴ Scottish Executive Environment, Group *Controlled Activities Regulations : A Consultation* Consultation Paper, April 2004 (Paper 2004/8). See also Scottish Executive Environment Group, *Controlled Environment Activities Regulations: Revised Proposals for General Binding Rules* March 2005 (Paper 2005/4) and Scottish Executive Environment Group, *(Controlled Activities) (Scotland) Regulations 2004 : Draft Regulations : Analysis of Responses to the Scottish Executive* 11th March 2005 at <http://www.scotland.gov.uk/library5/environment/rwecar-07.asp>.

²⁵ cited below.

²⁶ Article 13.

²⁷ Scottish Executive Environment Group, *The Future of Scotland's Waters - Proposals for Legislation* Feb 2002. (Paper 2002/4), para 1.2. Under s 3(1) of the Act the 'water environment' extends to "all surface water ground water and 'wetlands'". S 3(5) defines wetlands as "an area of ground the ecological, chemical and hydrological characteristics of which are attributable to frequent inundation or saturation by water and which is directly dependent, with regard to its water need on a body of groundwater or a body of surface water".

"[a] key feature of the system will be a spatial analysis of all human impacts on the water environment that recognises the interconnections between all the elements in the water cycle – rivers, lochs, estuaries, coastal waters and water under the ground".²⁸ So, in this way, unlike the present common law regime, decisions over water usage rights will attempt to take into account the interrelationship between groundwater and surface streams and the impact of various water activities over both water resources and other water activities. In accordance with the goals of the Water Framework Directive, the overall aim of the new regime is to "help drive forward ... sustainability... [and] integrate environmental priorities with social and economic implications... [and achieve] the best possible balance between the protection of the water environment and those who depend upon it for their prosperity and quality of life".²⁹ Such a balancing act is a perennially difficult task and building up a sufficient knowledge base of likely environmental impacts set against probable economic fall-outs for any proposed water use is likely to cause stark difficulties. While the state of water resources *in situ* may not be the 'occult' it was at the time of early court decisions, the occult now perhaps lies in the lack of knowledge which exists in relation to the impacts – both environmental and economic – of water use.³⁰

It seems clear therefore that the current benefit of low transactional costs which the incumbent common law regime in Scotland exhibits, would be largely lost under the reforms. Tentative economic analyses which shall form the basis of the River Basin Management Processes required to meet the ecological requirements of the Directive have already been undertaken and these are discussed later in the chapter. An important point to note here is that abstractions are not to be considered in isolation – as it may have been in the past – under the new regime. Rather, abstractions are to be considered

²⁸ *The Future of Scotland's Waters*, *supra* n. 27, para 1.2.

²⁹ *ibid.*

³⁰ These issues are taken up in chapter 7.

as one composite part of a wide-reaching river basin planning process which will take into account the repercussions of a whole range of water uses and the relationships between such uses.

The River Basin

The basic building block of the new regime will be the river basin – the tract of land from which surface water eventually flows into the sea (and all connecting groundwaters).³¹ Given the large number of significant river basins arising naturally throughout Scotland, it was proposed to set out river basin plans (RBP's) on a district basis comprising groups of river basins and their associated groundwaters. This would facilitate the establishment of a large scale, consistent, strategic plan for each RBD. While the establishment of three RBD's was thus initially mooted, after a mixed response from consultees (many of whom viewed that at such a large scale there was little added value to be had in three rather than one basin district) the Executive's preferred option is now the establishment of one RBD.³² In what may seem a somewhat illogical omission, the establishment of one RBD has not been conclusively determined yet in the Act itself although the intention was clearly stated after the consultation exercise.³³

Given that water resources are no respecter of artificial man-made boundaries, special recognition is made in the Act of the fact that separate bi-lateral arrangements will require to be made in respect of the cross-border basins at the Tweed, Tyne and Solway. This should not cause intractable difficulties as the water regime in England and Wales is

³¹ For a general discussion and critique of the river basin concept see L. Tecliff 'The River Basin Concept and Climate Change' (1991) 8 *Pace Envtl. L. Rev.* 355.

³² *The Future of Scotland's Water*, *supra* n. 27 para 1.4.

³³ s 4 of the Act merely stipulates that Ministers will establish one or more RBD's. This lack of certainty within the Act is a common feature of this somewhat bare enabling provision.

undergoing similar reforms in an effort to meet the aims of the Directive and will require to put in place similar RBD management plans which should intertwine with the Scottish approach reasonably well.

It should in fact be noted that in establishing RBD's, Scotland is at a disadvantage compared to England and Wales³⁴ as unlike its southern counterpart there has previously been no statutory framework in place to facilitate such a strategic approach. In terms of the regime change in respect of water, Scotland therefore is facing more radical changes than England and hence the new system may entail additional regulatory costs which will require to be borne by society and, in particular, water users.

Public participation is a central feature of sustainable development³⁵ and hence the RBD plan shall be the product of a consultation between the regulator and interested parties.³⁶ In accordance with article 14 of the Directive, certain procedures for consultation must be followed including : a timetable and work programme for the development of the RBD must be made public 3 years prior to its operation; an interim overview of salient water issues is to be made public 2 years prior to the operation of the RBD; draft copies of the plan are to be made public at least a year prior to implementation and there should be at least a 6 month window for the public to comment on the plan. As there is to be only one RBD for the whole of Scotland, recognising the need to involve participation at a local level and engender the 'ownership' of local stakeholders of the consultation processes for establishing RBD plans, the original legislative proposals gave SEPA the power to establish sub-RBD plans. To ensure that such meaningful local participation can take place, however, sub river basin district plans - which will feed into the RBD plan

³⁴ The Environment Act 1995, s 4(2) gave the (English) Environment Agency powers to establish strategic water resource planning management.

³⁵ Principle 10 of the Rio Declaration, UN Conference on Environment and Development, Rio 1992.

³⁶ Although there is no requirement to involve the general public directly. This potential weakness is discussed in chapter 7.

- are now mandatory under s 15 of WEWS. Clearly engendering local 'ownership' and participation will be central in getting parties on board with the reforms. This is particularly so, when, as noted below, many of these parties will require to bear significant costs in the aftermath of a new, more restrictive regime in relation to abstraction and impoundments. As the proposed regime will upset the existing balance of private water rights in water, such local 'ownership' may be necessary to assuage those whose rights are adversely impacted upon thereby.³⁷

The proposed licensing regime

Under the Scottish Executive's plans, all water-related activities which may impose an environmental risk (including abstraction of groundwater and surface water and impoundments of surface water) may be subject to one of a number of different levels of regulatory requirement. Gauging when and to what extent environmental risks will follow an abstraction or impoundment may be no easy task and expensive to determine. With that point firmly in mind, the different regulatory requirements include:

- Water use licences
- General binding rules (GBR's)
- Simple registration
- Management agreements³⁸

³⁷ This point is picked up in chapter 7.

³⁸ *The Future of Scotland's Waters*, *supra* n. 27 at para 3.9.

Decisions as to the nature of regulation required will be taken by the regulator at a local level by taking into account impacts on the local environment by the proposed activity.³⁹ For activities within the River Basin District (including abstractions and impoundments) that pose the greatest environmental risk, the highest form of regulation, water use licences will be required. The licences will be 'activity and site specific' in the sense that conditions attached thereto will be tailored to local conditions.⁴⁰ It is clearly thus an important feature of the proposed regime that decisions in respect of licences are taken at a local level and that the licensor can take into account the environmental consequences of the abstraction as against its potential economic and social benefits.⁴¹ The problem with taking such decisions as these is to ensure that judgements to either grant or refuse a licence are informed. It may well be that in today's technological society it is possible to be aware to a far greater degree than previously about water resources (particularly groundwater) and the link between groundwater and surface water flows is far better understood (although such determination may be costly). What remains, however, is the gap in knowledge as to the impact that refusal to grant licences for abstraction may hold for society – particularly where the attainment of 'good water status' in accordance with the Directive may be to the detriment of other (particularly economic) advantages which society may benefit from.

³⁹ *ibid* at para 3.10.

⁴⁰ *The Future of Scotland's Waters*, *supra* n. 27 at para 3.11. Although standard licence terms are also likely to be formulated.

⁴¹ Although discretion to side-step sustainability may be limited as the key aim of the Water Directive, however, is one which in general places sustainability of the resource ahead of other policy goals in terms of water governance.

Despite initial proposals mooted to allow abstractions below 20 cubic metres per day to remain unlicensed,⁴² the Executive seemed keen not to adopt this rule and the regulator was to be given discretion to determine when licences would be required at a local level.⁴³ This meant that many small abstractions – which may currently be considered to be of negligible risk would be caught up within the regime at one level or another, bringing with it regulatory costs that, under the Scottish Executive proposals, would be borne by the abstractor. The intention in this respect appears to have again changed of late, however. Despite concerns regarding the arbitrary nature of attributing certain regulatory requirements to certain levels of abstraction on a blanket basis, abstractions below 10 cubic meters per day are now set to be subject to GBR's.^{43a}

Under WEWS, any abstraction, whatever the size, will in general only fall within the ambit of the regime where it involves “the doing of anything whereby any water is removed *by mechanical means*” (my emphasis).⁴⁴ This would mean that manual forms of abstraction (eg by bucket) or abstraction caused by either people or livestock drinking straight from rivers and wells would not be covered the regime. Although it is unlikely that such abstractions would be significant, there may be potential difficulties in localised areas where if a drought exists, such manual abstraction on any level could not be prohibited or controlled. It may at first blush appear that non-mechanical methods of abstractions such as mill lade activity which may perhaps hold significant repercussions

⁴² Set out in the Scottish Executive Consultation Paper, *Rivers, Lochs, Coasts: The Future of Scotland's Waters* (2001). This limit is currently utilised in England and Wales.

⁴³ The set limit was criticised on various grounds by respondents to the Executive's consultation paper including that it was an arbitrary figure; that it was too low; and by contrast that it was too high – see A. Farmer & C. Monkhouse, *Analysis of Responses to 'Rivers, Lochs, Coasts: The Future of Scotland's Waters': Final report to the Scottish Executive Institute for European Policy* (January 2002) chapter 7.

^{43a} Scottish Executive Environment Group, *Controlled Environment Activities Regulations: Revised Proposals for General Binding Rules* *supra* n. 24 at p 5.

⁴⁴ S 20(6).

for water levels might therefore fall through the net. It is important to note, however, that such works would fall into the category of impoundments of surface waters which are also subject to the new regime. Impoundments are defined in s 20 of WEWS as “(a) any dam, weir or other works in the body of water by which water may be impounded; (b) any works diverting the flow of water in the body of water in connection with the construction or alteration of any dam, weir or other works falling within paragraph (a)”. Moreover the Executive has proposed that extraction by gravity fall within the remit of the regime.^{44a}

It should be noted that the current English licensing regime also exempts certain activities from control including small ‘one off’ quantities⁴⁵ and abstractions for navigation and harbour authorities.⁴⁶ While the majority of these exemptions are non-contentious, one potentially problematic exempt activity that has been identified is trickle irrigation – a method of land drainage.⁴⁷ It has been argued that this process was exempt from the regulations in order to ensure that obstacles were removed from the use of what was perceived as an effective and efficient method of land drainage.⁴⁸ Use of this unregulated process, however, has risen exponentially in recent years bringing with it well documented environmental problems. The most recent English figures suggest a growth of trickle irrigation abstraction from 1,330 ha in 1987 to 4,120 ha in 1995.⁴⁹ For Scotland, irrigators may find their current activities restricted in particularly sensitive geographical areas.

^{44a} *Controlled Activities Regulations*, *supra* n.21 at para 1.5.

⁴⁵ 1991 Act s 27.

⁴⁶ 1991 Act s 26.

⁴⁷ s 29(5).

⁴⁸ R. Cunningham, ‘Reform of water resource control in England and Wales’ (2002) 13 *Water Law* 35 at p 38.

⁴⁹ Ministry of Agriculture, Fisheries and Food, *Survey of irrigation of outdoor crops in 1995* (York : Governmental Statistical Service, 1996).

Licence conditions

SEPA will be given powers to impose a wide range of conditions to licences. It is anticipated that full licences will be required where it is necessary to control site specific impacts of any proposed water use. SEPA have indicated that in their view, full licences would be required only in a minority of cases.⁵⁰ In relation to abstraction and impoundments, a list of non-exhaustive licence conditions⁵¹ has already been identified by the Scottish Executive and include :

- Requirements to follow best practice and utilise best technology
- Reporting requirements
- Conservation measures to facilitate long-term exploitation of the resource
- Code of practice compliance
- Restricting licences to certain identified users
- Restricting the duration of a licence where that is deemed necessary to protect the environment.⁵²

These final two conditions may in practice prove the most controversial in that the absence of absolute, identifiable property rights in water resources may discourage what may be heavy levels of investment from industry. Moreover, such restrictions may discourage the trading of licences, which has been identified as one way of ensuring the most efficient use of scarce resources such as water. The issue of trading in general is discussed under 'efficiency' in chapter 7. The standard licence conditions should apply to all licences in relation to each controlled activity. It is argued that this consistency across the board should assist the protection of the water environment whilst at the same

⁵⁰ Available at <http://www.sepa.org.uk/wfd/regulation.htm>

⁵¹ that may be augmented by specific local licence conditions.

⁵² *Controlled Activities Regulations*, *supra* n. 24 at para 3.15.

time provide some semblance of the certainty in respect of water licences that industry requires to make informed, economically-viable, business decisions.⁵³

General Binding Rules

Following on from this, a step down the regulatory ladder from water use licences can be found in the guise of 'General Binding Rules (GBR's)'. GBR's are sets of publicised mandatory rules that would apply to particular controlled activities "where the environmental impacts are predictable and mitigation measures can be defined in a common form".⁵⁴ Anyone carrying out this sort of activity would be bound to act in accordance with the GBR. Clearly, much work will require to be done in ascertaining the 'predictable' environmental impacts that may emanate from particular uses when currently so little is known about the possible repercussions of many current water-related activities. Despite the fact that GBR's were initially seen as the 2nd most onerous form of regulation behind licences, this may no longer be the case as the latest proposals from the Executive indicate a desire to dispense with the need for registration of such activities; rather parties engaged in such works must simply comply with the provisions of the GBR's.^{54a} This may be seen as surprising, particularly in the context of the current lack of information regarding current water use activities and the need to remain aware of these in case of changing environmental or social needs. This move may be seen as a response to concerns voiced from industry about the onerous nature of complying with the regime.

⁵³ *ibid* at para 3.17.

⁵⁴ *ibid* at para 3.20.

^{54a} Scottish Executive Environment Group, *Controlled Environment Activities Regulations: Revised Proposals for General Binding Rules* *supra* n. 24. A list of activities relevant to GBR's and proposed prescriptive rules in this regard can be found in this report.

Simple registration

At the bottom of the original regulatory ladder is simple registration. In respect of activities that are deemed to entail low environmental risk, mere notification of any proposed action would be required prior to it taking place and a licence or compliance with GBR's would not be required. Registration will allow the regulator to keep up to date statistics on all water activities thus building up a full picture of current and possible future environmental impacts.⁵⁵ At the time of writing there appears some confusion surrounding the relationship between simple registration and GBR's. Given that as GBR's look set to entail no registration, simple registration may now be seen as the more onerous of the two regulatory measures.

The Payment regime

Under article 9 of the Water Directive, member states are required to "take account of the principle" of recovery of the costs of water services. In Scotland, there will hence be charges at all levels of regulation which will require to be borne by the abstractors. To give an example of a regime currently in practice, for England and Wales, a fixed application processing fee is charged for the regulator's work (in this case the Environment Agency). In addition, most licence holders pay an annual charge based on the amount of water licensed for extraction, the source of the water, the time of the year the water is used and the purpose for which the water is used. The actual charges vary considerably, but typically range from £7 to £18 per mega litre abstracted per annum.

⁵⁵ *ibid* at para 3.20-21.

The charge is currently for the licensed volume rather than the actual extracted volume, so there is currently no incentive in England to take less water than is allowed by the licence – an issue which may not be conducive to the conservation of supplies. It may be prudent therefore to ensure that charges in Scotland are based upon actual water withdrawn rather than the maximum that could be appropriated under the licence terms.

While the detail of the Scottish regime has not yet been fleshed out, there is clearly a need to investigate the extent that charging might not merely cover the administration costs of the regulator but also places a value on water itself and hence encourage the most efficient use. Indeed the directive requires that such an approach be in place by 2010.⁵⁶ While such a move may bring about conservation of the resource, it could further be perceived as an assault on current private property rights in water and might possibly act as a barrier to exploitation of water resources for the economic well-being of society. Moreover, whether in Scotland a regulatory regime for water requires to focus to such an extent on sustainability issues is debatable. These issues are discussed in chapter 7.

Management agreements

One of the problems that was identified in chapter 5 concerned the fact that a prior appropriation regime may result in secondary users going without in times of a drought. Leaving aside the issue of time-limited licences for the time being, in an effort to combat such problems where there is an anticipated shortage of available resources, WEWS makes provision for the adoption of management agreements whereunder all potential

⁵⁶ Article 9. Although such an approach can be ignored if it does not compromise the general aims of the directive.

users would forge some sort of contract on how to divide the scarce resource in the most efficient and equitable manner. As the Executive in their proposals state

[w]e believe that management agreements will also be a useful addition to the control regimes. These would be appropriate where a number of users in a distinct geographical area could co-ordinate their activities to better protect the water environment and their own interests. For example, a management agreement could provide a number of abstractors from the same water body with an opportunity to collaborate with each other and the regulator to design and employ a locally appropriate means of protecting the water resource. Management agreements would depend upon the consent of all parties. The agreement would form part of the water use licence for each party to the agreement.⁵⁷

This sort of approach is not unlike the current position as regards unitisation agreements which are forged between parties drilling for oil under UK offshore production licences. As the discussion relating to hydrocarbons in chapter 4 detailed, more efficient means of exploiting hydrocarbons offshore are mandated by the Secretary of State (SS) to circumvent the deleterious consequences of competitive drilling. While the SS has compulsory powers in this regard, they are in practice never invoked and rather parties have sought to forge their own agreements to avoid the imposition of a such a scheme by the state. Parties thus have a vested interest in forging an equitable and efficient agreement. It may be speculated that although in the water licensing context, the consent of all parties is required to enforce such management agreements, parties are similarly unlikely to be recalcitrant in so doing to ensure that overly restrictive licence conditions are not imposed by the regulator. It seems plausible that in such cases parties might establish, *inter se*, some sort of correlative rights system akin to that found in certain eastern US States whereunder the respective share of authorised volume of abstraction may be tied to the size of land owned.

⁵⁷ *The Future for Scotland's Waters*, *supra* n. 27 at para 3.18.

The seismic shift in water governance approach that WFWS presages is primarily one that enables water resources to be allocated in respect of the uses of value to society but in a way that protects the water-related environment. Conservation and sustainability must walk hand in hand with the need to countenance the requirements of industry. Clearly advancements in hydrology, for example, in charting the extent of current river flows and groundwater resources, the growing understanding of the relationship between groundwater and surface resources and increasing knowledge of the deleterious consequences of over-abstraction facilitate such a two handed approach.

This new basis is of course a far cry from the (still current) common law in relation to groundwater which was underpinned by a both an implicit view that water was part of the land⁵⁸ and hence subject to the control of the landowner, and further that the unfettered right to drain water upon one's own land was necessary in that to hold otherwise would hinder industry and proper exploitation of the resource. Conservation has been markedly absent from early common law cases relating to groundwater and the issue of public utility was generally seen as best furthered by encouraging industrial development. In respect of water in defined streams, at least under the common law, there emerged a realisation that the resource was too precious to be the subject of the ownership of riparians and that such natural resources were *res communes* and subject to a controlled right to exploit which countenanced at least the needs to other riparians. This system, however, is not one which countenances the needs of others in society and does little to avert wasteful or environmentally unfriendly practices. The post-WFWS regime at least in certain cases, transfers the balancing act of compering rights for water in defined channels from the courts to the regulator and moreover extends such an

⁵⁸ Although as discussed in chapter three there are mixed viewpoints on this.

approach to groundwaters. Furthermore, into this balancing act have been thrust issues of public utility.

The current position as regards ownership of waters will not change in the post-WEWS era⁵⁹ but many potential users will require to apply for a relevant licence or comply with other regulatory requirements in the wider interest to abstract or impound the resource and where such a permission is granted, users will require to pay for this privilege.

In terms of ascertaining impacts of different water uses, it has been argued that the laudable aim of treating surface water and groundwater as component parts in a single water system which is deemed central to the approach to River Basin Management Planning that will be taken by SEPA, may in practice be no more than a fanciful notion. For example, in the recent SEPA consultation exercise, Scottish Water commented that

the desire to resolve the scientific difficulties of treating groundwater, wetlands and surface water as component parts of a single water system will require extensive and costly research [and] may not be achievable. This goal would require extensive large-scale monitoring, increase [in] the complexity of models and therefore may not be justified by the level of improved understanding.⁶⁰

This point may resonate generally across any licensing regime which seeks to establish priorities for those uses which are deemed as beneficial. The central point of an appropriative, right-based regime is that regulators require to make choices which are informed. Decisions in this regard taken by SEPA may at times fall short of being anywhere near fully informed and thus for example, in any water shortage context, the ability of the system to establish any sort of hierarchy of competing uses in beneficial terms may be placed in question.

⁵⁹ Although as noted in chapter three the issue of ownership at common law is not particularly clear. This issue is discussed further in chapter 7 in relation to HRA compatibility.

⁶⁰ Scottish Environmental protection Agency, *Water Framework Directive : Technical Annexes 2 and 5 Consultation Summary of Responses* March 2003 at para 3.4.1.

As noted, a key difficulty with the imposition of a licence-based appropriative regime is that although it may reap environmental benefits for society, it imposes costs upon water users which may make inroads into previously held, private property rights in the resource. In order to inform the legislative process leading up to the enactment of WEWS, the Scottish Executive commissioned a cost-benefit analysis of implementation of the provisions of the European Water Directive in Scotland.⁶¹ The imposition of controls over abstraction of both groundwater and surface waters is of course but one part of compliance with the directive. The discussion here reviews only some of the projected costs and benefits which may emanate from a shift from the largely unfettered common law position relating to abstractions.

The general aim of the report is to produce a set of assumptions relative to both the current or 'present day' environmental situation relative to the water environment in Scotland and also projected environmental improvements that might emanate from implementing the Directive from 2001 to 2040. The research also attempts to measure the costs of imposition of a compliance regime (including abstraction controls) on specific business sectors and society in general.⁶²

A major plank of the study is the 'status-gap assessment': an analysis of the cost-benefit differences between the 'business as usual case' - a hypothetical case scenario outlining the environmental situation if the Directive were not to be implemented - and the situation after the Directive's aims have been fully implemented. This will then provide the basis for a cost-benefit analysis of the effects of implementing the directive.

⁶¹ K. Andrews, *The Future for Scotland's Waters : Analysis of Costs and Benefits : Costs and Benefits of Implementation of the EC Water Framework Directive (2000/60/EC) In Scotland* Final Report to the Scottish Executive June 2002.

⁶² *ibid* at para 1.3.

It should be noted of course that the analysis is speculative. First, determining what the current environmental state of all waters in Scotland is at present and therefore how water activities would have to be controlled to ensure 'good status' of such waters under the terms of the water directive is no easy task. For example, even the authors of the report conceded that there were difficulties in establishing the present environmental situation and 'business as usual case' as regards groundwater ('where very little information is known in Scotland')⁶³ and hydro-morphological impacts of abstraction ('where limited data is available').⁶⁴ As discussed in chapter three, rights in relation to groundwater long remained out of reach of the clutches of the law and any well-defined legal rules at least in part because of its 'occult' and hidden status. Clearly in Scotland, groundwater resources to some extent have remained a hidden treasure. This hidden status itself also stems from the fact that the law relating to groundwater use was largely unregulated. Groundwater knowledge manifestly requires to be improved in Scotland if an effective and informed regime is to be put in place.

A number of current water uses are identified in the research which may currently hold negative repercussions for the water environment and hence will require to be controlled. Potentially problematic industry sectors flagged up include agricultural irrigation, distillers, pulp and paper mills, hydro-power plants and water services. At the moment, it is speculated that the lack of adequate controls over the abstraction activities in these industry areas would be likely to further deteriorate water status in the future – in relation to both water quantity and quality. Hence, controls are likely to be enforced in these industrial sectors to limit or reduce their abstraction activities in accordance with the aims of the directive. Such controls will necessarily impose costs on these industry sectors to reform their own activities in accordance with a more limited right to abstract

⁶³ *ibid* at para 3.1.

⁶⁴ *ibid*.

(or impound) water.⁶⁵ The report then proceeds to the crux of the issue: an estimation of these costs as opposed to the benefits that might be gleaned from compliance with the Directive's aims.

So, for example, irrigators would require to reduce abstractions on certain identified areas of land where the catchment is particularly sensitive to irrigation. The report estimates the cost of this to Scottish farmers at around an average of £9,000 each per year, at a total cost for the industry of some c.£1.6 million per annum. Similarly, pulp and paper mill operators may face an outlay of £5 million for increased storage costs emanating from reduced abstraction; hydroelectrical providers may face an annual cumulative bill of around £15 million and the water industry some £95 million. An as yet unknown cost will need to be borne by distillers.⁶⁶

Clearly then there may be significant costs for industry as a result of the shift from the current common law water regime to a restrictive licensing system. For many of those active in these industry sectors, in particular farming, which has struggled in economic terms in recent times, such a prognosis will make uncomfortable reading. Such costs, it might be argued, may be legitimately borne by industry in pursuance of a sustainable, environmentally sound water environment. The problem for policy makers, and indeed for regulators in any appropriative regime, will lie in clearly identifying these benefits and placing some quantifiable value on them. Arguably, however, some of these potential benefits to society are quantifiable, at least on a speculative basis. While the report concedes that clearly identifying potential benefits to such water bodies as groundwater and wetlands may remain out of reach for the time being,⁶⁷ the authors at least offer

⁶⁵ Additionally administrative costs will result from applying for a licence.

⁶⁶ K. Andrews, *supra* n. 61 at table 4.22 for a breakdown of all the projected costs.

⁶⁷ at least for the time being.

some tentative, partial, monetary benefits in respect of *inter alia* rivers and coasts.⁶⁸ The measurement criteria appear somewhat subjective and perhaps difficult to quantify. Nonetheless improvements to Scottish rivers (for residents) brought about by the imposition of water-use controls in accordance with the aims of the directive are evaluated by reference to increasing quality in river ecology, bank-side vegetation and aesthetics and have been provisionally measured as bringing benefits that can be quantified as being between £120 and £262 million per annum, while benefits to anglers through sounder ecological environments are estimated in the somewhat wide range of between £10 million and £58 million. The above analysis raises questions as to how costs of complying with the regime should be borne across society, given that those who benefit most from the imposition of controls may not be those who will suffer detriment as a result of compliance.

As alluded to above, derogations from meeting the aims of the Water Directive may be allowed in certain circumstances, particularly where technical or cost problems make timely compliance unfeasible. Clearly the existence of such derogations may afford certain industry sectors an opportunity to seek the delay of any abstraction restrictions that may prove costly to their businesses. The flexibility inherent in the directive in this regard raises some interesting issues about furthering economic interests at the expense of environmental objectives while keeping within the spirit of the European measures.

Time limited licences

As noted in chapter 5, a prior appropriation regime (whether one based on a licensing system or not) may be problematic in that although it ensures that scarce resources are

⁶⁸ K. Andrews, *supra* n. 61 at para 5.3.

allocated for beneficial uses, in times of shortages secondary users may simply go without. It may therefore be prudent to ensure that licences are not granted in perpetuity and may be revoked or at least varied by the state in times of drought, if seen to be causing other environmental damage of some sort or where perhaps more beneficial uses of the water are proposed.⁶⁹ It has been reported by the Scottish Executive that in general, abstraction licences granted to industry will not be time limited, although it has been suggested that there may be some exceptions to this.⁷⁰

The Licence of Right Legacy in England & Wales

While from an industry perspective there may be a sound reasoning behind the granting of licences for indefinite periods of time, policy makers in Scotland might learn from the negative legacy that has been left behind as a result of the largely unfettered early licences – termed ‘Licences of Right’ (LORs) – that were traditionally granted south of the border. Despite the well-established licensing regime⁷¹ for abstractions and impoundments of water in England, this has not, to date, curbed escalating drought problems which have been experienced south of the border. The Environment Agency is cognisant of such difficulties:

[I]n some areas of the UK, current abstraction practices are causing concern for the environment. For example, much of southern England has little surplus surface water available during the summer. If abstraction increases beyond current levels, there could

⁶⁹ In such a circumstance, SEPA may find it prudent to suggest to would-be abstractors that they forge some sort of management agreement – the possibility of which is included in the regulations (*Controlled Activities Regulations*, *supra* n. 24 at para 1.11).

⁷⁰ *Controlled Activities Regulations*, *supra* n. 24 at para 1.10.

⁷¹ which stems back to the 1945 Water Act.

be a harmful effect on river flows and wetlands. In some cases existing licences are already causing environmental damage or would cause damage if they were used fully⁷²

These concerns are not new and since the early 1990's there has been increasing concern voiced that a number of important wetland sites have been affected by low flows or decreasing water levels as a result of the abstraction of water from surface and groundwater resources. In 1995, for example, England and Wales "suffered what was for many the worst drought in living memory".⁷³ This prompted a report highlighting widespread drought concerns published by a group of voluntary conservation organisations.⁷⁴ Then in 1999 the Environment Agency and English Nature jointly published a report which considered some 358 wetland sites and discussed a number of environmental and other problems caused by over-abstraction.⁷⁵

The main difficulty identified as dogging the current English system stems from those abstractions that took place prior to the 1963 Water Act and hence were authorised as 'Licences of Right' (LoR). These licences were initially granted under the 1945 Water Act and could be renewed under the 1963 Act within a five year period of its implementation and based on the previous three years' usage. Such LoR's were issued without any restrictions. According to Cunningham :

[t]he grandfathering of existing abstractions as LoR implicitly assumed practices, that had gone unchallenged under the common law were not impacting other legitimate users and were therefore acceptable... While this approach may seem pragmatic, it clearly place[d] an incentive [for] abstractors to inflate their claims on entry so as to allow for growth, uncertainty, monopolising a valuable resource and thus restricting entry into a market.⁷⁶

⁷² The Environment Agency, *Environment Facts and Figures* : available at http://www.environment-agency.gov.uk/yourenv/eff/water/213872/609264/?version=1&lang=_e

⁷³ R. Cunningham, *supra* n. 48 at p 36.

⁷⁴ The Wildlife & Countryside Link, *High and Dry* (1996).

⁷⁵ English Nature, *Water Abstraction and Sites of Special Scientific Interest in England* (2000).

⁷⁶ R. Cunningham, *supra* n. 48 at p 36.

The problems in England and Wales in this respect were compounded by the fact that initially licences granted in pursuance of the 1945 Act would have been fairly easy to obtain. Under the 1945 Act the issues of water quantity and quality were low priorities; that Act was more concerned with issues such as the wastage of water, excavating for metals and water for farming purposes. Perhaps echoing traditional common law approaches to water use (and for that matter exploitation of other migratory things), as Murillo *et al* have noted "licences [under the 1945 Act] were almost certainly granted using different criteria ie. producing as much steel, coal, gravel, food, etc., as possible to aid post-war recovery. Water quality and, to an extent, quantity were far lower priorities".⁷⁷

While the peculiarities of the English LoR regime are not present in Scotland, they provide an example of the problems that can be caused by the granting of licences in perpetuity and should sharpen the resolve of regulators to ensure that the Scottish regime is one imbued by flexibility to ensure compliance with environmental expectations set out in the European Water Directive. In a time when it has been identified that the extent of water resources *in situ* and the full environmental and economic consequences of multifarious water uses remain unclear, it may be that current industrial abstractors would seek to carry on their existing pre-WEWS levels of abstraction and point to the limited (or at least little known) environmental impacts of their activities. In light of this inherent uncertainty and the political pressures that such industries may seek to exert on policy makers in this regard, it would seem best to ensure that abstraction rights which may transpire to be undesirable or excessive can be varied or revoked by the regulator at a later date. Moreover, if a licence were to be granted for a fixed period of time, subject to renewal, it may follow that wary abstractors would seek to ensure that their abstraction

⁷⁷ A. Murillo, J. Bough & H. Cook, 'Groundwater Abstraction and Legislative Control' (1999) 10 *Water Law* 130 at p 135.

activities do not damage the environment and thus further provides an incentive for abstractors to collaborate with regulators to explore new ways of exploiting the resource in the most efficient way.⁷⁸

Overview

This chapter has mapped out the proposed new licensing regime for abstractions and impoundments of water resources in Scotland. The proposals are to be phased in from April 2005 but full compliance with the aims of the water directive is not required until 2012.⁷⁹ There is a general perception that Scotland is 'ahead of the game' in this regard, in particular, when compared to England and Wales.⁸⁰ At least, in so far as abstractions and impoundments of water are concerned, however, Scotland's starting position lies someway behind its English counterpart's and the above analysis has identified a number of potential hurdles to be surmounted. Beyond these teething problems, the next chapter analysis the post-WEWS regime in Scotland and evaluates the extent that it is an optimum model for water governance in Scotland.

⁷⁸ R. Cunningham, *supra* n. 48 at p 40.

⁷⁹ *Controlled Activities Regulations*, *supra* n. 24

⁸⁰ ENDS report 351, *Scotland gets ahead on new water environment controls* (April 2004).

CHAPTER 7

SCOTTISH WATER LAW : ANALYSIS OF REGIME CHANGE

Introduction

While the preceding chapter focused on the nuts and bolts of the new regime in Scotland and the rationale behind its imposition, this chapter evaluates the post-WEWS regime for water governance in Scotland against a set of relevant criteria. The criteria that the regime can be judged against have been identified from policy discussions inherent in case-law in the UK relating to migratory things, approaches to water governance in other jurisdictions (particularly the USA), examples of international law and practice and from relevant academic literature. Although the following criteria will doubtless not be exhaustive, it is submitted that they are relevant policy markers of an optimum water governance system by which the new regime for water allocation in Scotland may be judged. Each issue is examined in turn and the extent that the post-WEWS regime in Scotland might meet such aims is discussed. It should be noted that the criteria identified are germane at three levels : the overarching question of the type of regime which should be selected to control water use; the detailed substantive rules which sit therein; and also the procedural rules which seek to ensure administration, monitoring and compliance with regard to the regime.¹

¹ As Wouters notes "in essence there are four key points that must be addressed [by a water governance regime]...:(i) legal entitlement (what is the scope of the resource and who is entitled to use it?); (ii) framework for allocation (where all needs cannot be met, who is entitled to what quantity or quality of the resource?); (iii) institutional mechanisms including governance issues (who is responsible for overseeing the implementation or overseeing the implementation of the laws?), and (iv) compliance verification, dispute avoidance and resolution (how are rights and obligations enforced?)" – P. Wouters, *Water Law : Achieving Equitable and Sustainable Use of Water Resources (Guest Editor's Note)* Papers Presented at the Dundee Water Law and Policy Seminar (July 2000) available at <http://www.dundee.ac.uk/law/iwlr/ Documents/Research/TWLR1%20Team/Wouters/iwra.pdf>.

It should also be borne in mind that it may be difficult to ascertain an objective 'one size fits all' regime that may be relevant for all water governance systems across the globe.² This is because an additional factor which feeds into the identified criteria is that of climatic or ecological appropriateness. This factor may dictate what appropriate balance requires to be struck between competing aims and is discussed at the end of the chapter. With this firmly in mind, it is submitted that an optimum regime should have the following characteristics :

- Efficiency³
- Encouragement and protection of beneficial uses in society
- Legality

While the above criteria may appear sparse, it is submitted that all other markers of an optimum regime will feed into one or more of those listed above. So for example, as will be discussed below, an appropriate regime would clearly be one that could ensure compliance thereto and resolve disputes. The ability or otherwise of a regime to meet these objectives would play an important role in ensuring both efficiency and also engendering the protection of beneficial uses. In a like fashion, the need for a regime to exhibit clarity may be a factor that might impact upon its general efficiency.

² Caponera, for example, rejects the notion of a universally applicable regime because such a model would "depends not only on its historical, cultural, religious, geo-physical and legal factors, but also on the political will to undertake... needed administrative or institutional reform". - D.A. Caponera, *Principles of Water Law and Administration* (1993) at p 175.

³ Which may be manifest in various ways as explained below.

It may be useful here to recall the positive features of the various alternative water regimes set out in chapter 5. It can again be seen that these features may all fall within the criteria above. In terms of protecting beneficial uses, the positive features drawn from the regimes analysed in chapter 5 encompassed: a general recognition of the importance of water rights for all in society, including recognising the rights of all overlying landowners and the needs of those not overlying the resource; encouraging water use to aid industrial development; limiting uses in times of shortages/environmental problems; and prohibiting unreasonable and wasteful activities. In terms of efficiency, the positive features from alternative regimes revealed encompassed: clarity of rights; low transactional costs and exclusive, determinable rights to facilitate trading and more efficient uses in society. In terms of legality, the positive features from alternative regimes revealed the countenancing of existing private property rights in water.

Chapter 5 observe that the range of potential positive characteristics of a water governance regime are not fully compatible in the sense that they cannot all be sought to a maximum extent in every case, all of the time. For example, there may be an undeniable tension between the quest for efficiency and the need to ensure protection of beneficial exploitation and prohibition of environmentally damaging uses. Thus, part of the analysis is to examine whether the balance in this regard has been struck in the right way for Scotland. Of course in so doing, it should be borne in mind that compliance with the European Water Framework Directive must be seen as the overarching aim of both WEWS and the empowering legislation which follows in its footsteps. In this regard, Scottish policy-makers' hands may be tied to some extent.

This chapter begins with an extensive analysis of the requirement that any regime imposed itself be lawful, in terms of legal duties owed by policy makers to water users. This analysis differs from that relating to other policy markers in that it is essentially a technical 'black letter law' question rather than a critical policy debate. It is of no less importance, however, in that any legal deficiencies that can be identified may undermine the regime and the commitment of stakeholders to it, and provide opportunities for recalcitrant parties to exploit loopholes in the provisions thus running contrary to the goals of efficiency and protection of beneficial uses.

Lawful nature of the regime

In chapter 5, it was suggested that the imposition of any new regime would need to be politically acceptable and in particular, not be inconsistent with the lawful assertion of private property rights which may currently exist in water. One particular example noted was the debate which has existed for some time in respect of the possible imposition of a state-controlled licensing regime upon the largely, absolute dominium approach to groundwater use incumbent in Texas and the issue of compatibility with the 'takings' clause set out in the 4th Amendment to the US Constitution. Although there is no US-style 'takings' clause, as such, that policy-makers in Scotland would need to comply with in the establishment of a new water governance regime, human rights concerns under the European Convention on Human Rights (ECHR) may provide an equivalent challenge for policy makers. This discussion is particularly relevant in that, as noted in chapter 5, industry sectors with a hitherto, largely unfettered right to abstract water resources as an incident of landownership may in the future find themselves subject to significant restrictions on future abstractions. Moreover, they will be bound to pay for the privilege of attaining a resource that was previously deemed part of land in which it was found.

It might be contended that any ethical argument doubting the propriety of the imposition of a new regime with its attendant 'taking' of the private right to draw water from land is superseded by the needs of society to ensure the sustainability of what may increasingly become a scarce resource. While such sentiments may be true, a more pertinent discussion focuses upon the fact that the Scottish Parliament – in line with section 6 of the Human Rights Act 1998 (HRA) – as a public body, must act in accordance with the provisions of the European Convention on Human Rights (ECHR).⁴ It therefore follows that WEWS and the regime that is articulated therefrom by ministerial regulations must clearly be compatible with the terms of the ECHR. Similarly, as a public regulator, SEPA will also be under an obligation to act in accordance with convention rights. Here the reforms anticipated under WEWS are analysed in the context of compatibility with the ECHR, particularly in light of the obligations placed upon public bodies under the Human Rights Act 1998 (HRA). This is a somewhat complex question and a number of issues require detailed analysis. There is currently, very little writing on this specific issue and accordingly a significant amount of space is given to discussing this matter.⁵

General informing ECHR concepts

Margin of appreciation

Prior to discussing the issue of compatibility in detail, a brief outline of some general informing concepts may be useful. As a general point it should be noted that states are

⁴ By way of s 31(1) of the Scotland Act 1998, the member of the Scottish Executive responsible for promoting a Bill must state that its terms are not incompatible with the convention. Unlike, its UK counterpart, the Scottish Parliament – as a creature of statute and public body within the definition of the HRA – is forbidden to enact legislation contrary to convention rights.

⁵ In fact at the time of writing there appears to be no academic treatment of the issue of the post-WEWS regime and ECHR compatibility. The author presented a conference paper on this topic at the Scottish

afforded a 'margin of appreciation' in their approach to human rights with the result that many of the rights enshrined in the Convention are not absolute and states may interfere with them where they can demonstrate an identifiable and legitimate public interest.⁶ States do not, however, enjoy unlimited discretion in this regard. In *Handyside v UK*, for example, the Strasbourg court remarked that "the domestic margin of appreciation... goes hand in hand with a European supervision".⁷

The doctrine of margin of appreciation is an international concept which reflects the fact that the European court is faced with resolving matters that may vary considerably across different contracting states, many of which have distinct respective social, cultural and political characteristics. It had previously been questioned therefore whether such an international concept should have a place in deliberations based on the HRA in the UK domestic courts.⁸ It had been suspected that something along similar lines would likely be applied, however, as just in the same way that the Strasbourg court has countenanced the fact that there are instances in which states are better placed to make policy decisions for the benefit of their respective societies, the domestic judiciary would be likely to accept that these decisions are best left in the hands of elected politicians. In practice it had been suspected therefore that the domestic courts would employ a similar practice in respect of state discretion, albeit with a different label. As Smyth has observed, "whether it be termed a margin of appreciation or not, the notion that public authorities have a residual area of permissible discretion is a basic feature of our common law and that residual area of legitimate movement will continue to be accepted by judges for the

Law Faculties Conference (Scotland's Hotel, Pitlochry, 31st March 2004). Moreover the author has written a substantial article dealing with these issues to be published in the *Edinburgh Law Review*, Jan 06.

⁶ See Palmer, 'Human Rights : Implications for Labour Law' (2000) *CLJ* 172.

⁷ (1976) 1 EHRR 74 at para. 48.

⁸ See for example, J. Waldham and H. Mountfield, *Human Rights Act 1998* (1999) at p. 18.

foreseeable future”.⁹ This has been borne out in both Scottish and English authority where courts have referred to an equivalent concept oft termed “judicial deference” under the HRA which public authorities may act within in respect of certain rights. The domestic judiciary seem equally as keen as the Strasbourg court not to usurp the discretion of the state to take appropriate decisions in a range of areas.¹⁰

Proportionality

The second principle is that of ‘proportionality’ which means that even where states identify a legitimate public interest for interference with a person’s human rights there must be “a reasonable relationship of proportionality between the means employed and the aim sought to be realised”.¹¹ Hence, excessive means cannot be used to realise a legitimate aim. A measure taken by the state “should not exceed the objectives legitimately pursued by the legislation in question; when there is a choice between several appropriate measures, recourse must be had to the least onerous and the disadvantages caused must not be disproportionate to the aims pursued”.¹² It should be noted that these two concepts are not always differentiated as neatly as received wisdom would suggest – in fact the two overlap at times. These concepts shall be returned to when discussing the right to possessions below.

The right to possessions

Introduction

Article one, protocol one provides that :

⁹ M. Smyth, *Business and the Human Rights Act 1998* 2000 at p 117.

¹⁰ See *A v Scottish Ministers* 2001 SC 1; *Stott v Brown* 2001 SCCR 62; *Mavis v Thames Water Utilities Ltd* [2004] 2 A.C. 111.

¹¹ *James v UK* (1986) 8 EHRR 123 at para 50.

¹² *Case C-331/88 Fedesa* [1990] ECR I-40233 at para 13. This is in fact a European Court of Justice case but a similar concept of proportionality has also been applied in respect of EC law.

Every natural or legal person is entitled to the peaceful enjoyment of his possessions. No one shall be deprived of his possessions except in the public interest and subject to the conditions provided for by law and by the general principles of international law. The preceding provisions shall not, however, in any way impair the right of a State to enforce such laws as it deems necessary to control the use of property in accordance with the general interest or to secure the payment of taxes or other contributions or penalties.¹³

As a preliminary point it should be noted that the right to possessions set out in protocol one is arguably a somewhat weak provision. There are a number of underlying factors which have contributed to this. First, the decision to include such a right at all within the Convention was itself a controversial one. The provision was not included in the original Convention because it was felt that this would have endangered agreement on the overall terms of the treaty.¹⁴ Even when the possessions provision was added in 1952 it was not without difficulty.¹⁵ Specifically the governments of Sweden and the UK were concerned that the addition of a property right would interfere with programmes of nationalisation that they were pursuing at the time. The UK and Swedish authorities made it clear that they did not wish to become hidebound by an agreement which would prevent them from forcibly acquiring property as part of a *bona fide* socio-economic programme of nationalisation. Hence, they sought to ensure that their right to acquire property under compulsion would not be prohibited by the convention.¹⁶ There were other general objections too; on a fundamental level it was argued that the right to property was an economic right rather than a civil right and that a convention concerned with the protection of human liberties was an inappropriate vehicle within which to formulate and protect such rights. Reflecting this concern, Harris has stated that

¹³ Protocol No 1 entered into force on 18 May 1954, ratified by the UK on 3rd November 1952.

¹⁴ At the time of the drafting of the convention, an article was proposed based upon the wording of Article 17 of the Universal Declaration of Human Rights 1948 which reads "1. Everyone has the right to own property alone as well in association with others. 2. No one shall be arbitrarily deprived of his property". This was rejected by contracting states.

¹⁵ D. Rook, *Property Law and Human Rights* (2001) at p 1.

¹⁶ Dignam and Allen, *Companies and the Human Rights Act 1998* (2000) at para 12.2.

[t]he peaceful enjoyment of his possessions no doubt contributes to the well-being of an owner, but it may be the means of damaging the well-being of his fellows. Since 'possessions' covers anything from immense riches to the clothes someone stands up in, how could it be supposed that the well-being of all humans makes 'enjoyment' of all possessions a universal right?¹⁷

In a similar vein few could argue with the well-worn remarks of Holmes J. in this regard: "government could hardly go on if some values incident to property could not be diminished without paying for every such change in the general law".¹⁸ As a consequence of such concerns, both the wording of the provision and the way in which it has been interpreted by the European Court on Human Rights in Strasbourg (ECtHR) is generally restrictive.

UK interpretation v Strasbourg interpretation

One point that may inform the analysis regarding human right compatibility is that it has been argued that the UK domestic courts may interpret article one, protocol one in such a way as to bestow more opportunities for those parties seeking to assert those rights than those in the court in Strasbourg.

Although there seems little evidence thus far in this respect, it has been argued that the discretion of the state to interfere with property rights may be interpreted in a more restrictive manner by the UK courts because of the value the domestic judiciary has traditionally placed upon the assertion and defence of property rights.¹⁹ In this regard the words of Blackstone are relevant: "sacred and inviolable rights of private property" should not be set aside for the public good without "a full indemnification and equivalent for the injury thereby sustained".²⁰ While such an argument may have held

¹⁷ J.W. Harris, 'Is Property a Human Right' in J. McLean (ed), *Property and the Constitution* (1999) at p 79.

¹⁸ *Pennsylvania Coal v Mahon* 260 U.S 393 (1922).

¹⁹ Dignam and Allen, *supra* n 16 at para 12.6.

²⁰ Blackstone, *Commentaries* Vol 1, p. 135.

some merit historically - and certainly an absolute Blackstonian view of property rights is manifest in much early English authority²¹ - it may be that in modern society such an argument may not hold much water. Absolutist notions of private property have been eroded heavily of late by the requirement to take into account the needs and expectations of others in society; witness the growth in the UK over recent years of pervasive social legislation in the UK relating, for example, to planning and anti-pollution and other environmental measures, which has made significant in-roads into private property rights.²² Moreover, in relation to Scots law it might be argued that property law has never really been absolutist in the Blackstonian sense and the rationale behind the imposition of state regulation in the water field to pay due regard to the rights of others in society is a well-established principle which is already manifest in traditional limitations of property use, such as those found in the laws of nuisance or support.^{22a}

A possible further justification for departing from Strasbourg jurisprudence in respect of property rights is that the Convention is characterised by an 'evolutionary' character - its provisions are not set in stone as such and the treaty is designed to move with shifting social and political standards and expectations.²³ Although not directly germane to the property context, a 'living instrument' approach can be seen in other areas such as the approach of the Strasbourg court to the issue of sexual orientation. In the early 1980's

²¹ Perhaps most strikingly illustrated in *Bradford v Pickles* [1895] AC 587 HL but also present in more recent English cases such as *R v Denton* [1981] 1 WLR 1446 (no offence under the Criminal Damage Act 1971 to damage or destroy one's own premises by fire); *Phipps v Pears* [1965] 1 QB 76 (every man entitled to pull his own house down or cut down his own trees even where it leaves him with no shelter).

²² For an interesting discussion of this issue see Gray and Gray, *Elements of Land Law* 3rd ed (2001) at pp 1133 - 1137.

^{22a} Furthermore, it can be argued that "in an era of increasing environmental awareness it has become much more feasible to contend that land ownership is a form of social stewardship, that right and responsibility are inseparably fused..." - K. Gray, 'Land Law and Human Rights' in L. Tee (ed) *Land Law Issues, Debates, Policy* (2003) at p 239. See also McKenzie Skene, Rowan Robinson, Paisley and Cusine, 'Stewardship: from rhetoric to reality', (1999) 3 *Edin LR* 151.

²³ See for example, *Tyrer v UK* (1978) 2 EHRR 1 at para. 31.

case of *Dudgeon v United Kingdom*,²⁴ the Strasbourg court held that the criminalisation of certain homosexual acts between consenting adults amounted to a breach of article 8 (respect for private and family life). The judges took the view that previously accepted approaches should be departed from on the basis that

[a]lthough members of the public who regard homosexual acts as immoral may be shocked, offended or disturbed by the commission by others of private homosexual acts, this cannot on its own warrant the application of penal sanctions when consenting adults alone are involved.²⁵

It is arguable that treating the convention in this way as an evolving dynamic document which reflects the shifting values of the member states would restrict the state's ability to interfere with individual possessions in the UK and many other contracting states. The reason for the traditional restrictive approach of the ECHR to the property provisions was that at the time the ECHR and the protocol was crafted, the goal of nationalisation was seen as an overriding concern and sufficient in itself to justify taking a citizen's property for at times less than market value. In the post-war climate in which the ECHR was drawn up, it could be argued that the overriding philosophy behind the treaty was centred on promoting community-based policies and doctrines in preference to the economic 'rights' of individuals. Such an underlying ethos may no longer be the case and in fact such an approach is out of step with the policies of most of the countries of the Council of Europe where the political emphasis is very much upon capitalism and the importance of individual possessions. Most states are in fact or have been in recent years, engaged in privatisation policies.²⁶

²⁴ (1981) 4 EHRR 149.

²⁵ *ibid.*

²⁶ Dignam and Allen, *supra* n 16 at para 12.6.

Interpretation of the provisions

At first glance, the protocol is perhaps a little confusing²⁷ in that it refers to the concept of 'possessions' in the first paragraph and then 'property' in the second.^{27a} It has been suggested that 'possessions' is the primary term in the article and has been used in this manner as it is a generic concept whereas "property' is a complex concept even in a single system. It is far too complex to form the basis of a rule applicable to over 40 systems".²⁸

Whatever the rationale behind the terminology and despite the article's inherent weaknesses that shall be discussed below, it seems that on a fundamental level this provision is to be interpreted liberally and the term 'possessions' may be wider in scope than common state understandings of 'property'. In *Gasus Dosier and Fordertechnik GmbH v The Netherlands* for example, (a case in which the right was held to apply to the sellers' interest in property sold under a retention of title clause which was delivered but not paid for and seized by the tax authorities in respect of the purchasers' debts) the Court held that possessions in this context are "certainly not limited to ownership of physical goods: certain other rights and interests constituting assets can also be regarded as 'property rights', and thus as 'possessions' for the purposes of this provision."²⁹

The article has thus been held not only to encompass land and corporeal moveables but also all acquired rights which have an economic value, eg shares,³⁰ patents,³¹ fishing

²⁷ or arguably poorly drafted.

^{27a} although interestingly the French and Italian versions refer to 'property' in the first paragraph.

²⁸ A. Brown, *Human Rights* (2000) at p 80. This viewpoint can perhaps be challenged on the basis that the use of term property or possessions used in the protocol 1, article 1 refers to the objects of ownership and not to the right of property.

²⁹ (1995) 20 EHRR 403.

³⁰ *Brunelid and Malinstrom v Sweden* Appl 8588/79 and Appl 8589/79, (1982) 29 DR 64.

³¹ *British American Tobacco Company v The Netherlands* (1955) 21 EHRR 409.

rights³² and compulsory insurance schemes.³³ Judgement debts³⁴ and contractual entitlements³⁵ are also included within this liberal interpretation of 'possessions'.

The key point to note in this regard is that the article is no respecter of national definitions of property. As Coppel has noted

[t]he starting point for establishing unlawful interference with a protected property right is the question of whether the entitlement or expectation at issue constitutes a property right under national law. If it does, that will usually be the end of the matter. However, 'possessions' has an autonomous Convention meaning which may include items which do not have the requisite status under national law.³⁶

Thus in *Van Marle v The Netherlands*,³⁷ even though the concept of goodwill was not recognised as a property right under Dutch law, the court held that in so far as Art 1/1 was concerned it fell within its scope as a private right to possessions.

Do water rights in Scotland fall within the ambit of possessions?

To answer this question it is necessary to revisit the current state of the common law as regards property rights in Scottish water resources. Recalling the analysis in chapter three as regards this question, it seems clear that water in a defined channel is not considered to be the subject of individual ownership and rather is owned by the state in trust for individuals. Under Scots law, however, riparians are bestowed with a qualified right to use the water as an incident of landownership.³⁸

³² *Baner v Sweden* (1989) 60 DR 128.

³³ *Gygyasuz v Austria* (1997) 23 EHRR 364.

³⁴ *Stran Greek Refineries and Straits Andreadis v Greece* (1994) 19 EHRR 293.

³⁵ *Mellacher v Austria* (1997) 23 EHRR 364.

³⁶ *ibid.*

³⁷ A/101, (1986) 8 EHRR 483,491.

³⁸ See chapter 3.

The question as regards percolating groundwater is less clear. The two conflicting viewpoints - both of which have been lent some authority under Scots law - that were alluded to in chapter three, are that either groundwater is owned *in situ* as part of the land in which it is found or that such water is *res nullius* until reduced into possession but subject to an absolute usufructuary right to abstract. With respect to those commentators who take the contrary view, the analysis presented above³⁹ showed that the latter standpoint that groundwater in itself was *res nullius* but subject to an unfettered right to extract is perhaps the better view and altogether more consistent with recognised principles of landownership. Furthermore the fact that there is no express nationalisation of water resources under WEWS - akin for example, to the case with coal and hydrocarbons⁴⁰ - may lend support to the viewpoint that at least the Scottish Executive considers that such water resources are already *res communes*.

Does a right to take water fall within the ambit of possessions?

At first blush, a problem may appear to lie in the fact that Strasbourg case-law has suggested that article one, protocol one only serves to protect property which has already been acquired but not future rights or expectations to property. In *Marckx v Belgium*,⁴¹ where a challenge was made *inter alia* under the possessions article that Belgian succession laws restricted the succession rights of illegitimate children, the action failed on the ground that the article did not extend to guarantee rights to acquire property, but merely to safeguard existing property rights. It should nonetheless be borne in mind that although it seems that under Scottish common law there is no right of ownership in the water itself but a mere right to take possession of the same, it has long been held that a riparian right to abstract water is an incident of landownership, which can be enforced

³⁹ in chapter 3.

⁴⁰ Under the Coal Industry Nationalisation Act 1946 and Petroleum (Production) Act 1934 respectively.

⁴¹ A/31, (1979-80) 2 EHRR 330, 335.

against the public as a real right in Scotland⁴² and there seems no reason to doubt that an unfettered right to abstract percolating water (which arises as an incident of landownership) should also be considered a property right in the context of the ECHR. This may be particularly so, given that this unfettered right is more extensive than a riparian right subject to the need to countenance the correlative rights of others.

Again if one makes comparisons with similar cases, it seems logical that if the Strasbourg court is willing to uphold a fishing right or an entitlement under contract as falling within the ambit of possessions, then in like fashion it would follow that a usufructary right to take water would be treated in the same way.

How are rights protected?

Having established that the current common law rights to abstract water should fall within the ambit of 'possessions', the next question to be asked is whether the imposition of a licensing regime by the Scottish Executive would fall foul of the provisions of article one, protocol one. To assist in answering this question it should first be noted that the article has three important rules of interpretation.⁴³ The three rules were first enunciated by the court in the seminal case of *Sporrong & Lönnroth v. Sweden*:

The first rule, which is of a general nature, enounces the principle of peaceful possession of property; it is set out in the first sentence of the first paragraph. The second rule covers deprivation of possessions and subjects it to certain conditions; it appears in the second sentence of the same paragraph. The third rule recognises that States are entitled, amongst other things, to control the use of property in accordance with the general interest, by enforcing such laws as they deem necessary for the purpose; it is contained in the second paragraph... [the court] must determine, before considering whether the first rule was complied with, whether the last two are applicable.⁴⁴

⁴² N. Whitty, 'Water Law Regimes' in K. Reid and Zimmerman (eds) *A History of Private Law in Scotland* (2000) at p 451.

⁴³ A. Brown, *supra* n. 28 at p 80.

It is therefore apparent that the notion of peaceful enjoyment of possessions constitutes a separate ground of complaint in itself. Although its scope is not clear, it is a residual ground in the sense that it may be wider in scope (or at least refers to different infringements of property rights) than the deprivation of property and control of use of property provisions and may be the basis of a claim where the state infringement concerned does not amount to a deprivation or control. It seems useful therefore to refer to any possible infringement of the deprivation and control provisions by the imposition of a licensing regime prior to examining this separate residual ground.^{44a}

Deprivation of Property

Coppel has noted that the deprivation of property provision will only apply "where property has been confiscated *de jure* so that the owner is deprived of his legal title."⁴⁵ Following this argument, where mere *de facto* property rights have been lost, the provision will not apply. Despite this viewpoint there is some authority to suggest that rendering property rights practically worthless without removing legal title may be encompassed within the article. In *Papamichalopoulos v Greece*⁴⁶ legislation transferred the use of land from the applicants to the Navy Fund which rendered the applicant's legal title unmarketable and practically worthless. Despite the fact that title *de jure* was not lost, the court held that the deprivation of property provision applied.

In the context of the imposition of a water abstraction licensing regime, such a move would not appear likely to fall within the deprivation of property provision. There is no deprivation of title as such – as in fact as we have established there is no title to the water

⁴⁴ (1983) 5 EHRR 35; (1984) 7 EHRR 256.

^{44a} Although the three rules are not distinct in the sense of being unconnected and the second and third rules are broadly interpreted in the light of the general principle expounded in the first – see for example, *James v UK* *supra* n. 11 at para 37.

⁴⁵ J. Coppel, *Human Rights Act 1998 : enforcing the Human Rights Convention in the domestic courts* (1999) at p 377.

currently vested in the landowner and the existing right to abstract is not removed by the state⁴⁷ – rather the licensing regime merely modifies the existing right to exploit the resource. Moreover, although the right to the water itself may be the ‘possession’ within the scope of article one, protocol one, even in such a case where that right is in effect deprived by a licensing regime, Strasbourg jurisprudence would suggest that this regulatory intervention would amount to a control on land-use rather than a deprivation of the right to the water.^{47a} In essence therefore, the imposition of the licensing regime would likely amount to a control of use of property rather than deprivation *per se*.

Control of the Use of Property

It has been argued that in practice there may be little difference between deprivation and control provisions, although proving deprivation is beneficial for the applicant in that this raises a presumption of a right to compensation.⁴⁸ Despite the potential overlap between the provisions, clearly the control provision is wider in scope than the deprivation clause. This arm of article one, governs situations in which a person’s right of property is controlled by the state in some way. The most obvious examples thrown up by Strasbourg case law include restrictions on land use due to planning controls or environmental regulations.⁴⁹ Other examples of control include the imposition of positive obligations on the land owner,⁵⁰ and inheritance tax law restrictions.⁵¹ One particular control over use of land which may be of particular relevance to this study is the loss of certain exclusive rights over land. In *Baner v Sweden*⁵² a landowner’s exclusive right to fish on his privately owned waters was lost after legislation was passed to this

⁴⁶ (1996) 21 EHRR 434.

⁴⁷ and no nationalisation of water resources in the Act.

^{47a} See for example, *Baner v Sweden* (App. No. 11763/85).

⁴⁸ See D. Anderson, ‘Compensation for Interference with Property’ [1999] EHRLR 543 at p 553.

⁴⁹ See for example *Pine Valley Developments Ltd v Ireland* (1991) 14 EHRR 319; *Sporrong & Lönnroth v Sweden*, A/52, (1983) 5 EHRR 35.

⁵⁰ *Dener v Sweden* (1989) 59 DR 127

effect. This was held to amount to a control on the use of his property, rather than a deprivation of his right to fish as such. In a similar vein, in the case of *Chassagnon v France*,⁵³ landowners were compelled to transfer their exclusive right to hunt to members of a municipal hunting association. Again this was held to be a control over the use of their land. The Strasbourg court held that "[t]he compulsory transfer of the hunting rights over their land to [the hunters' association] prevents them from making use of their right to hunt, which is directly linked to the right of property".⁵⁴

Before analysing the potential for breach of these provisions in respect of the proposed water abstraction regime it should be noted that both the deprivation and control of property provisions are subject to their own express limitations. The discussion below will reveal that these are not particularly onerous and the Strasbourg court has additionally applied its own 'fair balance' test to the provisions. The express limitations relating to deprivation of property are that such deprivation must be in the public interest, and lawful according to domestic and public international law.⁵⁵

Public interest

Exactly what is meant by the term 'public interest' is not made clear in article 1, protocol 1. It appears, however, that this term relates to the state's justification to deprive citizens of their property and, as such, deprivations of property must be made in pursuance of a legitimate aim.⁵⁶ The concept of 'legitimate aim' is expressly recognised in the Convention and article 8(2) provides a number of such aims including national security,

⁵¹ *Marckx v Belgium* *supra* n. 41.

⁵² (App. No. 11763/85).

⁵³ [1999] EHRR 615.

⁵⁴ *ibid* at para 74.

⁵⁵ Although it appears that public international law will only be of relevance where the property of non-nationals has been expropriated – *James v UK* n/98, (1986) 8 EHRR 123 at 148-151. It is worth reviewing

public safety, the economic well-being of the country and the protection of morals.⁵⁷ It seems evident that this test could easily be fulfilled in respect of a water licensing regime. The need to provide sustainability for the future use of the resource would clearly fall within the scope of article 8(2). Given judicial reluctance to interfere with legitimate state aims in this regard,^{57a} it would seem unlikely that courts would embark on any determination of whether this aim of sustainability would be met by the terms of the post-WEWS regime.

Fair-balance and Compensation

Although article one, protocol one is silent on the issue of compensation for deprivation of property,⁵⁸ it has been noted that in practice "where a person has been deprived of his possessions, within the second limb of Article 1/1, the striking of a fair balance between individual rights and the interests of the community will require the payment of compensation in all but exceptional circumstances."⁵⁹ The existence or not of compensation will be relevant in determining whether an appropriate provision meets the court's 'fair-balance' test.⁶⁰ The extent of compensation offered may of course also be relevant. The level of compensation need not necessarily, however, be commensurate with the market value of property appropriated. In *Lithgow v UK*,⁶¹ for example, the court held that compensation should be 'reasonably related' to the value of the property

these in the (albeit unlikely) event that a Scottish court were to hold that the imposition of the post-WEWS regime amounted to a deprivation in respect of particular users.

⁵⁶ See the viewpoint of the Commission in *Gillow v UK* (1989) 11 EHRR 335.

⁵⁷ For examples of cases where states have successfully pled a public interest, see *James v UK* *supra* n 55 (elimination of social injustice in the housing sector); *Lithgow v UK* (1986) 8 EHRR 329 (nationalisation of industries); *Hentrich v France* (1994) 18 EHRR 440 (prevention of tax evasion).

^{57a} In cases such as those in footnote 57 above.

⁵⁸ A number of contracting states (including the UK) were not in favour of the inclusion of an express right to compensation.

⁵⁹ Coppel, *supra* n. 45 at p 374. What amounts to exceptional circumstances is unclear. It has been suggested that there may be no right to compensation for state deprivation in a time of war — see D.J. Harris, M. O'Boyle and C. Warbrick, *Law of the European Convention on Human Rights* (1995), at p 532.

⁶⁰ In this context 'fair balance' relates to the general principle of proportionality.

⁶¹ *supra* n. 57 at 371.

appropriated but that this need not amount to full compensation where there were legitimate public interest reasons for reimbursement at a lesser value.⁶²

In accordance with the general interest

The requirement set out in article one, protocol one is that states need be acting in accordance with the general interest in controlling the property of citizens as opposed to acting in the 'public interest' in respect of deprivation of property. It seems unclear as to whether there is in fact any difference between the two requirements.⁶³ Rook has suggested, however, that

[a]ny debate over the possible differing scope of these phrases is probably futile as it is extremely unlikely that the Strasbourg Institutions will dispute a legitimate aim put forward by a state. As with the second rule [deprivation of property], the deciding factor under the [control of property provision] is likely to be the principle of proportionality [fair balance].⁶⁴

Proportionality (fair balance)

In common with the second rule, there must be proportionality between the aim pursued and the means employed. Again the issue of compensation is important in this context. Given, however, that control of use amounts to a less serious infringement of property rights then the right to compensation is not so well protected as is the case under the deprivation rule. In fact the court in *Pinnacle Meat Processors v UK*⁶⁵ took the view that a control of use "does not, as a rule, contain any right to compensation". This strict viewpoint has been consistently followed by the Strasbourg court and perhaps offers the

⁶² For example, measures taken in pursuance of economic reform or social injustice — see *James v UK* *supra* n. 11 at para. 54.

⁶³ In *James v UK*, *supra* n. 11 it was suggested that the two concepts were in fact different and in particular that the state would be granted more latitude to control the use of property rather than deprive its subjects of property. This point was not decided in the case, however and the court remained silent on whether a distinction existed.

⁶⁴ D. Rook, *supra* n. 15 at pp 79-80. In a similar vein it may be that the UK domestic courts would be unlikely to dispute a legitimate aim put forward as justification by the state and again proportionality will be the important issue to be determined.

starkest illustration of the limited nature of the property right enshrined in the Convention.⁶⁶ It is an issue likely to be central to discussions pertaining to the imposition of a licensing regime for water in Scotland.

Although there is no direct authority relating to this point from domestic courts in Scotland, a recent English decision may be instructive. In *Trailer and Marina (Leven) Ltd v The Secretary of State for the Environment, Food and Rural Affairs*,⁶⁷ the issue before the court can be summarised as follows : T sought a declaration that amendments to the Wildlife and Countryside Act 1981 introduced by the Countryside and Rights of Way Act 2000 s 75(1) and Sch. 9 were incompatible with the property rights enshrined in the Human Rights Act 1998. T owned a stretch of canal which was embanked at either end thereby preventing boats from crossing through. The relatively undisturbed nature of the canal encouraged a rich wetland habitat to develop and the Nature Conservancy Council ("NCC") designated the canal as an area of special scientific interest ("SSSI") under the 1981 Act so that specified operations were prohibited except with the consent of the NCC. In 1997, T and the NCC had entered into a management agreement in which T agreed not to develop fishing and boating activities on the canal in return for an annual compensation payment of £19,000 to reflect potential loss of income. However, the new provisions of the 2000 Act and the accompanying ministerial guidance prevented the NCC from continuing to pay compensation in respect of losses based on activities which had not been undertaken. T submitted that the restriction preventing the canal's commercial use had reduced the canal's value almost to nil and a statutory scheme that required that to happen, without compensation, was disproportionate.

⁶⁶ App. No. 33298/96

In this case, Mr Justice Ouseley carried out an extensive review of relevant Strasbourg authorities in holding that the imposition of the regime without compensation to the claimant was not disproportionate. He was at pains to affirm the wide discretion that national governments have enjoyed in respect of interference with private property rights which are deemed to be in the national interest⁶⁶ and the fact that as a general rule –following *Baner v Sweden*⁶⁹ – it has been well established that a control of the use of property (as the circumstances in this case clearly amounted to) did not generally require compensation to be paid to affected proprietors to be proportionate.⁷⁰ In particular he remarked that

I regard *Baner* as showing what the general but not necessarily universal position is in relation to a control of use. Compensation for it is not inherent in the Convention, control of use legislation does not ‘as a rule’ contain provision for compensation... it is clear that [the lack of compensation] will be significant on rare occasions rather than as a matter of routine.⁷¹

Ouseley’s approach to the issue of compensation was taken despite counsel for the claimant’s reliance on *Chassagnou v France*⁷² in which the court considered a control on use to be disproportionate when the state ordered that landowners transfer hunting rights over their property to hunting associations in the absence of compensation. Landowners so affected were made members automatically of the hunting association so that they could now hunt over other land also subject to the new provisions. The main ground of complaint was not grounded in the claimants’ loss of an exclusive right to hunt upon their own land but rather that there was now no way to protect animals

⁶⁶ See for example, *Baner v Sweden* *supra* n. 52; *Jacobsson v Sweden* [1989] 12 EHRR 56; *Fredin v Sweden* [1991] 13 EHRR; *Tre Traktator Aktieföretag v Sweden* [1989] 13 EHRR 309.

⁶⁷ [2004] EWHC 153

⁶⁸ see paras 56–67.

⁶⁹ *supra* n. 52.

⁷⁰ see paras 68–85

upon their land from the actions of members of the hunting association who now held a right to hunt them. The claimants were not interested in hunting at all and therefore their own new rights to hunt on the lands of others was seen as no compensation. The Strasbourg court concluded that :

notwithstanding the legitimate aims of the [French legislation]... the Court considers that the result of the compulsory transfer system which it lays down has been to place the applicants in a situation which upsets the fair balance to be struck between protection of the right to property and the requirements of the general interest. Compelling small landowners to transfer hunting rights over their land so that others can make use of them in a way which is totally incompatible with their beliefs imposes a disproportionate burden which is not justified under the second paragraph of Article 1 of Protocol No. 1. There has been a violation of that provision.⁷¹

It was pointed out by the court in *Trailer and Marina* that *Chassagnon* was not a case which should be taken as one establishing any sort of general principle that a control of use without compensation should be seen as proportionate. In the court's view, *Chassagnon* was more concerned with the fact that landowners morally opposed to hunting had, under the French legislation, no means of voicing their objection to the hunting of association members upon their land when others (not so opposed) had the compensation of a right to hunt on the land of others. The case was

not one in which the root of disproportion is to be found in the absence of compensation to the owners but it was a contributory factor in the light of compensation available for those who in some way would benefit from the new hunting rights. The essence of the case was not the absence of compensation.⁷²

This view does seem a correct reading of this somewhat unusual case. It is clear from the court's judgement in *Chassagnon* that the imposition of the hunters' activities against the moral beliefs of the landowners concerned failed to strike an appropriate balance

⁷¹ at para 80.

⁷² *supra* n. 53.

⁷³ at para 85.

⁷⁴ *Trailer and Marina supra* n. 67 at para 79. Justice Ouseley's approach has since been affirmed on appeal. The Court of Appeal was at pains to affirm the legitimate right of the state to impose controls on use in the national interest but suggested that where a control amounted to a disguised appropriation then that

between the general interest and the rights of those landowners affected and thus compensation was payable on that ground. It is not perhaps a case which represents a useful foundation for any general notion that compensation be payable for a control of use by the state.

Peaceful Enjoyment of Possessions

This is the residual ground which may serve to catch those interferences in property which do not fall within the second and third limbs of article one, protocol one. It seems clear that the imposition of the post-WFWS regime in Scotland will amount to a control and hence no discussion in this sense is required in respect of this first limb. As noted below, however, it may come in to play in respect of state's positive obligations.

Concluding remarks about possible HRA breach an imposition of the regime

From the discussion above it seems likely that the imposition of a statutory licensing regime will not amount to a deprivation of property that would bring with it an assumption that compensation be payable. There is no express nationalisation as such and neither would there be there be any actionable *de facto* deprivation which might arguably give rise to an expectation for compensation to be paid, in the sense that title to land affected by the licensing regime would be unlikely to be rendered worthless thereby.⁷⁵ By contrast it seems evident that the imposition of a licensing regime would amount to a control upon the use of property, even, as noted above, where the effect of that regime would be to prohibit abstraction altogether. In this respect, the 'general

might entail compensation – *Trasler and Marina (Leven) Ltd v Secretary of State for Food, The Environment and Rural Affairs* [2004] EWCA Civ 1580.

⁷⁵ Moreover, at least the Strasbourg court has shown a tendency to classify measures a control rather than deprivation when any ambiguity exists and arguably even in cases where the infringement complained of appears quite clearly to amount *de facto* to a deprivation rather than control – see for example *The Tracktor v Sweden* (1989) A 159; *Fredin v Sweden supra* n. 66 (both relating to goodwill); *Handyside v UK* (1976) A 24, para. 63 (this case involved the destruction of property that had been lawfully adjudged illicit and contrary to the public interest).

interest' test required of a state would easily be achieved in that the regime is to be imposed on a basis clearly for the benefit of society (present and future) as a whole. The Strasbourg court has rarely challenged such a state rationale, and in this instance the domestic Scottish courts are unlikely to do so either, particularly where WEWS and its attendant framework have been implemented in pursuance of a European Directive. As discussed in relation to control of property cases, the Strasbourg court has been reluctant to require the payment of compensation to the parties affected thereby. As noted, the issue of compensation seems to lie heavily on whether the infringement of a property right amounts to either a deprivation or rather control. Given that in practice there may be little differential between the two, this schism has been attacked on the basis that such a rigid rule may be unfair and illogical at times.⁷⁶ The English decision in *Trailer and Marina*⁷⁷ may indicate no likely reason why Scottish courts would take a different view, and it may simply be that compensation would not be required to fulfil the 'fair-balance' test of the court.

Having said that, and bearing in mind that Scottish courts are not bound by Strasbourg jurisprudence (or English decisions for that matter), it might be argued that the costs involved for those whose activities are impacted upon adversely in the post-WEWS regime should lend itself to the presumption of some payment of compensation. While it is anticipated that (at least initially) there will be no required payment for water abstracted itself beyond a fee to cover the administrative costs of the regulatory regime, as discussed in this chapter 6, compliance with the aims of the directive and the resulting restrictions on abstractions will seriously impact many industry sectors in monetary

⁷⁶ As one commentator has remarked "the distinction between deprivation and control, in the context of the duty to compensate, is an untidy and unsatisfactory one": D. Anderson, *supra* n. 48 at p 553.

⁷⁷ *supra* n. 74.

terms. It remains to be seen, however, whether such a fact in itself may persuade a Scottish court that compensation should be payable.

A factor that may add fuel to this viewpoint may be that in the Scottish Executive's preliminary cost-benefit analysis, those estimated post-WEWS benefits which were quantifiable would seem to at least initially be enjoyed by parties other than those who might shoulder the immediate costs. This unequal distribution of costs and benefits between different groups in society may call for a redistribution of moneys by the state in the form of compensation paid, indirectly funded by taxpayers.⁷⁶

It should further be recalled that a principal aim of the Water Framework Directive is that water resources be recognised as a good with an intrinsic value of its own and thus states should be encouraged to make use of economic instruments to encourage the most efficient use of the resource. In short, states should develop regimes wherein abstractors would pay a fee for the water itself, which would be determined by market conditions. If abstractors in Scotland were required to pay a handsome fee for a resource which was previously free as part of their estate (and which presumably formed a composite part of the land's value at the time of purchase) then again this further supports a requirement that compensation be payable.

A contrary argument which can be posited, however, is that the imposition of the licensing regime, far from being a limitation on existing property rights, should be seen as a strengthening of property rights – particularly in the case of groundwaters. As the discussion in chapter 5 touched upon, shared resources subject to an absolute right to abstract are characterised by an absence of certain fundamental property-based

characteristics such as exclusivity, transferability and enforceability.⁷⁹ Such features are largely absent in respect of both groundwater and also water flowing in defined channels. A licensed right to take water, while it may be limited and may entail costs, nonetheless clearly remedies these difficulties.⁸⁰ As noted in chapter 5, licence-based prior right regimes in US states, in general, bestow upon users exclusive rights to abstract set volumes of water, which may be transferred to others for more profitable exploitation and enforced against secondary users.

The question of revocation of a licence

Abstraction licenses will not normally be time-limited in Scotland although it was suggested by the Scottish Executive that licences - which presumably would be granted for indeterminate periods - could be revoked or varied in particular circumstances where, for example, environmental damage might result from continuing to abstract at current levels.^{80a} This issue in itself may raise human rights concerns that bear examination. In respect of this question, debates surrounding recent English legislation, the Water Act 2003, which allows for existing water use licences to be revoked or varied, may be instructive here. While this legislative measure was being mooted, a debate emerged concerning whether such revocation powers would be compatible with the HRA.⁸¹ All new licences issued under the Water Act 2003⁸² will be time-limited⁸³ but in relation to licences which pre-date the reforms - and which were granted on an indefinite basis - if

⁷⁸ Chapter 6 provides a breakdown of preliminary cost estimates for abstractors.

⁷⁹ T. Voteler, 'The little fish that roared: The Endangered Species Act, state groundwater law, and private property rights collide over Texas Edwards aquifer' (1998) 28 *ENTL* (*Environmental Law*) 845 at p 875.

⁸⁰ These were discussed further in chapter 5.

^{80a} *Controlled Activities Regulations*, *supra* n. 45 at para 1.10.

⁸¹ See for example, R. Cunningham, 'Reform of water resource control in England and Wales' (2002) 13(1) *Water Law* 35; W. Howarth, 'Abstraction Licences, Property Rights and Compensation' (2002) 13 *Water Law* 95.

⁸² The bulk of which will come into force in 2006.

⁸³ Under s 25.

abstractors refuse to give up licences voluntarily the regulator would be empowered to revoke or vary a licence without any compensation from July 2012.⁸⁴

These provisions have been regarded as “the most politicised and most crucial to the success of [the] future [English water] system”.⁸⁵ Despite the concerns voiced regarding the legality of these provisions in terms of human rights obligations, the government has continually expressed the view that there is nothing in them which is incompatible with its obligations under the ECHR.⁸⁶ Given a lack of UK case-law in this area, Strasbourg jurisprudence may again be instructive here. In *Fredin v Sweden (No 1)*,⁸⁷ following a shift in emphasis in Swedish nature conservation law, the applicant’s licence to extract gravel from his land was revoked. Despite the fact that the licence was revoked rather than varied in any way, the Court followed the general pattern of Strasbourg decisions in this area and viewed that this action amounted to control on the use of property rather than a deprivation as such.⁸⁸ Rook has noted that “[such decisions] indicate that the revocation of a licence will be treated as a control of use rather than a deprivation, the control being directed, not to the actual licence itself, but rather to the applicant’s underlying business interests”.⁸⁹ Again perhaps this somewhat skewed reasoning is resonant of the weakness of the property provisions in the Convention. On the fair-balance test, a control of use does not generally require compensation and on such a basis, revocation of an abstraction licence in England (and Scotland for that matter) would likely not therefore require compensation. From the analysis of the court in *Fredin*, this is especially so if

⁸⁴ Under s 27. This power is confined to cases where the Secretary of State is satisfied that it is necessary in order to protect any waters, channels or underground strata, or any flora and fauna dependent on them, from serious damage.

⁸⁵ R. Cunningham, *supra* n. 81 at p 40.

⁸⁶ *Draft Water Bill : Government reply to the Ninth Report of Session 2000-01 from the Environment, Transport and Regional Affairs Committee* (HMSO, 2001); *Water Bill Consultation on Draft Legislation : Government Response* (HMSO, 2002).

⁸⁷ *supra* n. 66.

⁸⁸ Similar holdings of control of use for revocation of licences were found in *Tre Traktörer Aktiebolag v Sweden* (1989) 13 EHRR 309; *Pine Valley Developments Ltd v Ireland* (1991) ECHR Series A No. 22.

there are clear environmental objectives that could be pointed to by the state in justifying the revocation.^{89a} To this end, in *Fredin* the court was keen to affirm the legitimate objective of the state to take appropriate action in the name of environmental protection. Such environmental objectives could clearly also be pointed to in any revocation or variation of water abstraction or impoundment licences here in Scotland. Moreover, in supporting its decision that revocation could be made without compensation, the *Fredin* court pointed to the fact that the licensee had no legitimate expectation that the right would not be revoked.⁹⁰

Whereas this second aspect of the court's reasoning has been flagged up by commentators on English water abstraction reforms who have argued that those abstractors granted a "Licence of Right" under the Water Act 1936 could be said to have held a legitimate expectation not to have the licensed revoked,⁹¹ the issuing of abstraction licences under the new regime in Scotland – even if not expressly time-limited – could be done in such a way as to flag up the possibility that they could be revoked in the future. On Strasbourg authority, this would lend weight to the ability of the SEPA to vary or revoke the licence at a later date without compensation being payable.

As a final point here, it might be noted that although there is no UK case-law on this issue, Commonwealth authority on the interpretation of various state Bills of Rights may provide some insight into how the revocation of licences might be tackled by the domestic judiciary. In *La Compagnie Sucrière del Bel Ombre Ltée v The Government of*

⁸⁹ D. Rook *supra* n. 15 at p 77.

^{89a} *Fredin supra* n. 66 at para 53.

⁹⁰ *Fredin supra* n. 66 at para 54.

⁹¹ W. Howarth, *supra* n. 81 at p 96. Although even if this point were to be conceded, it is submitted that as noted, in any case the Strasbourg jurisprudence makes it clear that compensation would be a requirement in control of use cases on very rare occasions.

*Mauritius*⁹² - a case in which Mauritius legislation required landowners to renew their leases with tenant farmers – the Privy Council held that such restrictions did not amount to an acquisition of property under the Mauritius Bill of Rights but rather that they amounted to a restriction similar to a control on use under article one, protocol one of the ECHR which hence required no compensation.⁹³

Allen has argued that such an approach suggests that UK courts would treat regulation as a deprivation requiring compensation only on rare occasions.⁹⁴ It is true that there are further Privy Council cases in a similar vein dealing with property rights and breaches of Bills of Rights that support this contention.⁹⁵ The context within which these decisions were taken, however, should not be forgotten. Roberts notes that

[o]ne cannot help but feel that, in dealing with cases involving deprivation of property, the Privy Council has been wary in upholding traditional common law notions of Property rights, lest they be accused of imposing British standards upon countries which may have chosen, through democratic means, to adopt more corporatist principles of property ownership.⁹⁶

Against this political backdrop then, perhaps the Privy Council's approach to interferences with property in these contexts may inform little in respect of the imposition of the post-WEWS regime.

Positive obligations of public authorities under HRA

Another issue which is of relevance in respect of potential human rights concern relates to the requirements placed upon states, and hence public authorities under the HRA, to

⁹² [1995] 3 LRC 494.

⁹³ *ibid.* at 506 *per* Lord Woolf.

⁹⁴ T. Allen, 'The Human Rights Act (UK) and Property Law' in J. McLaren (ed), *Property and the Constitution* Oxford, Hart Publishing, (1999) at p 152.

⁹⁵ such as *Juana v. Att. Gen of Guyana* [1971] A.C. 972; *Malaysia v. Selangor Pilots Association* [1978] A.C. 337; *Government of Mauritius v. Union Flacq Sugar Estates Co. Ltd* [1992] 1 W.L.R. 903.

ensure that the regulatory regimes that they operate positively guarantee certain rights to citizens affected by the regime.^{96a} The nature of these positive obligations have been usefully summarised by Harris, O'Boyle and Warbrick as follows:

- (a) the obligation of the authorities to take steps to make sure that the enjoyment is effective;
- (b) the obligation of the authorities to take steps to make sure that the enjoyment of the right is not interfered with by other private persons; and
- (c) the obligation of the authorities to take steps to make sure that private persons take steps to ensure the effective enjoyment by other individuals of the right.^{96b}

Bearing the above in mind, the potential problem for any new licensing regime in Scotland is that even though the imposition of the licensing regime itself may be compatible with Convention rights, it might be argued that regulators may permit abstractors to carry out activities that breach the human rights of others which would be contrary to public bodies' positive obligations in this regard. Perhaps the most obvious example of this would be where a licensed abstraction has the effect that it causes subsidence and perhaps damage to buildings on adjoining land. As noted in chapter 3, while the current common law position in this regard is unclear in Scotland, in England the position seems relatively well settled that a removal of support would not be actionable under support or negligence and arguably Scots law may be determined in the same way. The current state of the common law, however, would not necessarily stand in the way of any action brought, if the activities complained of amounted to a breach of certain human rights.^{96c}

^{96a} N. Roberts, 'The Law Lords and Human Rights: the experience of the Privy Council in interpreting Bills of Rights' (2000) 2 *EUJLR* 147 at p 176.

^{96b} This is because certain convention rights are worded in such a way as to impose such positive obligations. The wording of article 8 and article 1, protocol 1 is discussed in this sense below.

^{96c} Harris, Boyle and Warbrick *supra* n. 59 at p 284.

^{96c} Indeed under the 'horizontal' effect of the convention it may be that under the current common law an action could be brought by one party against another on the grounds that the existing common law relative to support of underground percolating water (if it does not offer a remedy) ought to be tempered by

The causing of subsidence in these circumstances may arguably be in breach of article 1, protocol one and also article 8 of the convention. Article one, protocol one has already been discussed in detail. Article 8 in general provides for the right to private and family life and prescribes that

- 1) Everyone has the right to respect for his private and family life, his home and his correspondence.
- 2) There shall be no interference by a public authority with the exercise of this right except such as is in accordance with the law and is necessary in a democratic society in the interests of national security, public safety or the economic well-being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others.⁹⁷

How does article 8 apply?

Although article 8 is generally perceived as protecting citizens' rights against state inroads into privacy, it has also been applied in other ways on both a Strasbourg and domestic level. In particular, the article has been interpreted as bestowing a right of occupation to a home. The right has, for example, been manifest as protecting occupants of homes from the imposition of new occupancy agreements,⁹⁷ toxic emissions,⁹⁸ severe dust contamination,⁹⁹ excessive noise¹⁰⁰ and subsidence.¹⁰¹

In relation to a hypothetical subsidence case, at first glance, article 8 would only seem to be of relevance where the buildings so-affected could be described as being 'homes'. Strasbourg jurisprudence has taken a somewhat liberal stance, however, in interpreting what is meant by a 'home' in this context. The term 'home' does not simply relate to the

convention rights. For a discussion of the horizontal effect see I. Leigh & L. Lustgarten, 'Making Rights Real: The Courts, Remedies and the Human Rights Act' (1999) *CLJ* 509.

⁹⁷ *Gillow v UK* (1989) 11 EHRR 335.

⁹⁸ *Lopez Ostra v Spain* (1994) 20 EHRR 277.

⁹⁹ *Khaunt and 180 others v UK* 26 EHRR CD 212. Although the case failed on the facts.

¹⁰⁰ *Powell and Rayner v UK* (1990) 12 EHRR 355.

¹⁰¹ *Marcic v Thames Water Utilities Ltd* [2004] 2 A.C. HL. This is discussed in more detail below.

abodes of owner-occupiers but has been interpreted to include caravans,¹⁰² the domiciles of tenants¹⁰³ and even those unlawfully occupying premises.¹⁰⁴ More importantly, however, the definition of home has in some circumstances, however, been extended to include business premises. In *Nietmietz v Germany*, the case concerned the state's search of a lawyer's office. In response by a claim by the state that article 8 only applied to homes rather than business premises it was noted that:

As regards the word 'home', appearing in the English text of the Article 8, the European Court observes that in certain Contracting States... it has been accepted as extending to business premises. Such an interpretation is, moreover, fully consonant with the French text, since the word 'domicile' has a broader connotation than the word 'home' and may extend, for example, to a professional person's office.¹⁰⁵

On the above analysis therefore, article 8 may be of significance in relation to a subsidence stemming from a licensed abstraction which causes damage to domestic premises and perhaps business premises. The key aspect of article 8 in this regard is that it does not merely guard against protection against direct state infringement of these rights but, as noted above, also bestows a positive obligation on states in this regard. This is because, as Dignam and Allen have noted, "[t]he notion of 'respect' in Article 8 implies that the national authorities are ... not only under a duty to refrain from acts that might constitute a violation of Article 8 but also have a positive obligation to secure such respect".¹⁰⁶ In addition to article 8 concerns, article one, protocol one may again be relevant in a subsistence case. While the second and third limbs of the article refer merely to negative obligations – ie protection from state appropriation or control – the first limb of the provision sets out a positive right to the peaceful enjoyment of

¹⁰² *Buckley v UK* (1996) 23 EHRR 101; *Mabey v UK* (1996) 22 EHRR CD 123.

¹⁰³ *S v UK* (App. NO. 11716/85).

¹⁰⁴ *Hunter v Canary Wharf* [1997] 2 All ER 426, per Lord Cooke at pp 458-459 (dissenting).

¹⁰⁵ (1992) 16 ECHR 97 at para 30.

¹⁰⁶ A. Dignam and D. Allen, *Company Law and the Human Rights Act 1998* *supra* n. 16 at para 4.2. This positive obligation placed upon states may be relevant generally across a number of convention rights – see

possessions and therefore obligations may again be placed upon states to ensure that the regulatory regimes they operate uphold this right.¹⁰⁷

The key point about the state need to uphold these positive rights is that this requirement may be breached even if the action complained about involves two private parties. Rook has noted that

[t]he European Court has acknowledged that Article 8 imposes obligations on the states which involve : 'the adoption of measures designed to secure respect for family and private life *even in the sphere of the relations of individuals between themselves* (*X and Y v Netherlands* (1985) 8 EHRR 235 at para. 23)...'. Thus the state is held accountable for its failure to remedy private abuses and violations by taking positive steps to legislate or carry out other preventative action.¹⁰⁸

It seems that positive obligations (in relation to those convention articles that are characterised by positive rights) will be bestowed upon states in respect of the actions of private parties particularly where there is some sort of link that can be established between the offending acts and the regulatory regime of the state. So for example in *Lopez Ostra v Spain*¹⁰⁹ the public authority concerned was not itself responsible for the offending polluting emission from a factory that was deemed contrary to article 8. The factory, however, had been built on state-owned land with the assistance of a public subsidy. This link, therefore, between the offending act and the state's regulatory regime was sufficient to establish in the circumstances a breach of the state's positive obligations in respect of article 8. It may be that such a regulatory link is not required at all, however. As the European Commission in *Lopez Ostra* noted, notwithstanding the extent of direct or indirect responsibility attributable to the state or its public authorities

for example *A v UK* (1999) 27 EHRR 611 concerning the interplay between the law relating to the reasonable chastisement of children and article 3.

¹⁰⁷ See for example, *Oneryildiz v Turkey* (48935/99) (Unreported, June 18, 2002) (ECHR)

¹⁰⁸ D. Rook, *supra* n. 15 at p 50.

¹⁰⁹ *supra* n. 98.

in general, article 8 "oblige[s] the State to protect the rights of the individual even against the actions of third parties".^{109a}

In any case, following this reasoning, if SEPA were to grant a licence to an abstractor to draw a certain volume of water and this had the effect of causing subsidence to neighbouring land and buildings thereon, then, under section 6 of the HRA, this could incur a breach of SEPA's positive obligations under article 8 (if it were a home or perhaps office premises) and article 1, protocol one. Of course as discussed above, neither article 8 nor article one, protocol one is an absolute right and a state will only be in breach if it fails to fulfil the fair balance tests applicable to such rights. Although there appears no Scottish domestic authority on such matters, English case-law is instructive here both in respect of the extent that positive obligations are required of public bodies under the HRA and also how the fair balance tests should operate in with regard to positive obligations.

In *Marcic v Thames Water Utilities Ltd*¹¹⁰ the salient facts were as follows: Mr. Marcic lived in a family home in Middlesex. At times of heavy rain, flood water invaded his front garden, reaching the exterior brickwork of his house but not entering the house itself. From 1992 there were one or two flooding incidents a year, however, this rose to four in 1999 and four or five in 2000. As a result of the flooding the house suffered from damp and musty smells and the wall and ceiling cracked suggested subsidence. The garden was highly contaminated. Although the problem did not cause any clinical illness or injury to Mr. Marcic or his family it was clear that the value of Mr. Marcic's property had been seriously and adversely affected.

^{109a} *ibid* at para 55.

At first instance, in the Technology and Construction Court ("TCC"), the defendant water utility company was found to have a non-feasance immunity in respect of common law nuisance.¹¹¹ Nor could a relevant duty be extracted from the Water Industry Act 1991. Following the Strasbourg decisions of *Lopez Ostra v Spain*¹¹² and *Guerra v Italy*,¹¹³ however, the TCC found that the effects of the flooding were covered by article 8 of the ECHR and also article one, protocol one. The inactivity of the public authority in providing an effective remedy could not be justified and was, therefore, unlawful under ss.6 and 8 of the HRA.

Certain aspects of the TCC's decision were overturned by the Court of Appeal.¹¹⁴ In particular, it was found that there was no immunity for a common law action to be brought for nuisance in the circumstances and hence damages should be awarded for this common law breach rather than any breach of human rights. Significantly, (albeit that the issue was not paid much attention by the court) the court also dismissed the public authority's challenge to the claimants' case under human rights law (based on the existence of a statutory complaint scheme), stating that the court had not been persuaded that the Judge was wrong to hold that Thames had infringed the claimant's Convention rights. In the court's view, notwithstanding the legitimate state aim in setting priorities in respect of public sewage works and the existence of a statutory complaints scheme, these factors, by themselves, may not afford the Thames authority a full defence in the absence of compensation. As Phillips L.J. noted

[i]t seems to us at least arguable that to strike a fair balance between the individual and the general community, those who pay to make use of a sewerage system should be

¹¹⁰ FWCA 14 64; [2002] 2 W.L.R. 932 (CA).

¹¹¹ *Marec v Thames Water Utilities Ltd (Preliminary Issues)* [2001] 3 All ER 698 (QBD(T&CC)).

¹¹² *supra* n. 98.

¹¹³ *Guerra and Others v. Italy* (1998) 26 E.H.R.R. 357 ECHR.

¹¹⁴ *supra* n. 110.

charged sufficient to cover the cost of paying compensation to the minority who suffer damage as a consequence of the operation of the system.^{114a}

Marcic was subsequently appealed to the House of Lords¹¹⁵ where it was held, *inter alia*, that the existence of a statutory complaints scheme, in effect, balanced the interests of those customers whose properties were subject to flooding with the remainder of its customers whose properties were drained by the sewers, by imposing a general drainage obligation on Thames and entrusting enforcement to an independent regulator.^{115a} In the Lords' view Mr. Marcic could have pursued his complaint with the independent regulator under the statutory scheme but had chosen not to do so. Moreover, Parliament had acted well within its bounds as a policy maker and the statutory scheme was compliant with the 1998 Act. In short, according to the Lords, the fairness of Thames Water's scheme of priorities was not for the courts to assess because Parliament had properly assigned that responsibility to the Director General, as regulator, who oversaw operation of the scheme.¹¹⁶ The Lords were keen not to be seen to be usurping the role of policymakers in balancing individual interests such as Marcic's against the general interest. The court noted that a determination such as one regarding the provision of a fair system of priorities for sewage was one better taken by regulators than in the courtroom.^{116a} Rather than picking through the details of the scheme, in reaching its judgement, the Lords merely considered that the statutory scheme as a whole was in accordance with the Convention and sufficient to comply with the state's obligations under article 8. Parliament enjoyed a wide discretion in respect of article 8, and even though in the circumstances, there had been clear administrative difficulties in administering the statutory scheme in this instance, the

^{114a} at para 113.

¹¹⁵ *Marcic v Thames Water Utilities Ltd* [2004] 2 A.C. 114.

^{115a} It is worth making the point here that the regulator is also under a duty to act in accordance with the ECHR and thus an action could be brought on the grounds of breach of statutory duty.

¹¹⁶ *Marcic* *supra* n. 115 at 38, 70-71.

legislative framework provided remedies for flooding victims, was subject to judicial review and hence struck a reasonable balance between the relevant competing interests.¹¹⁷ As noted by the court,^{117a} this approach can be seen as consistent with that taken by the Strasbourg court in *Flatton v The United Kingdom*.¹¹⁸

The key question in respect of the present analysis would be that if subsidence were to occur as a result of a licensed abstraction (and there was deemed to be no remedy at common law) it would need to be determined in what circumstances SEPA might be held to be acting contrary to the fair balance test or specific exceptions set out in article 8. In so far as article 8 is concerned, it may be recalled that the 2nd para of the article allows state interference when this is in accordance with national security, public safety, or the economic well-being of the country, or for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others. In relation to a subsidence case, the caveats which would be relevant would relate to whether the subsidence could be justified for the economic well-being of the country, or to protect the correlative rights and freedoms of others. From the analysis above, in respect the right to peaceful enjoyment of possessions, similar questions might be asked to determine whether the state fulfilled the 'fair balance' test.

In overcoming these tests, clearly where the onus of proof lies is important. Trotman has suggested that the burden of proof of lack of justification in respect of a state or public body's failure to take positive steps to protect convention rights should lie with

^{116a} *supra* n. 115 at 38.

¹¹⁷ *ibid* at 41-43, 47.

^{117a} *ibid* at 41.

¹¹⁸ (2003) 37 E.H.R.R. 28. This view has been criticised, however, on the basis that such an approach fails to take into account procedural failings which may themselves fall short of convention rights - see for example, H. Wilberg 'Public Resource Allocation, Nuisance and the Human Rights Act 1998' (2004) 120 LQR 574.

the claimant as the situation is clearly different from one in which the state is directly acting to contravene certain human rights.¹¹⁹ This approach was not, however, taken in *Marcic* where the TCC at first instance held that the burden of proof in relation to this margin of appreciation fell on the state to prove that there was good reason as to why no action was taken to prohibit conduct which might abrogate human rights.¹²⁰ As noted above, on appeal to the Lords, the existence of the statutory scheme was deemed adequate in terms of the state fulfilling its convention obligations. Notwithstanding this, there is nothing in the Lords' judgement to suggest that the burden of proof in respect of the margin of appreciation enjoyed by the state would fall upon the applicant in respect of positive obligations.

Leaving aside the issue of proving the justification for a failure to act, and assuming for the time being that there is no right of support of underground water at common law in Scotland, at least in so far as a breach of article 8 is concerned, the economic interests argument is a significant one in this context. SEPA might remedy the fact that presently there might be no remedy available in respect of an abstraction that causes subsidence in a number of ways but each would hold economic consequences. For example, it could become a licence condition that abstractors would pay for any subsidence caused by their abstraction, or alternatively, SEPA could take on liability for abstractions itself and spread the costs (or estimated costs) of potential liability amongst abstractors. Clearly either move may involve consequences of an economic nature and moreover such initiatives may have little bearing on un-regulated abstraction activities. If SEPA were to agree to pay compensation to affected parties, passing the potential costs of this to all licensees would, of course, add to the regulatory costs of the regime. The imposition of

¹¹⁹ T. Trotman, 'Local authority liability and defective buildings: the implications of *Marcic Thames Water Utilities Ltd.*' [2003] 19 (1) *Const. LJ* 17 at p 20.

¹²⁰ *supra* n. 111 at para 71.

such costs might run contrary to a general state need to encourage investment into the exploitation of water resources. Writing in to the licence conditions that licensees would incur liability for any subsidence again would perhaps be unpalatable to would-be investors.¹²¹ The other alternative would be for SEPA to simply to prohibit abstractions where it was likely to cause subsidence. This option might be problematic in that it might be difficult to determine when such subsidence might occur and moreover could be seen as being incompatible with the existing rights of those proprietors who are seeking to abstract water. In this respect it should be recalled that one of the areas of state discretion articulated in article 8 relates to situations where enforcing the rights set out in the provision would be incompatible with the human rights of others. Similar arguments may be encountered in respect of article one, protocol one which again is not an absolute right. It is subject to a fair balance test which, as alluded to above, includes determinations related to both proportionality and the state margin of appreciation.¹²²

To what extent some of the arguments outlined above are manifest in the case-law setting out the general nature of the current common law position may be an important factor in establishing the state's case for infringement of the rights set out in article 8 and/or article one, protocol one. If the common law currently excludes a claim for subsidence in such cases then there may in fact be sound policy reasons for so doing. As noted in chapter 3, however, this kind of reasoning is largely absent from (English) common law cases which have dealt with this issue. Rather, decisions in this area have largely stemmed from the basic Blackstonian premise that the right to abstract

¹²¹ It is conceded, however, that this issue may be of little significance in that there is only one reported case of removal of support of underground water in Scotland - *Bald v Alba Colliery* 1854 16 D 870.

It needs to be borne in mind that an increase in abstractions in the post-WEWS environment (and perhaps a change in climatic conditions) may lead to more of such cases arising in the future.

¹²² In relation to this right to possessions set out in the first rule, the court must determine whether a 'fair balance' has been 'struck between the demands of the general interest of the community and the

underground water is an absolute one. It was noted that there has been little discussion of any policy rationale underpinning the law, based, for example, on economic considerations or a pro-development agenda. If indeed it is held that there is no right to support of underground water under Scots common law, then given the largely unsatisfactory reasoning inherent in the case-law¹²³ and inconsistency with the law of support in other contexts¹²⁴ then the state of the common law in this regard would not be much of an aid to SEPA's case. The ability of parties to take out insurance against the effects of subsidence as a 'self-help' remedy in this context may lend some weight to the current state of the law (if it provides no remedy). Nonetheless, if the court was not convinced that the lack of appropriate remedial action by SEPA sufficiently took into account the balance of interests required in article 8 then it may be that, at the very least, the imposition of some sort of statutory scheme to handle complaints in respect of any subsidence which might result from abstractions should be contemplated by the Executive.

Moreover, despite the Lord's view in *Marric* that there was no human rights based remedy available, Lord Nichols did express the point *obiter* that in the instance of external sewage flooding, "if it is not practicable for reasons of expense to carry out remedial works for the time being, those who enjoy the benefit of effective drainage should bear the cost of paying some compensation to those whose properties are situated lower down in the catchment area and who, in consequence, have to endure intolerable sewer flooding..."¹²⁵ Given that in a subsidence case, one party (the abstractor) clearly may

requirements of the protection of the individual's fundamental rights – *Sporrong and Lönnroth v Sweden* *supra* n. 44 at para 69.

¹²³ As have noted the one case in this area may, depending on its interpretation, suggest otherwise – *Bald v Alton Colliery* *supra* n. 121.

¹²⁴ See chapter 3 for this discussion.

¹²⁵ *Marric* *supra* n. 115 at paras 44–45.

profit while the other party, as a result of the subsidence, loses, Lord Nichol's view may lend support for the notion of the need to pay compensation in such circumstances.

Positive obligations and the removal of water

For completeness it can be noted that while the removal of water by licensed abstraction causing subsidence may be a somewhat rare occurrence in Scotland another far more common set of circumstances could arguably also raise human rights concerns. A case might also proceed on the basis of a breach of SEPA's positive obligations under the first limb of article one, protocol one, where a licensed abstraction has taken water away from beneath the land of another. The ground of complaint would simply be that property has been taken away by another under the auspices of SEPA's licensing regime. As alluded to above, even though it is probable that landowners do not own water on or beneath their land itself, the usufructary right to take water – whether it be in defined channel or percolating through the ground – is in itself a property right and should therefore fall within the ambit of possessions. So in theory a landowner might argue that this 'possession' has been removed by an abstractor under the auspices of a state-run licensing regime which is contrary to the SEPA's positive obligations in this regard.

In this sense, it might well be a relatively straightforward task for the state to overcome the 'fair-balance' test in allowing licensees to abstract water from beneath the lands of another by referring to the migratory nature of water resources and pointing to the impracticality of any other solution. In most cases water could simply not be abstracted at all if a remedy were to be made available to another party whose water has been taken from beneath his feet or from a river or stream running through his land. Such

reasoning is manifest, for example, in much of the US case-law relating to the 'capture' of hydrocarbons.¹²⁶

Additionally, it may be that at least in relation to groundwater the case would fall at a prior hurdle, however, without the need for any state justification of fair-balance. This is because under the first limb of protocol one, article one, "interferences with property which arise out of private law rights and obligations are considered to define the scope of the property right, rather than to interfere with it."¹²⁷ For groundwater therefore, the property right concerned – of landowners to abstract water – is expressly limited by the actions of others who may draw the whole or part of that water away prior to the landowner taking it into possession.¹²⁸ This action therefore defines the right and does not represent an interference with it. In relation to water in defined channels, the situation is different in the sense that riparians have a right to a continuing flow of the water.¹²⁹ If the actions of an abstractor or impounder serve to seriously deplete the water downstream then this goes beyond the definition of the right under private law and may then lead to a question of whether SEPA has fulfilled its fair balance test.^{128a}

Efficiency

Efficiency can be sought in a number of ways, including the formation of a water market to facilitate trades between market actors and the use of economic carrots and sticks to encourage most efficient use. Equally a regime will seek to avoid inefficiency in other ways, such as ensuring low transaction costs, facilitating dispute avoidance, providing effective dispute resolution programmes and eliminating unnecessary regulation. In this

¹²⁶ Discussed in chapter 4.

¹²⁷ Coppel, *supra* n. 43 at 376; *Baner v Sweden* *supra* n. 52.

¹²⁸ Discussed in chapter 3.

¹²⁹ Discussed in chapter 3.

context efficiency is fundamentally concerned with reducing costs for industry participants and facilitating the most economically efficient (profitable uses) in society. As noted below, it is also argued that the establishment of efficiencies in this sense may contribute to a reduction in waste, conservation and allocation of water to the most beneficial uses. The extent that such other 'efficiencies' can be achieved, however, is a moot point and is debated below.

Water Markets

The creation of a water 'market' would in theory create incentives for conservation of water resources by offering water rights' holders the chance to sell their excess rights to others. This lies in stark contrast to Hardin's nightmare scenario in respect of the problems that might be engendered from a 'common pool' approach to shared resources resulting in overuse and ultimately decimation of the resource.

As noted in chapter 5, one of the perceived advantages of a licence-based regime is that it may facilitate the trading of licences in such a fashion. From a basic economic standpoint, it is argued in simple terms, that if the profits to one party outweigh the cost of purchasing property rights from another (at a price higher than the potential benefits to the first party) then discounting transactional costs, it may be economically efficient for the trading of a property right to take place.¹³⁰

^{128a} Although any such debate would be coloured by the fact that prescriptive rights in water in defined streams may be established.

¹³⁰ See the discussion at chapter 5.

The post-WEWS regime in Scotland will facilitate such trading.¹³¹ An initial question that can be asked relates to whether current rights to take water at common law in Scotland could already be traded in such a way. If one takes the example of groundwater in Scotland, it might be argued that a landowner is quite entitled to sell a personal right to others to come onto his land and draw water away¹³² and thus exploit the water resource in a more efficient manner than he could himself. Moreover a servitude right to take water may be capable of being created which, being a real right, would survive a change of ownership. The right of *aquaebaustus* is a recognised servitude under Scots law and covers the taking of water from some source such as a well or a stream.¹³³

The key point about licence trading, however, is that a right granted under licence is both quantifiable and exclusive in a manner that absolute rights to abstract groundwater or riparian rights to take surface water under the common law may not be.¹³⁴ An abstraction licence confers upon the owner a right to abstract a defined volume of water which importantly is protected against the actions of others – thus a monetary value can more easily be attached to the value of the licence. As alluded to in chapter 3, the same cannot be said for rights to water under the common law which although (in respect of groundwater) are often labelled as ‘absolute’, may in practice be worthless if rendered obsolete by the actions of others that serve to draw the water away (leaving the aggrieved user with no remedy at law). Having said this, it is possible that some situations may arise where given a lack of prevailing knowledge concerning quantities of underlying

¹³¹ In addition to licences, rights to abstract/impond under General Binding Rules will also be capable of being traded – see Scottish Executive Environment Group, *Controlled Activities Regulations* (April 2004 : Paper 2004/8) at para 1.18 (although quite how this might be achievable in so far as activities under GBR’s may not require to be registered is unclear).

¹³² Although as a personal right, it would not survive a change in ownership.

¹³³ See W. Gordon, *Scottish Land Law* (1999) at para 7-83.

¹³⁴ Although if a licence is for a limited period of time or may be revoked without compensation then trading becomes less attractive. This point is discussed below.

groundwater, a licence may be granted in respect of a volume of water of which pumping is not sustainable, but as the regime develops and knowledge-bases expand such problems should be alleviated.¹³⁵

As well as promoting the most efficient use of the resource it has also been argued that trading may also help facilitate overall conservation of the resource. For example, as Gregory has noted in respect of water trading in the USA

[a] developed water market reduces water scarcity by increasing the value some place upon water. In other words, some water users may not be placing an appropriate value on the water that they use because they either receive it for free, pay a subsidized rate for it, or currently use more than they need. If those wasteful users could sell quantities of excess water, then they would realize that wasted water is equivalent to wasted money. Then, they have the economic incentive to seek and employ less wasteful uses for their water. In some instances, water users might decide that the value they would reap from selling all of their water may surpass the value of their intended use for the water. In such cases, the water had been inefficiently allocated prior to the water market; now it could be devoted to a use that society economically valued more.¹³⁶

A pro-market stance like that taken by Gregory, may posit that limitations on the ability to trade water rights in the name of protecting the environment and other regulatory tools will increase trading costs, prohibit otherwise efficient trades and thus hinder the efficiency of water allocation. An extreme pro-market stance holds that regulation is not necessary at all and that operation of the market will itself lead to efficiencies and ultimately conservation of the resource as users will conserve water use and sell the excess to other market participants.¹³⁷

¹³⁵ This situation also raises the possibility of conflict between different licensees. Moreover the costs of generating this knowledge - passed on to all users - may counterbalance any efficiency gains.

¹³⁶ A. Gregory, 'Groundwater and its future: competing interests and burgeoning markets' 11 *Stan. Envtl. L.J.* 229 at p 249.

¹³⁷ See for example Morriss, Yandle & Anderson, 'Principles for Water' (2002) 15. *Tul. Envtl L.J.* 335 at p 336.

The interaction between law and economics is an uneasy one. There is perhaps an inherent resistance from lawyers, with their emphasis on delivering justice or fairness that economic efficiency could have any role to play in such an analysis. However, in a world of scarce resources, the need to avoid waste and ensure their most efficient exploitation assumes some sort of moral value. Indeed, if one takes this argument further it may be morally repugnant to pursue policy goals that create inefficiencies.^{137a}

It has been argued, however, that facilitating efficiency as between different market actors should not necessarily be seen as an overarching aim in respect of substance like water which can be considered a 'public good'¹³⁸ and thus cannot be left unfettered to the vagaries of the market. This argument stems from the fact alluded to in the beginning of this section that the notion of efficiency may hold different connotations. There is an implicit assumption here that what might be efficient in fiscal terms for a limited number of market actors may not necessarily promote the uses that are the least wasteful in environmental terms and/or most beneficial in economic and other senses for society as a whole.¹³⁹

Leaving aside that argument for the moment, while pro-market contentions might be based upon a 'perfect market' theory, it shall be illustrated below that in practice such an argument is flawed in respect of water.

^{137a} B. Pettet, *Company Law* (2001) at p 71.

¹³⁸ In strict terms a 'public good' is one that is both public and indivisible in that it cannot be shared amongst the public in the sense that some may have access to it while others are denied such access and it is rather shared freely (although not necessarily equally) between the group – see T.J. Anderson & P. Snyder, *Water Markets: Priming the Invisible Pump* (1997) at pp 113-114. While water resources are not strictly public goods in this sense, nonetheless given the resource's importance to human and other life, and its migratory characteristics, it can be considered as such – J. Dellapena, 'The Importance of Getting Names Right: The Myth of Markets for Water' (2000) 25 *WMMELPR* 317 at p 329; J.L. Fortuna, 'Water Rights, Public Resources and Private Commodities: Examining the Current and Future Law Governing the Allocation of Georgia Water' (2004) 38 *Ge Water L. Rev* 1009 at pp 1015-1016.

¹³⁹ See for example, C. Landry, 'Buy that fish a drink: The United States' approach to environmental protection in an era of water marketing' [2001] 12 *Water Law* 240.

Potential obstacles to water trading

While water trading may be a theoretical boon, at least in some senses, in practice it may be no easy task to realise these benefits. Despite moves towards the embracement of markets for water in jurisdictions such as Chile,¹⁴⁰ the USA¹⁴¹ and England it has been noted that actual markets in free-flowing water are in fact extremely rare and tend, in practice, to function between similar users in close proximity to one another.¹⁴² A review of experience in England suggests both that the nature of a water as an ambient and public resource dictates that transactional costs may be prohibitive in allowing any water market to function effectively. Moreover, market actors may currently be hamstrung by regulatory requirements that dampen enthusiasm for trading.

The English experience

While trading to date in England and Wales has been relatively rare, policy makers south of the border have for some time been keen to see trading extended as they agree with the well-worn view that it will encourage the more efficient and thus sustainable use of the resource:

...in principle, abstraction licence trading should be promoted as an effective means of achieving the optimal distribution of water resources within and between different sectors of use and thus contributing to sustainable development.¹⁴³

¹⁴⁰ See for example, C. Bauer, 'Slippery Property Rights : Multiple Water Uses and the Neoliberal Model in Chile 1981-1995' (1998) 38 *NRJ* 109.

¹⁴¹ Reference can be made to the discussion of trading in western US states in N.K. Johnson & C.T. DuMars, 'A Survey of the Evolution of Western Water Law in response to Changing Economic and Public Interest Demands' (1989) 29 *NRJ* 347.

¹⁴² J.W. Dellapenna, *supra* n. 138 at p 324.

¹⁴³ DETR *Economic Investment in Relation to Water Abstraction: A Consultation Paper* (April 2000) available at <http://www.environmentalengland.co.uk/consult/ecowater/index.htm> last visited, 10th March 2003.

Under the current legislation operational in England and Wales¹⁴⁴ the trading of licences is curtailed somewhat by the fact that generally speaking a licence holder must be the occupier of the land upon which the water is to be drawn from.¹⁴⁵ The Water Act 2003 will amend this position to stipulate that a mere right of access to the land (which could be negotiated with the landowner) would be sufficient for a licence to be granted.¹⁴⁶ On a *prima facie* basis therefore, if trading is to be encouraged in Scotland then a similar method ought to be adopted. In fact the approach that has been suggested to be adopted by the Scottish Executive is that licences shall be 'activity specific' and that in so far as any trade would take place, mere notification of a change in 'responsible person' would be required if all pre-existing licence conditions could still be met.¹⁴⁷

Trading south of the border may again currently be stifled by the fact that at present licences are only granted in respect of abstractions where the land upon which the water is to be used is specified.¹⁴⁸ This may mean that would-be purchasers of licences would require to seek variation of a licence prior to purchase, which may entail additional transactional costs and thus make the trade less attractive. Under the reforms set out in the Water Act 2003 this problem may be alleviated to some extent as the licence will merely require to state the general purpose for which the water is to be used and thus

¹⁴⁴ s 35, Water Resources Act 1991 (WRA). At the time of writing the Water Act 2003 is not yet in force.

¹⁴⁵ The Environment Agency has listed a number of ways that trades can presently take place under the English system: 1, outright disposal of the land on which abstraction takes place; 2, renting or leasing the land; 3, relinquishing the licence while continuing in possession of the land, then granting occupational access to the land to another who may then apply for the licence; 4, by varying the licence to cover a small quantity then granting rights of access to the land to another; 5, selling the whole or part of the abstracted water to other users; 6, first entering into an agreement to relinquish a licence for payment and then applying for a new licence on other land in the vicinity of the original licence – see DLFRA, *Tuning Water Taking – Government Decisions Following Water Consultation of the Economic Instruments in Relation to Water Abstraction* (June 2001), Appendix 2.

¹⁴⁶ This in itself may bring with it significant transactional costs. For example, witness the experience in other contexts with 'ransom strips' – whereunder a previous owner may have retained ownership of a small strip of the land concerned in order to either profit from or control its future development – see P. Finch, 'Ransom Strips and Public Rights of Way' (1999) 14 RPLR 1.

¹⁴⁷ *Controlled Activities Regulations* *supra* n. 131.

¹⁴⁸ s 46(4) WRA.

lends itself more flexibility to prospective trades.¹⁴⁹ As the time of writing the Scottish situation is unclear in this respect. As has been noted, it is anticipated that a trade may be made in Scotland with minimal regulatory interference in so far as the licence conditions can be met. It is unclear whether a change in use of the water would affect licence conditions in individual cases.

While not trying to pour cold water on policy makers' aspirations in this regard, the Environment Agency,¹⁵⁰ has reacted cautiously to the government's proposals to further encourage the trading of water licences in England and Wales. A number of additional potential obstacles (beyond those tackled in the Water Act 2003) were identified which may also be of import in Scotland including: the geographical and bounded nature of water resources would mean that trades would normally be confined to defined catchment units or units linked by some sort of transfer mechanism.¹⁵¹ Such problems may be compounded by the fact that the transport of water is generally expensive and this factor may make an otherwise efficient trade prohibitive.¹⁵²

As noted above, what might be an efficient trade on a local basis as between two market actors may not be efficient from a wider or national perspective, at least in the sense of protecting more beneficial and sustainable uses in society. To this end it may further be suggested that the acceptance of water licence transfers by regulators would have to take into account the fact that certain water uses generate wastewater which can cause environmental problems. Moreover, as noted in chapter 5, correlative rights regimes –

¹⁴⁹ Which amended s 46(4)WRA. This approach is not without its drawbacks, however. In particular, there is a need to countenance that the environmental impacts of abstraction may be site specific.

¹⁵⁰ The current regulator for water abstractions in England and Wales.

¹⁵¹ The Environment Agency response to *Tuning Water Taking* *supra* n. 145 at para 4.1.

like that incumbent in California – favour overlying uses as such activities may at least partially replenish the aquifer from which the water is drawn, unlike the case where the water is to be used on non-overlying land. So in the context of the Scottish system, if a trade is to take place where the water is to be used for a different purpose, then the regulator may need to ensure that these potential problems are evaluated prior to authorising the trade. Furthermore, the possible redistribution of abstraction points from groundwater or surface streams – even if the water use is to be the same – would require examination as the environmental impacts of abstraction may in fact be site specific.¹⁵³

Even if a trade is ultimately accepted by the regulator, undeniably the greater the regulatory involvement in the trade, the higher the transactional costs will be for the parties concerned. This fact may prejudice the ability to make an economically efficient trade. An inherent tension between two different aims of such a water governance regime¹⁵⁴ can be identified here. While the ability to trade without high levels of interaction with the regulator will be key to any successful developing market in water licences designed to encourage the most economically efficient use of the resource (at least in terms of optimum uses within market actors), interaction with the regulator in some shape or another may be required to ensure the absence of negative environmental consequences and/or promote more efficient uses for society in general.

¹⁵² *ibid.* It was noted above that water markets where they do arise tend to be manifest across small localities rather than on a national scale.

¹⁵³ *ibid.*

¹⁵⁴ identified in chapter 5.

Markets in optimum conditions don't always work

Leaving aside such specific difficulties with water markets as transactional costs and also the need to countenance more holistic views of efficiency to recognise the public nature of water, there are other flaws that can be identified with a purely market-based system of property allocation in general. First, in relation to identifying the respective efficiency of competing uses, it may be difficult to predict what the perceived costs and benefits of these different activities are. The value of water exploitation to competing users may in many cases be speculative and predicated on no more than assumptions, expectations and perhaps in some cases, hopes. Moreover, experience may suggest that it is not always the most efficient uses that will prevail in the market place, and rather it may be the case that the party with the most resources is simply able to wield its monetary clout over others in the market place even where its use is not strictly speaking the most efficient. A case in point in this regard is that relating to Los Angeles water abstraction in which since the 1940's vast amounts of water have been abstracted by the Department of Water and Power from the Mono Lake causing over-abstraction and draw-down and severe environmental consequences.¹⁵⁵

Finally the pro-trading argument is based upon the somewhat dubious assumption that market actors always behave in a rationally economic sense and seek to 'maximise' efficiency continually. Coase recognised that even in seemingly optimum market conditions, markets do fail and that it appears that market actors at times simply 'satisfice' rather than maximise their economic interests.¹⁵⁶ Dellapenna draws on a stark illustration to this effect:

¹⁵⁵ For a discussion see C. Arnold, 'Working out an environmental ethic: anniversary lessons from Mono Lake' (2004) 4 *Wyo. L. Rev.* 1.

¹⁵⁶ R.H. Coase, 'The Problem of Social Cost' 3 *J.L. & ECON* 1 (1960).

[w]hen we find that even in such a classic setting as among Bedouin horse dealers, markets simply fail to reach the most economically efficient outcome we must begin to question when markets can be expected to achieve the most socially desirable outcome, even if we define 'most socially desirable' in the narrowest economic terms.¹⁵⁷

Trading and time limited/revocable licences

As noted in chapter 6, it has been suggested that licences would generally not be time-limited in Scotland but may be in some circumstances where it is predicted that environmental or drought problems may arise in the future by continued abstractions at licensed levels. It was also noted that licences might be varied or revoked in some circumstances. While a right to vary, revoke or time-limit may be a useful one for regulators to hold up their sleeves, it is interesting that, for England and Wales, it has been argued that a major factor that will dampen enthusiasm for the trading of licences lies in the fact that under the Water Act 2003, all new abstraction licences will be time limited.¹⁵⁸ Carty has argued that

it is unlikely that a potential new entrant into the market will want to purchase a licence that is going to be revoked despite the presumption of renewal where environmental sustainability is not in question, there is continued justification of need, and water is being used in an efficient manner'. Such uncertainties may deter a trade which may involve substantial investment.¹⁵⁹

In general, property rights are more easily traded if they are certain and determinable. If trading is to be encouraged to ensure efficient uses – at least in a strict fashion – then placing future possible constraints on the property right to be traded will discourage transfers. It is this author's view that the pro-market argument fails to hold water so to speak in any case for the reasons outlined above. As noted above, markets are perhaps not the best vehicle for ensuring efficient uses both in the wider public sense in respect

¹⁵⁷ Dellapenna, *supra* n. 138 at p 372.

¹⁵⁸ Normally 12 years.

of water and moreover, transactional costs may prove prohibitive to many trades in any case. Therefore, limiting regulation, taking liberal views on allowing trades and granting licences in perpetuity (and thus increasing the potential environmental dangers that might arise therefrom) in the name of ensuring efficiency in a narrow sense may not be a laudable aim for the reform of Scottish water laws. In general, based on the analysis presented in the preceding section, it is the view of this author that the Scottish Executive should be wary of placing too much emphasis upon creating optimum market conditions.

Other efficiency tools

Aside from the operation of a water market there are other tools that can be used to encourage efficiency. While traditional common law doctrines have dictated otherwise, given scarcity concerns, water should no longer be perceived as a 'free' good and economic incentives through, for example, fees or taxes might be introduced to encourage the more efficient use of the resource.¹⁶⁰ As noted already in this thesis, this kind of efficiency drive has been markedly lacking in the incumbent common law regimes regarding water in Scotland. The post-WEWS regime, however, is based upon the general principle that the 'user pays'¹⁶¹ and thus abstractors subject to the regulatory regime will require to bear at least the costs of operation of that regime. As noted in the previous chapter, costs may be even higher in the future in that a key objective of the Water Framework Directive is to place a value on water itself and make use of economic instruments to curtail over-use and waste. Therefore in geographical areas where water is scarce or in respect of uses that are more profitable to abstractors, such a policy, in simple terms, would dictate that it would cost more to abstract water than in other areas

¹⁵⁹ P. Carthy, 'Water trading in England and Wales - can we buy that fish a drink' (2001) 12 *Water Law* 338 at p 347.

¹⁶⁰ J.W. Dellapenna, *supra* n. 138 at p 336.

where water is more abundant or in respect of less profitable uses. The Scottish Executive has not yet set out a plan in this respect, perhaps largely because of the political sensitivities involved.

Dispute avoidance and low transactional costs

Aside from promoting water markets to engender efficient use and providing cost incentives, regime efficiency may be promoted simply by the presence of well-defined, clear property rights in water. The more certainty inherent in a legal right and the less ambiguity inherent therein, arguably the more efficient the system of property allocation is. This is because if the right to the resource is ambiguous, disagreements over priority of use can lead to costly litigation between disputants. This is a factor which has blighted reasonable use and correlative rights regimes in USA.¹⁶² Therefore property rights should give rise to as little ambiguity as possible so that they in effect become self-enforcing.¹⁶³ Mattei has noted that

[c]onfusion and doubt in the rules of property create incentives to litigate, because each conflicting individual hopes that he or she will end up being favoured by the judicial decision. Clear-cut property rights, to the contrary, reduce litigation because parties will already know who will lose and who will win so that they will avoid spending money on a litigation the outcome of which is already clear *ex ante*.¹⁶⁴

It should also be noted that such a scenario should also encourage investment and thus additionally may help encourage optimum water uses for society. This issue will be discussed under 'beneficial uses' below.

¹⁶¹ see *Controlled Activities Regulations*, *supra* n. 131 at para 1.26.

¹⁶² See chapter 5.

¹⁶³ R.C. Ellickson, *Order Without Law* (1991). Having said that there is an inherent tension between providing certainty so that people can organise their affairs with some confidence about the legal consequences of their actions and retaining enough flexibility to provide fairness in particular circumstances for deserving parties – L. Tee, 'Introduction' in *Land Law Issues, Debates, Policy* (2002) at p 2.

¹⁶⁴ U. Mattei, *Basic Principles of Property Law* (2000) at p 65.

As noted, for Scotland, the determination of water allocation rights by SEPA may give rise to fewer disputes arising therefrom than if, for example, a US-fashioned reasonable use or correlative rights common law approach had been taken. So while the regime's transactional costs may be higher at the outset¹⁶⁵ than a wholly unfettered absolute dominium approach¹⁶⁶ it is preferable in this sense over other US common law approaches and also perhaps the current common law riparian rights system in Scotland where determinations over reasonable uses and questions regarding what amounts to primary and industrial uses have exercised the courts' minds from time to time.¹⁶⁷ It has been noted above that licences and other consents granted to abstract/impound may be subject to variation or revocation after review by SEPA and may give rise to post-licence challenges being brought to SEPA by parties affected by a licensee's activities. So the spectre of possible transaction costs under the Scottish regime in this sense is a real one.¹⁶⁸

Furthermore, disputes might still arise under WEWS in respect of disagreements between competing abstractors seeking to exploit a water body where given ecological, biological and hydro-morphological conditions, abstractions are likely to be limited – at least in the sense that parties may have to stagger their abstractions.¹⁶⁹ Given that litigation is seen as an inefficient mechanism for the resolution of competing users' interests, central to the regime should be the encouragement of consensual forms of dispute resolution between disputants. Although lip- service is paid in this regard by the

¹⁶⁵ in terms of administrative fees.

¹⁶⁶ As discussed in chapter 5, the absolute dominium approach benefits from been subject to zero transactional costs.

¹⁶⁷ There are a few cases in this respect discussed in W. Gordon, *supra* n. 133 at paras 7.29 – 7.40.

¹⁶⁸ Furthermore, as evidence from US licensed-based regimes discussed in chapter 5 suggests, their 'use it or lose it' characteristic encourages over-use of the resource as abstractors are reluctant to hold back on exploitation of the resource and perhaps lose their licence after a challenge from other would-be abstractors. For England and Wales, the Water Act 2003 will reduce the period of inactivity which would trigger possible revocation of the licence from seven years to four years. It will be interesting to see what position the Scottish Executive takes in this regard when the licensing regime is up and running.

Scottish Executive in their encouragement of management agreements¹⁷⁰ whereby if water is scarce, parties are encouraged to enter into a contractual arrangement *inter se* to divide the resource, it may be that some more explicit encouragement of negotiation or perhaps mediation might be beneficial.¹⁷¹

Additionally, the post-WEWS regime in Scotland is also largely silent on the issue of disputes that might arise in respect of the determinations of conflict between those carrying out licensed and non-licensed activities. So, for example, a licence may be granted by SEPA to party A, whose abstraction activities curtail the unregulated, non-mechanical activities of the neighbouring party B and, moreover which are contrary to that parties' riparian rights to a continuing flow of stream of the same quality and quantity. Given that the regime itself does not attempt to remove existing private property rights that currently exist in water resources in Scotland, it is plausible that licensed activities might run contrary to the vested rights of other proprietors. How the regime might deal with issues such as these is at the moment unclear and the current scope for uncertainty undermines the reforms. The post-WEWS regime also leaves uncertain the issue of whether or not an abstraction, either licensed or regulated in some other fashion, which draws water away from beneath the land of another resulting in subsidence and damage to buildings will result in a remedy for the aggrieved party. As noted in chapter 3 and discussed above in relation to human rights concerns, the law is inherently uncertain in this regard. Such uncertainty again adds to potential transactional costs involved for market participants in terms of possible litigation.

¹⁶⁹ *Controlled Activities Regulations*, *supra* n 131 at paras 1.17 & 1.20.

¹⁷⁰ *ibid* at para 1.11.

¹⁷¹ Although this is not to suggest that such negotiation or mediation should be compulsory. Such a move would, in effect, deny parties the right to assert their legal rights. Nonetheless a culture of voluntary *ex ante* dispute resolution could be fostered. The presence of a third party neutral or 'mediator' has been seen as a useful catalyst to the resolution disputes in a range of conflict areas – see for example, R. Mays and B. Clark, *Alternative Dispute Resolution in Scotland* (Scottish Office CRU : 1999).

Encouragement and facilitation of beneficial uses

As scarcity becomes more of a pressing issue in respect of water resources, so ensuring that beneficial uses are recognised and protected by a legal regime becomes an important feature.¹⁷² As noted in chapter 5 it was such a policy consideration that drove a marked shift by policymakers from riparian rights to appropriative regimes in western US states characterised by arid climes. The current common law system in Scotland generally leaves determination of water uses in the hands of private individuals, except in so far that in relation to water in flowing stream, secondary (industrial) uses must leave the water undiminished in both quantity and quality.¹⁷³ While the post-WEWS regime does not alter the issue of ownership *per se*, it will seek to ensure that uses that are detrimental at least as set out in the terms of the European water directive¹⁷⁴ are curtailed.

The post-WEWS regime is one in which the determination of beneficial uses, in the form of permitting activities, is to be vested in SEPA as the regulating body responsible for the administration of the regime.¹⁷⁵ Although it will be shown that there are particular problems associated with administrative decision-making, it has been argued that the administrative determination of what is a reasonable or beneficial use in respect of water has certain advantages over determination of the same by a court as would occur, for example, under the US reasonable use doctrine.¹⁷⁶ Notwithstanding that the criteria for establishing what a reasonable/beneficial use entails may be similar in respect of both

¹⁷² The perennially 'wet' nature of Scotland may render such concerns as encouraging and protecting beneficial uses in society as of less importance than in more arid nations. This issue is discussed in more detail at the end of this chapter.

¹⁷³ Save that an unrestricted right to take water for such uses may develop by prescription – see chapter 3.

¹⁷⁴ under article 4.

¹⁷⁵ Given the general surplus of water resources in Scotland, the focus of the regime is rather one which seeks to prohibit unsustainable activities in respect of particular water bodies rather than the advancement of the most beneficial uses as such. Given shifts over time in either increased water scarcity and/or increased demand for water, the regime's emphasis could be shifted to one more explicitly ensuring beneficial uses.

judicial and administrative determinations, the process is very different. While judicial determinations will take place in relation to disputes between parties which have already occurred, administrative decisions are taken *ex lege* at the time of allocation of the right.¹⁷⁷ Leaving aside, for the moment, the issue of whether this lends itself to more informed decisions about beneficial uses, it should also be noted that the regulated system has the advantage over court-adjudicated, reasonable use regimes in that the decision is taken prior to the (often heavy) financial investment attendant to water exploitation rather than leaving such activities shrouded in uncertainty and subject to possible litigation brought by competing users after investment has begun. Thus a regulatory based regime may provide the certainty which may encourage would-be abstractors to carry out potentially beneficial uses.¹⁷⁸

In terms of overall strategic approach, the proposed licensing regime for Scotland seems, at least if one takes a positivist view, to be on a sound footing. The River Basin Management approach, noted in chapter 6, which will underpin the regulatory regime in Scotland, seeks to take an integrated approach gauging a range of water uses and water bodies and determining the relationships which subsist between them. This integrated approach is one which is now universally recognised at international level as an intrinsic feature of an optimum water allocation regime.¹⁷⁹ This approach allows co-ordinated decisions to be taken which should provide integrated solutions to water policy questions.¹⁸⁰

¹⁷⁶ J.W. Dellapenna, *supra* n. 138 at pp 367-368.

¹⁷⁷ For a US example see the *Regulated Riparian Model Water Code* (J.W. Dellapenna ed., 1997) at 6R-2-01 to 6R-2-08.

¹⁷⁸ Such issues were discussed above under 'efficiency'.

¹⁷⁹ See for example, L. Teclaff, 'Evolution of the River Basin Concept in National and International Water Law' (1996) 36 *Nat. Resources J.* 359.

¹⁸⁰ For examples of such international approaches see International Law Association, Report of the Forty-Seventh Conference 212 (1956) (Held in Dobrovnik); Report of the Fifty-Second Conference Held at Helsinki, 1966, at 484, International Law Association (1966), reprinted in I.L.A., Helsinki Rules on the uses of the waters of international rivers (1967.)

In general it might be said that courts are not best placed to take technical decisions surrounding optimum water uses.¹⁸¹ Following on from this, a feature of a regulatory regime akin to the one instigated under WEWS, is that a more strategic and holistic approach to determining reasonable/beneficial uses can be taken than would be the case with court determination of such issues. As has been noted

[u]nder traditional common law... [approaches], a...determination of whether a particular use is reasonable has always been essentially relational, focusing on the relative social utility of the particular competing uses before the court. While generalized [public] interests... could always theoretically be included in... the judicially weighing of one use against another, such inclusion rarely occurred except perhaps in the form of unarticulated intuitions. The administrative agency is, on the other hand, composed of experts who devote their professional life... to studying such questions. This knowledge... will shape the weighing process in a manner which is at once more abstract and more responsive to the total reality surrounding the use of water drawn from a particular source.¹⁸²

Another factor that supports administrative decision-making is that unlike its judicial counterpart, an administrative agency is not hidebound by the strictures of judicial precedent, which may limit the ability of the judge to deviate from old, outmoded policy considerations.^{182a} Despite the merit in this view, the benefits of regulatory decision making may at times be weakened in certain ways. For example, making the correct policy choices for regulators is no easy task and the preceding chapter discussed some of the technical problems and associated costs involved in ensuring that the most informed policy decisions are taken by SEPA in respect of water resources in Scotland. In this respect it needs to be remembered that given the hitherto lack of a national catchment-

¹⁸¹ An issue perhaps mirrored in commercial law, where courts are not keen to intervene in business matters.

¹⁸² J. Dellapenna, *supra* n. 138 at p 368. Moreover, unlike regulatory regimes, in respect of the development of policy, a common law system often shifts in a fragmented and piecemeal fashion as it is reliant on parties bringing cases to the courts (and largely on parties' pleadings) for new principles to be developed.. A useful discussion of this phenomenon in the USA can be found in Morris, Yandic and Anderson, *supra* n. 137 at pp 355-356.

based system of water governance in Scotland¹⁸³ and associated attempts to tackle different water uses and their impacts *inter se* in an integrated fashion, Scotland's starting point in this respect is perhaps behind many other Member States in implementing the terms of the European Water Directive.¹⁸⁴ As noted in chapter 6, this may be particularly true in respect of groundwater where the quantity lying beneath land, cannot at the moment, be gauged with any real certainty in Scotland. With such matters in mind, one factor that may be instrumental in assisting the determination of the best possible decisions for water allocation in Scotland is the active participation of stakeholders. Before examining this issue, first the issue of how such 'ownership' of stakeholders may lead to more effective regulation and compliance is discussed.

Active Participation of Stakeholders

As will be noted below, the issue of engendering the ownership of local stakeholders has been seen as essential to ensuring their acceptance of the regime, which would thus aid compliance and hence promote beneficial uses. Of course in respect of compliance, SEPA will be empowered to, for example, force licence conditions against non-compliant parties and take remedial action where necessary.¹⁸⁵ The enforcement of rules can be costly, however, and regulatory regimes that are able to create incentives for compliance rather than merely ask individuals to behave against their fundamental (financial) interests are more likely to be successful in an efficient sense.¹⁸⁶ A way to

¹⁸² Although administrative agencies' decisions would need to be taken within the powers conferred upon them by statute.

¹⁸³ although some voluntary catchment planning schemes and a 'shadow River Basin Management Plan' have been put in place – see S. Hendry, 'Enabling The Framework – The Water Environment And Water Services (Scotland) Act 2003' [2003] 14 *Water Law* 16.

¹⁸⁴ As has been noted, England and Wales, for example, has for some time operated a licence based approach to water usage.

¹⁸⁵ *Controlled Activities Regulations* *supra* n. 131 at para 1.21.

¹⁸⁶ R.E. Meiners *et al*, 'Burning Rivers, Common Law, and Institutional Choice for Water Quality' in *The Common Law and the Environment* R.E. Meiners & A.P. Morriss eds (2000) at pp 69-83.

foster an incentive for parties to conform is to ensure that the regime is engendered by their 'ownership' of it.

The issue of participation in this respect is a fundamental one recognised at International level. In fact the European Water Directive itself calls for the active involvement of the public in the implementation of regulatory regimes pursuant to its policy aims.¹⁸⁷ This need for active involvement and the engenderment of local ownership is also found in many international water frameworks. The Bonn recommendations, for example, prescribe that "water governance arrangements should monitor the performance of public institutions... and invite civil society to play an active role in these processes".¹⁸⁸

It was noted in the previous chapter that the regime brought in under WEWS is to be underpinned by extensive consultation processes and indeed the proposals for the licensing arrangements to be brought in post-WEWS were subject to a fairly lengthy and rigorous consultation process. As far as on-going macro-level policy decisions relative to the regime are concerned, the Scottish Executive is empowered to formulate new regulations rather than SEPA although the Minister will be required to consult with SEPA and other interested parties as he thinks appropriate.¹⁸⁹ In this vein, the draft regulations promulgated by the Scottish Executive in April 2004 are to be subject to consultation prior to enactment.¹⁹⁰ As Allen has suggested, however, "the need for 'active involvement' of the public in the implementation of the [European Water Directive] implies something more than simple consultation and information

¹⁸⁷ article 14.

¹⁸⁸ *Water - Key to Sustainable Development : Recommendations for Action*, International Conference on Freshwater, Bonn, Dec 2001, at action no. 12. Reference can also be made to Symposium *Urgent Action Needed for Water Security : Stockholm Statement* 2002, principle 1 available at www.siwi.org/Aners/Steph/downloads2002/Stockholm_Statement.pdf which states that "an ongoing dialogue between policy and decision makers and the users is of utmost importance".

¹⁸⁹ WEWS s 21(1).

provision".¹⁹¹ In this sense a Water Forum has been set up comprised of interested parties, stakeholders and experts to help engender such active involvement and the River Basin District shall provide for a River Basin District Advisory Group to feed into the RBD management process.¹⁹² It remains to be seen whether such initiatives will address adequately the need for continued and active public participation in Scotland.

This need for public participation is not simply important in engendering the 'ownership' of stakeholders in the new regime to ensure their compliance and commitment thereto. As noted above, the active participation of stakeholders is also important in ensuring that policy decisions can be taken in the most informed way possible. To this end, a feature of most international models of water governance is an approach to water allocation underpinned by policies coordinated on the "lowest, most appropriate, administrative tier."¹⁹³ In Scotland, decision making regarding water uses will be taken on a centralised level. There is to be only one river basin district as such, although it shall be based upon the environmental objectives of individual river basins. Furthermore, licences will be issued pursuant to local conditions and needs.¹⁹⁴ While the single RBD may provide for consistency in approach across Scotland as a whole, this 'one-size-fits-all' strategy may in practice be too far removed from local conditions for an optimum approach to water allocation to be achieved, as recognised under international law. As the Scottish Executive has recognised "it is much easier to engage the interests of members of the public and community groups in localised rather than strategic issues"¹⁹⁵ and therefore decision making organisations should be as local as possible without compromising the

¹⁹⁰ The Consultation period ended in 9th July 2004.

¹⁹¹ A. Allan, 'A comparison between the water law reforms in South Africa and Scotland: Can a generic national water law model be developed from these examples?' (2003) 43 *Natural Resources Journal* 419 at p 484.

¹⁹² WEWS s 17(1).

¹⁹³ See for example the *Bonn Recommendations* *supra* n. 188; *Stockholm Recommendations* *supra* n. 188.

¹⁹⁴ *Controlled Activities Regulations*, *supra* n. 131 at para 3.15.

overarching strategic aims of the regime. International approaches to water governance recognise the fine balancing act that must be struck between the two aims of establishing a unified approach and taking account of local conditions.¹⁹⁶ The sub-river basin management programmes which will be compulsory under WEWS may go some way to providing a bridge between local stakeholders and the centralised allocation body. Whether Scotland can find the right balance in this regard remains to be seen.

Moreover, as noted by Hayek, for a system of property allocation to operate effectively it must be predicated on all salient information pertaining to the regime. Thus decisions taken by a regulator such as SEPA in the quest for the holy grail of 'beneficial' uses (or at least, for the time being, non-detrimental uses) must be based upon the widest range of relevant views possible. This is a problem generally in that typically such information is highly dispersed.¹⁹⁷ This is particularly true of a regime as complex as one which seeks to engender equitable and efficient allocation of water resources across a wide range of users. In this sense, Morriss, Yandle and Anderson suggest that

[j]ust determining the technical characteristics of water, biology, climatic conditions, and riparian use for one major body of water is a high-cost task...technical knowledge is constantly changing, and major breakthroughs often occur in the heat of the task...coming up with an optimum solution becomes even more daunting when the planner has to identify and include the social dimensions of the problem.¹⁹⁸

De-centralised decision making is thus required to assimilate the disparate strands of knowledge that exist within a community which can be brought to bear on the problem. To this end, the participation of local stakeholders is an essential feature of such an optimum regime which would hope to tackle a policy area as complex as water resource

¹⁹⁵ Scottish Executive Environment Group, *The Future of Scotland's Waters - Proposals for Legislation* Feb 2002 (Paper 2002/4) at para 1.25.

¹⁹⁶ See, for example, principle 1 of the *Stockholm Statement* *supra* n. 188.

management. As noted, Scotland's attempts to foster such active participation may for the time being be limited at best. It may be that further action must be taken by the Scottish Executive and SEPA to ensure that such meaningful local participation takes place.

Dispute resolution and the protection of beneficial uses

Despite the lack of detail forthcoming thus far in this regard, it is likely that under the post-WEWS regime in Scotland, as is the case with allocation of rights, disputes arising from regulated abstractions will also (at least initially) be handled administratively through SEPA. What this therefore entails, is effectively a transfer of function from the courts to administrative fora both in respect of the initial allocation of rights and also the determination of disputes.

It may seem sensible, in terms of efficiency, for administrative fora to resolve disputes arising from the regimes they operate. Problems in ensuring that dispute determination is not tarnished by the political activities of certain stakeholders may arise, however. In particular a specialised administrative body like SEPA may be more susceptible to the influence of groups of stakeholders than general courts because its specialised nature provides an efficiency incentive for lobbying efforts.¹⁹⁹ Thus political pressure exerted by particular stakeholders may be brought to bear over SEPA's dispute resolution processes. Such dispute resolution processes may, therefore, in practice favour the more powerful stakeholders over other less influential groups. This notion stands in contrast to dispute resolution in general courts where cases arising in specific legal areas (eg water

¹⁹⁷ F.A. Hayek, 'The Use of Knowledge In Society' 35 *Am. Econ. Rev.* 519 (1945).

¹⁹⁸ A. Morris, B. Yandle, T.L. *supra* n. 137 at p 339.

¹⁹⁹ H. Bruff, 'Specialized Courts In Administrative Law' (1991) 43 *Admin. L. Rev.* 329.

rights disputes) would represent a small fraction of the judge's overall docket. It therefore follows that stakeholders would be far less likely to invest resources in lobbying activities.²⁰⁰ It should be noted that industry sectors who will feel the brunt of the post-WEWS regulations such the distilleries, farming and energy sectors, have been thus far particularly vocal in promoting their interests in the consultations pre-WEWS.²⁰¹ They are likely to be similarly so vocal in respect of disputes relative to water allocation and use as the regime develops. The ability of SEPA to stand firm in the face of the lobbying of these interest groups may be paramount in ensuring that beneficial uses remain at the heart of the water regime for Scotland.²⁰² It is worth noting that this undue influence by powerful stakeholders may in fact go beyond dispute resolution processes. There may be a danger that influential interest groups may in fact be able to exert 'regulatory capture' over various aspects of the post-WEWS regime which may have the effect of diminishing the drive to embrace the most sustainable practices in favour of furthering their own interests.²⁰³

Summary

How therefore does the post-WEWS regime in Scotland measure up? In terms of legality, the issue of compliance with the ECHR seems likely not to be much of a live issue except around the fringes of the regime, for example, in relation to SEPA's positive obligations and issues of withdrawal of support. Additionally, SEPA may have to tread carefully around the issue of revocation or variation of licences. In terms of imposition

²⁰⁰ Morris, Yandle & Anderson, *supra* n. 137 at p 360.

²⁰¹ Witness, for example, the protestations of the Scottish Whisky Industry noted at <http://www.sepa.org.uk/weeklybriefing/2001/May/04052001.htm>.

²⁰² An ancillary point that might be made here is that given that regulation powers will remain with the Scottish Executive rather than SEPA, the possibility of political expediencies taking precedence over more environmentally sound policy may act to undermine confidence in the regime - See A. Allen *supra* n. 191.

²⁰³ A comparable example may be the regulatory capture of the US patents system by the legal profession - see for example, B. Kahin, 'The paradox of private legislation : business, economic and political effects of patents on information processes' Is Software Patentability Necessary Conference (2002, European Parliament) available at <http://www.greens-efa.org/pdf/documents/SoftwarePatenting/TextKahin.pdf>.

of the regime itself, as the analysis presented earlier in this chapter indicates, any challenge under the terms of the FCHR is at best a slim prospect.

The issues of efficiency and protecting beneficial uses can be dealt with together because they are so inextricably linked. While free market economists might argue that these two aims are not incompatible and that market based approaches to water governance can give rise to both efficiencies and the most beneficial uses, it has been suggested in this chapter that as a public good water cannot be left to the vagaries of the market and that regulatory measures are required to ensure that beneficial uses are protected. This position is one which has been enshrined in the domestic law (at least in so far as ownership is concerned) for centuries. It can be recalled from chapter 3 that, reflecting its life-sustaining attributes, running waters in general have been treated as *res communes* at common law in Scotland. Moreover, even if it is accepted that markets will function at all in the context of water, what may be economically efficient in terms of the monetary value of an abstraction to would-be users on a local level, may not correlate with the most efficient use in a wider economic sense. Nor shall such local efficiencies necessarily ensure equitable and sustainable uses on the wider national level. The Scottish Executive's approach is correct therefore in keeping the spectre of regulation up its sleeve in respect, for example, of revoking or varying licences and limiting transfers of licences in the name of protecting beneficial uses.

As has been identified in this chapter, efficiency may be blighted by the regulatory costs in setting up and operating the new system, which in general shall be borne by industry. The potential regulatory costs involved and the Scottish Executive's estimations of likely monetary burdens with regard to different industry sector's compliance with the regime have already been noted. Such costs are likely to be significant. Given the likely impact

of the reforms, the question that needs to be asked is do the benefits which might be reaped by the regime outweigh the costs? A factor that shall weigh heavily in any determination of such a cost-benefit analysis, will be the extent that under the new regime, it is possible to identify beneficial uses of water and in particular, identify abstractions and impoundments that hold deleterious consequences for the environment. This is a key question for all regulatory regimes and as noted in chapter 5 not one that it always easily resolved. The RBD management approach inherent in the new regime is one underpinned by international law and practice and may help engender the integrated solutions to water governance problems that are required. If the regime in Scotland is to grapple effectively with these issues, it was noted that the active participation of stakeholders may need to be further encouraged to assist in the cross-pollination of ideas between state and others in society and the directing of all available knowledge in arriving at water allocation decisions.²⁰⁴

On the other side of the coin, it has been noted that issues of clarity and certainty of rights to water brought about by the post-WEWS regime may bring their own efficiencies. This is because clarity of property rights in effect renders them self-enforcing and hence may engender dispute avoidance and a saving of parties' and the state's costs in this regard.

Climatic factors and gaps in the regime

It was suggested at the beginning of this chapter that climatic and ecological factors might influence a state's choice of water regime. In this sense, although licensed-based regimes (broadly of the sort that WEWS would institute) have been deemed more appropriate in arid climates where definitive state-made choices require to be taken with

²⁰⁴ Although the problem of regulatory 'capture' in this regard of dispute resolution processes and other

regard to competing uses of what is undeniably a scarce resource. While most Eastern US states²⁰⁵ have rejected the traditional absolute dominium approach, they have not, in the main, turned to licence-based regimes. Rather such states have plumped for reasonable use or correlative rights regimes. Scotland is not an arid nation and it might be posited that, despite localised drought problems in a smattering of geographical areas, the general abundance of water might lead one to the conclusion that a comprehensive licensing regime (with its attendant costs), predicated on state-made choices regarding water allocation, is simply not needed. In short, therefore, it could be argued that the post-WEWS regime is a hammer cracking a nut. This, of course, is a symptom of the pan-European approach of the Directive in prescribing a harmonised approach to the ensuring of certain minimum ecological and biological features of water resources across member states. The Directive presumes that the same general measures governing abstractions and impoundments may be considered equally as appropriate in rain-soaked Scotland as, for example, in the arid climes of southern Italy.

Scotland is more analogous to Eastern US states in the sense that although water resources are generally plentiful, it is argued that absolute rights to abstract should be curtailed to prevent waste, inequity and localised environmental and drought problems. A move to a correlative rights or reasonable use regime is clearly a less drastic step – in terms of state regulation – than a licensed-based system and one, in which, at least the up-front regulatory costs entailed would be far lower for society and in particular, affected industry sectors. Common-law based reasonable use and correlative rights regimes carry their own problems, however. Recalling the analysis in chapter 5, correlative rights regimes may entail transactional costs of their own in the sense that they may be blighted by inter-abtractor disputes which can proceed to protracted, expensive court

aspects of the post-WEWS regime was noted.

adjudication, or alternatively are characterised by acquiescence, where because of the costs of litigation, the legal rights of less empowered parties are largely ignored thus *de facto* unenforceable. Reasonable use doctrines do not protect secondary users in times of scarcity and may be limiting in that interpretations of what is 'reasonable' have normally been confined to uses upon overlying land.²⁰⁶ Furthermore, the lack of certainty inherent in such rights may prohibit what may be costly (but nonetheless value-laden) investment in water exploitation and limit the trading of water rights.

In any case, the terms of the Water Framework Directive in essence call for the establishment of a licence-based regime to control abstractions and impoundments where this is necessary in order to achieve 'good' status and thus policymakers in Scotland are yoked to such an approach. Despite concerns about the imposition of a licence-based system, the key issue about the post-WEWS regime in Scotland in this regard is that full licences will only be required in a minority of cases, where after a risk assessment, conditions are imposed upon abstractors to avoid environmental harm. The Scottish Executive has noted that for the majority of abstractions and impoundments, full licences will not be required and thus minimum regulatory controls and associated costs will face the bulk of abstractors.²⁰⁷ The current common law provisions will continue to apply in the majority of cases. While this may be seen as appropriate in not over-regulating, it may be seen as an opportunity missed, in that traditional common law approaches, particularly in relation to groundwater may not be the most appropriate in any circumstances.

²⁰⁵ with the notable exception of Texas

²⁰⁶ Although with a *de novo* regime, different interpretations of 'reasonable uses' could be determined.

²⁰⁷ *Controlled Activities Regulations*, *supra* n. 131 at paras 1.7 - 1.11.

The post-WEWS regime is clearly at an embryonic stage of its development and how SEPA and the Scottish Executive will tackle the concerns identified in this chapter will begin to be seen as the licensing system enters its adolescence. The fact alluded to above, that the licence regime will only be applicable in certain cases does leave open the largely unanswered question, first noted in chapter 6, of the interaction between licensed and unlicensed activities and in particular what legal remedies might result when a licensed abstraction, impinges upon the common rights of un-regulated users. Such uncertainties inevitably give rise to efficiency concerns. Moreover, other aspects of water governance are not clarified by the regime. As noted above, the issue of subsidence in respect of the abstraction of groundwater is not tackled by the regime and these ambiguities again may be counter productive in ensuring that the licensing framework can achieve its goals. In this sense therefore, this policy gap represents an opportunity missed.²⁰⁸

²⁰⁸ And as discussed above, the human rights issues engendered by this issue may lead to challenges against the regulator.

PART IV: CHAPTER 8 : CONCLUSION

This thesis has attempted to draw together in one place a discussion of the law relative to various different sorts of migratory things which may be present upon or beneath land. In the same way in which the various common cords that underpin judicial and regulatory approaches relative to different migratory things have been brought together in this work, this final chapter seeks to draw together the strands of the analysis presented herein.

To this end, this work has sought to compare and contrast the variant legal approaches and the policy arguments which underpin them, in relation to different kinds of migratory things in a new, 'joined-up' way. This is not to say that on occasion the law from one area has not already permeated the other and aided its development, primarily through judicial pronouncements (as noted, perhaps not always in a justifiable way). Generally however, the law in each area has developed somewhat in a compartmentalised sense and issues of property and rights of use in migratory things have not generally developed in an integrated, unifying way. It is not suggested that there should be one, all-embracing theory relative to migratory things in general - their respective nature and characteristics clearly vary widely. As noted in part 1 of this thesis, however, different migratory things share a number of characteristics, including: a monetary value to private landowners; varying degrees of wider social utility; physical difficulty in exerting control over the resource until reduced into possession; and the ability to be appropriated from above or beneath the lands of others by activities carried out on one's own land. The law and underlying policy in one area can therefore usefully inform that in another.

While the opening chapters for the first time set out a substantial comparative analysis relating to different migratory things across Scotland and England, this part of the thesis also revealed important insights into the general problems that a legal system may encounter in respect of allocating property rights to migratory things. The legal arguments inherent in the case law expose both the fragility of trite, general legal concepts and brocards and also the overlap and inconsistencies between different legal principles and grounds of action. To some extent, given their ambient nature, migratory things can truly be said to be a square peg in a round hole and, in this sense, present challenges to existing tenets of land-law.

Moreover, it was argued that the issue of private ownership in such things is largely a red herring.¹ For example, operation of a law of capture (which may imply both physical capture of the resource and legal capture of ownership) serves to largely render the question as to whether migratory things are owned *in situ* superfluous. Where legal capture has taken place, this provides a real challenge to general, recognised characteristics of ownership – particularly the idea that an owner is protected against appropriation of his property by others without his consent. A law of (legal) capture circumvents this notion by holding that where legitimate activities of one serve to draw the thing away from the land of another (which, by virtue of the maxim, *a coelo ad centrum*, may be owned *in situ*) then this physical capture is followed by legal capture and thus the title of the original owner is lost. To some extent such a view can be rationalised, at least under English law, by the fact that the concept of ownership is a somewhat weak one. There are remarkably few remedies based upon ownership under English common law, indeed in the main, remedies stem from possession. Since migratory things (even those that are owned *in situ*) have never been possessed, then it may be difficult for an

¹ Except perhaps in relation to human rights concerns.

aggrieved proprietor to raise an action based upon such remedies. Moreover, given that ownership is not an absolute notion under English law but rather a relative concept, at the end of the analysis, the relevant question may be simply be concerned with who has the better title. If the legitimate exploitation of one's own land has resulted in the capture of the property from another, then from a practical perspective and in pursuance of legitimate policy aims, a court may favour the capturer. In fact in relation to most English and Commonwealth jurisprudence in this regard, property rights barely feature and instead actions tend to be sought on other grounds such as support or tort.

Whereby an approach supporting legal capture may be doctrinally sustainable under English law, it is hard to see how it might fit in with the authorities on the Scots law of property, which recognise ownership as an absolute concept and provide remedies based upon ownership. As noted in this thesis, while the doctrine of *occupatio* bestows ownership of ownerless items upon the first party to reduce them into possession, this concept would not sanction, by appropriation, ownership of items which in fact already belong to another at the time of their capture. Scots law approaches to these questions have rarely been tested in practice. The bulk of (rare) Scottish cases have related to the capture of water, which in general, has been held as *res nullius*. This doctrinal conundrum has not therefore required to be overcome.

In general, questions relative to rights to exploit and restrictions placed upon such rights have historically been more important than ownership as such. A number of different policy markers underpin the disparate legal approaches that courts have taken in respect of such questions from time to time. The policy indicators underpinning these different approaches have already been noted in this thesis and include: encouraging economic investment and industrial development; providing low transactional costs; providing for

certainty of rights to exploit; recognising the correlative rights of others; conserving the resource; limiting environmental damage; and adhering to existing precedent. These can be distilled into three broad policy factors, namely: legality; efficiency and the encouragement and protection of beneficial uses.

As noted in chapter 5 (Part II) of this thesis, the policy markers underpinning early court's determinations of the law relative to property and rights of use in respect of migratory things were dominated by the desire to encourage the legitimate exploitation of these valuable resources and the avoidance of transactional costs which might act as a barrier to such activities. The potential value to private users and an emerging industrial society in general of the exploitation of migratory things was not lost on early judicial decision makers; nor was the 'occult' nature of such migratory things as groundwater, nor the transactional costs involved in determining likely impacts of different uses upon activities of others. It is of little surprise therefore that courts in the main plumped for simple property rules of first possession and untrammelled rights of use. Only where the resource could be more easily identified and impacts predicted (eg water in defined channels) was a regime imposed that countenanced the correlative rights of others. More importantly, largely absent from early court determinations regarding property and rights of use was any realisation of the wider social impacts of different uses of migratory things – at least beyond the tacit recognition that industrial and legitimate exploitation of resources would benefit society as a whole.

In relation to migratory things in the UK, therefore, it can be recalled that, as part of a basic pro-development agenda, 'legitimate' uses have generally overcome the correlative rights of others in society. Such pro-use approaches are somewhat myopic, however. In view of inefficiencies and inequity stemming from traditional absolute dominium

approaches, new rules designed to address these concerns began to develop in relation to the issue of rights to exploit migratory things, such as prior appropriation, reasonable use and correlative rights doctrines.² The debate over private law rights in migratory things has exercised the minds of courts historically. Particularly in respect of things subject to wider societal concerns regarding exploitation (such as water), the debate regarding allocation of rights is now mirrored in the public law sphere and where the courts once arbitrated this question, of late they have been increasingly supplanted by policy makers and regulators.

The policy goals of a regime allocating rights in migratory things as identified above are not entirely compatible. Clearly a key question concerns how a legal system determines the correct approach. In particular, how a legal regime balances out the underlying policy rationale of different property and allocation choices is an important task. From the analysis presented in this work, the factors which may influence what particular policy is chosen include: the value of the thing (either in a private, monetary sense or wider social utility sense); the physical ability to exert control over the substance until reduced into possession; the extent that its presence (and extent of its presence) is knowable *in situ*; similarly the degree to which knowledge exists as to the impact – either in terms of efficiency or some other social utility repercussion – that particular uses might have; and how abundant or scarce the resource is. Given the multiplicity of factors that might require to be weighed up in respect of any policy determination, it is not surprising that courts, at various times in history, with varying levels of technological knowledge, and in respect of different migratory things, have taken disparate views. In many contexts, regulatory regimes are now faced with the challenges of balancing up such competing needs. As argued in the context of Scottish water law reform, specialised regulatory

² Chapter 5 analysed US approaches to exploitation of groundwater in this regard.

agencies may be better equipped to grasp the mantle of these problematic issues. Increasing technological knowledge and greater awareness of the impacts of different sorts of exploitation may assist in making better decisions about the allocation of rights in migratory things.

It is hoped that the arguments presented in this thesis may be of use to those involved in the formulation of policy in respect of what are currently 'live' issues within categories of migratory things. In this sense, the relevant area of policy in Scotland relates to the allocation and use of water.³ Reforms set out in WEWS and its pursuant regulations will radically shake up existing approaches to water governance and in particular, the right to abstract and impound water. In formulating relevant policy, policymakers should pay regard not only to the comparative approaches to water allocation questions incumbent in other jurisdictions (also analysed in this thesis) but also the policy arguments which have underpinned determinations (by both courts and legislators) of the law in relation to different migratory things from time to time. For example, the rationale behind the unitisation measures taken in respect of the need to conserve oil and gas in both the US and the UK offshore regime, is similar to that underpinning needs to conserve water. The US hydrocarbon experience is another illustration of a shift of allocation of private rights in migratory things and determination of disputes thereto, away from the courts to regulators. This move occurred largely with a view to more effectively avoiding waste, inefficiency and decimation of scarce resources and providing for a fairer distribution between competing users.

³ In the UK property and rights to exploit hydrocarbons have been nationalised, although as noted, concerns may still exist in respect of gaps in the regime. Issues relative to wild animals are primarily covered now by statutory gaming legislation.

In the analysis presented in earlier chapters, the various policy rationales underpinning different choices in respect of allocating rights in migratory things were identified and distilled into three considerations, namely efficiency, protecting beneficial uses and legality. At one level or another, courts have always been intrinsically concerned with striking an appropriate balance between the first two of these and current attempts by policy makers in respect of water use in Scotland is no different. This issue is clouded by different perceptions of what efficiency denotes and in particular the schism that subsists between economic efficiency in respect of private users and wider notions of efficiency for society as a whole, which might encompass a reduction in waste, conservation and allocation of the resource to the most beneficial uses in society. One of the key debates elaborated in chapter 6, pertained to the question of the extent that the free market could generate such efficiencies – both in a narrow or wider sense – or whether by contrast regulatory intervention was needed, particularly in respect of protecting wider, societal interests. On the balance of arguments presented in this thesis, this writer's stated view is that, notwithstanding the administrative costs brought about by regulatory regimes,⁴ water, as a key public good, cannot be left to the vagaries of the market. In any case, it was argued that markets may function badly in this context, due to a number of stated practical difficulties.

The third criteria, legality, is one reflected in other jurisdictions. The state taking or infringement of existing private rights in migratory things in pursuit of the above policy aims raises interesting questions about the interaction between public law regulation and the private rights of landowners and other water users. As noted from US water governance experience, the imposition of a new regime must be legal in terms of a state's constitutional requirements and this debate was reflected on in the sense of similar

⁴ And the many problems discussed in chapter 6 regarding effective operation of regulatory regimes.

human rights concerns over the establishment of the post-WEWS regulatory framework in Scotland. This is a somewhat complex question and, given a lack of direct authority in this regard and the embryonic nature of the development of human rights law in Scotland under the Human Rights Act 1998, the relevant analysis presented in this thesis is somewhat speculative. The human rights concerns identified in chapter 6 may give rise in the future to disputes as the WEWS regime develops and it will be interesting to see if the views set out here in this regard provide a viable platform for determination of such matters.

With regard to water use and allocation in Scotland, as the new licence-based regime is developed and becomes operational and perhaps trends in water use alter and/or climatic changes take place, studies will doubtless be undertaken on the appropriateness of the scheme in meeting the aims of the water directive and/or whether the directive's aims themselves require to be re-cast. In this sense, an important issue noted in this study is the potential inappropriateness of a generic model of water governance applicable to different nations imbued with varying climatic/water scarcity conditions. This issue is one that can be applied to all migratory things in which variations in societal needs and quantities and natural distribution of the resource may require regimes to take diverse approaches to balance up competing policy choices in different ways.

Additionally, any generic model should clearly be flexible enough so that it can be tailored to particular needs. With regard to the post-WEWS regime, the Scottish Executive would not wish it to be too heavily encumbered by costs and administrative burdens, which might stifle necessary water exploitation. Equally any relaxed regime

imposed⁵ must be one that is flexible so that it can be adapted quickly to meet changing requirements, perhaps calling for more stringent controls on private exploitation, without facing insurmountable political or legal hurdles.⁶

The policy debate over water rights and allocation reform in Scotland mirrors that which has taken place in other jurisdictions. This debate also reflects that which has exercised judicial minds in the UK over the past few centuries in respect of questions such as the allocation of private rights to resource users, the protection of correlative private rights of others and limitations upon exploitation in the name of wider societal needs in various different contexts from wild animals to oil and gas exploitation. The contentious issues arising in this debate are likely to be raised again in the future both in the courtroom and by policy-makers. As this study indicates and the Scottish water reform case study exemplifies, the policy questions are many, the solutions varied and final determination a difficult, complex process.

⁵ As the WEWS reforms may be in the sense that it is anticipated full licences will only be required in a minority of cases.

⁶ The example of time-limited licences was discussed earlier in the thesis. A scheme which bestows indefinite, licensing rights upon parties may face both political pressure and legal challenges if it were to attempt to curtail these rights at a later date.

TABLE OF CASES

- A v Scottish Ministers* 2001 SC 1
- A v UK* (1999) 27 EHRR 611
- Acton v Blundel* (1843) 12 M & W 324
- Addison & Sons v Row* (1794) 3 Pat. App. 334
- Alphaguh Irrig. Dist v County of Kern.* 113 Cal. App. 2d 286 (1952)
- American Cyanamid Co v Ethicon* [1975] AC 396
- Andrew v Henderson and Dimmack* (1871) 9 M 554
- Anonymous* (1638) Cro Car 449, 79 ER 1031, KB
- Anshutz Land & Livestock Co. vs Union Pac R.R Co.*, 820 F. 2d (19th Cir. 1987)
- Bald v Alloa Colliery* (1854) 16 D 870
- Ballard v Tomlinson* (1855) 29 Ch D 11
- Balston v Bensted* 1 Camp 463 (1808)
- Baner v Sweden* (1989) 60 DR 128
- Barnard-Argue-Roth-Stearns Oil & Gas Co Ltd v Farquharson* [1912] AC 864
- Basset v Salisbury Manufacturing Co* 43 N.H. 569 (1862)
- Bernstein v Skyviews and General Ltd* [1978] QB 479
- Black v Ballymena Township Commissioners* (1886) 17 I.R Ir 459
- Blade v Higgs* (1865) 11 HL Case 621
- Blair v Hunter Finlay* (1870) 9 M 204
- Blount v Layard* [1891] 2 Ch 681
- Bolton v Forest Pest Management Institute* (1986) 21 D.L.R. (4th) 242
- Boyd v Bruce* (1872) 11 M. 243
- Boys v Canadian Pacific Railway.* [1953] A.C. 217
- Brace v S.E. Regional Housing Association* (1984) 270 E.G. 1286 (C.A.)
- Bradford v Pickles* [1895] AC 587 HL

Brumelid and Malmaström v Sweden Appl 8588/79 and Appl 8589/79, (1982) 29 DR 64
British American Tobacco Company v The Netherlands (1955) 21 EHRR 409
Buchanan v Andrew (1873) 11 M (HL) 13
Buckley v UK (1996) 23 EHRR 101
Burnett v George [1993] 1FCR 1012, CA
Burr v. MacLay Rancho Water Co 154 Cal. 428 (1908)
Caledonian Ry Co v Sprot (1856) 16 D 559, revsd 2 Macq 449, HL
Case C-331/88 Fedesa [1990] ECR I-40233
Chasemore v Richards (1859), 7 HL Cas. 349
Chassagnon v France (App. Nos. 25088/94, 28331/95 and 28443/95, 29 April 1999)
Chatfield v Wilson 28 Vt. 49 (1856)
Churchward v Studdy (1811), 14 East 249
City of Barstow v Mojave Water Agency 5 P 3d 853 (Cal. 2000)
City of Los Angeles v City of San Fernando 14 Cal.3d 999 (1975)
City of Pasadena v City of Alhambra 33 Cal. 2d 908 (1949)
City of San Bernardino v City of Riverside 186 Cal 7 (1921)
Clement-Bayard, Cass. Civ Aug. 3, 1915, D. 19171705
Clore v Theatrical Properties Ltd and Westby & Co Ltd. [1936] All ER 483
Corona Foothill v Lilibridge 8 Cal 2d 522 (1937)
County of Inyo v City of Los Angeles (Invo II) 61 Cal App. 3d 91 (1976)
Crichton v Turnbull 1946 SC 52
Dabney-Johnston Oil Corporation v Walden 4 Cal.2d 637 (1935)
Davieson's Trs v Caledonian Ry (1895) 23 R. 45
Denev v Sweden (1989) 59 DR 127
Dept of Ecology v Theodoratus 135 Wash. 2d 582 (1998)
Dudgeon v United Kingdom (1981) 4 EHRR 149

Duke of Athol v Macinroy (1862) 24 D. 673

Duport Steels Ltd v Sirs (1980) 1 WLR 142

Durham v Hood (1871) 9 M 474

Earl of Kintore v Pirie & Sons Ltd (1903) 5 F 818

Earl of Lonsdale v A-G [1982] 1 WLR 887

Eckroyd v Coulthard [1898] 2 Ch 358

Ellif v Texcon Drilling Co., 210 SW 2d 558 (Tex. 1948)

Elliot v North Eastern Rly Co 1863 10 HLC. 333

Embery v Owen (1851), 6 Exch. 353

English v Metropolitan Water Board 1907 Jan 28, 29, 30 KBD

Errington v Errington and Woods [1952] 1 KB 290

Evans v City of Seattle 182 Wash. 450, 47 P.2d 984 (1935)

Herens v O'Brien (1883) 11 QBD 21

Fitzgerald v Firbank [1897] 2 Ch 96, CA

Forbell v City of New York 47 App. Div. 371, 164 N.Y. 522, 58 N.E. 644 (1900)

Ford v Tynte (1861), 2 John & H 150

Frazier v Brown 12 Ohio St. 294 (1861)

Fredin v Sweden (No 1) 1991 ECHR Series A No. 192

Fredin v Sweden [1991] 13 EHRR

Gasus Dosier and Fordertechnik GmbH v The Netherlands (1995) 20 EHRR 403

Gaygusuz v Austria (1997) 23 EHRR 364

Gillow v UK (1989) 11 EHRR 335

Glasgow City and District Railway Co v Macbrayne (1883) 10 R 894

Glasford v Astley (1808) M. Appx

Gordon v Stuttie (1837) 15 S. 549

Gott v Measures [1948] 1 KB 234

Government of Mauritius v. Union Flacq Sugar Estates Co. Ltd [1992] 1 W.L.R. 903

Grand Junction Canal v Shugar 1871 LR Ch D 483

Greenleaf v Francis 18. Pick. 117; 35 Mass. 117 (1836)

Grymes v Shack (1610), Cro. Jac. 262

Guerra and Others v. Italy (1998) 26 E.H.R.R. 357 ECHR

Hammonds v Central Kentucky Natural Gas Co., 255 Ky. 685, 75 S.W. 2d 204 (1934)

Handyside v UK (1976) 1 EHRR 74

Harvey v Wardrop (1824) 3 S 322 (NE 229)

Harvie v Stewart (1870) 9 M. 129

Hatton v The United Kingdom (2003) 37 E.H.R.R. 28

Hentrich v France (1994) 18 EHRR 440

Hocker v Porritt (1875) LR Exch

Houston & T.C Ry. v East, 98 Tex. 146, 81 S.W. 2d 279 (1904)

Huber v Merkel 94 N.W. 354 Wis (1903)

Hunter v Canary Wharf [1997] 2 All ER 426

Indian Oil Corp. Ltd. v Greenstone Shipping S.A. (1988) QB 345

Jacobsson v Sweden [1989] 12 EHRR 56

James v UK (1986) 8 EHRR 123

John Young & Co v The Bankier Distillery Co [1893] AC 691

Jones v Forest Oil Co., 194 Pa. 379, 44 A. 107 (1900)

Jordeson v Sutton Gas Co (1899) 2 Ch 217

Jordeson v Sutton Gas Co (1899) 2 Ch 617

Juana v Att. Gen of Guyana [1971] A.C. 972

Katz v Walkinsbaw 74, P 766 (Cal 1902)

Keeble v Hickeringill (1706) 11 Mod Rep 74

Kensit v Great Eastern Ry (1883) Ch D 566

Khaunt and 180 others v UK 26 EHRR CD 212

King v David Allen and Sons, Billposting, Ltd. [1916] 2 AC 54

Ky, United Fuels Gas Co. v Sawyers 259 S.W.2d 466 (Ky. 1953)

La Compagnie Sucriere del Bel Ombre Ltee v The Government of Mauritius [1995] 3 LRC 494

Langbrooke Properties Ltd v Surrey County Council [1970] 1 WLR 161

Leakey v National Trust [1980] Q.B. 458 (C.A.)

Liggins v Inge (1831) 7 Bing 68

Lithgow v UK (1986) 8 EHRR 329

London v Ryder (No. 2) [1953] Ch 423

Lopez Ostra v Spain (1994) 20 EHRR 277

Lowe v Adams [1901] 2 Ch 598

Luttrell's Case (1600) 4 Coke 86a, 76 ER, KB

Malaysia v. Selangor Pilots Association [1978] A.C. 337

Malloch v Elastley 1685 3 Slak. 291

Marcic v Thames Water Utilities Ltd (Preliminary Issues) [2001] 3 All ER 698 (QBD(T&CC))

Marcic v Thames Water Utilities Ltd [2004] 2 A.C. HL

Marcic v Thames Water Utilities Ltd EWCA Civ 64; [2002] 2 W.L.R. 932 (CA)

Marckx v Belgium A/31, (1979-80) 2 EHRR 330

Marquess of Breadalbane v W Highland Ry (1885) 22 R. 307

Mason v Hill (1833), 5 B & as. 1

McCartney v Londonderry and Lough Swilly RY [1904] AC 301

Mellacher v Austria (1997) 23 EHRR 364

Milton v Glen-Moray Glenlivet Distillery Co Ltd (1898) 1 F 135

Morgan v Abergavenny (Earl) (1849), * C B 768

Morris v Bicket (1864) 2 M 1082 (affd (1866) 4 M (HL) 44)

Mull Shellfish v Golden Sea Produce 1992 SLT 703

N.C., Bayer v Nello L. Teer Co. 256 N.C. 509, 124 S.E.2d 552 (1962)

Nicoll v Strachan (1912) 7 Adam 31

Nietmietz v Germany(1992) 16 EHR 97

North London Ry v Great North Ry (1883) 11 QBD 30

Ohio Oil Co. v Indiana, 177 US 44 L. Ed. 729 (1900)

Oneryildiz v Turkey (48939/99) (Unreported, June 18, 2002) (ECHR)

Ormerod v Todmorton Joint Stock Mill Co Ltd (1883) 11 QBD 155

Palmer v Keeblethwaite (1686) 1 Show KB, 64

Papamichalopoulos v Greece (1996) 21 EHRR 434

Patel v Patel [1983] Cr. App. Unbound Transcript 930

Pearce v Scotcher (1882) 9 QBD 162

Pennsylvania Coal v Mahon 260 U.S 393 (1922)

Phipps v Pears [1965] 1 QB 76

Pierson v Post 3 Cai. R 175 (N.Y. Sup. Ct 1805)

Pine Valley Developments Ltd v Ireland (1991) 14 EHRR 319

Pinnacle Meat Processors v UK App. No. 33298/96

Popplewell v Hodgkinson. (1869) Exch LR 248

Powell and Rayner v UK (1990) 12 EHRR 355

Pride of Derby Ltd v British Celanese Ltd (1953) 1 Ch. 149

Proctor v Bailey (1889) 2 Ch. D390

Probosky v Prudential Ins. Co. 767 F.2d 387 (7th Cir. 1985)

R v Denton [1981] 1 WLF 1446

Race v Ward 4 E. & B. 702 n

Rayner v UK, Appl. No. 9310/81 (1986)

Re Simeon v Isle of Wight Rural District Council [1937] Ch. 525

Reno Smelling, Milling and Reduction Works v Stevenson 21 P. 317 (Nv 1889)

Richards v Hill (1695) 5 Mod 206, 87 ER 611, KB
Rigby and Beardmore v Downie (1872) 10 M568
Robertson v Rutherford (1840) 2 D. 1494, (1841) 4 D. 121
Rugby Joint Water Board v Walters [1916] Ch 397
Russel and Handfords Case (1583) 1 Leo 273, 74 ER
S v UK (App. No 11716/85)
Salt Union Ltd v Brunner, Mond and Co [1906] 2 KB 822
Scott v Everitt (1853) 15 D 288
Sporrong & Lönnroth v Sweden (1983) 5 EHRR 35; (1984) 7 EHRR 256
Springhead Spinning Co v Riley (1868) LR 6 Eq 551
State ex rel. State Engineer v Crider 78 N.M. 312, 431 P.2d 45 (1967)
Stephens v Anglian Water Authority [1987] 3 All E.R. 379
Stott v Brown 2001 SCCR 62
Stran Creek Refineries and Straits Andreasidis v Greece (1994) 19 EHRR 293
Sutton v Moody (1697) 1 Ld Raym 250
Tenant v Goldwin (1705) 2 Raym Ld 108
Tennessee, Nashville C & St. L. Ry. V Richert, 19 Tenn. App, 89 S.W. 2d 889 (1935)
Texas Company 176 S.W. 717
The Aberdeen Artie Co v Sutter (1862) 4 Macq. 355
The Case of Swans (1592) 7 Co. Rep. 15b
The North Sea Continental Shelf Cases (1969) ICJ Rep 3
Thomas v Gulf Oil Refining Ltd (1979) 123 SJ
Townsend v State, 147 Ind. 624, 47 N.E. 19
Trailer and Marina (Leven) Ltd v Secretary of State for Food, The Environment and Rural Affairs
 [2004] EWCA Civ 1580

Trailer and Marina (Leven) Ltd v The Secretary of State for the Environment, Food and Rural Affairs
 [2004] EWHC 153

Tre Trakoter Aktiebolag v Sweden [1989] 13 EHRR 309

Trinidad Asphalt v Ambard [1899] A.C. 594

Tyre v UK (1978) 2 EHRR 1

U Po Naing v Burma Oil Company (1929) 56 L.R (IND. APP.) 140

Union Mill & Mining Co. v Dangberg 81 F. 73 (C.C.D. Nev. 1897)

Valentine v Kennedy 1985 SCCR 89

Van Marle v The Netherlands A/101, (1986) 8 EHRR 483

Watt v Jamieson 1965 SC 56

Westmorland and Cambria Natural Gas Co v De Witt 18 A 724 (1889)

Whyte v Lee (1879) 6 R. 699

Williams v Morland (1824) 2 B & C 910

Wilson v Dykes (1872) 10 M 444

Wilsons v Waddel (1876) 3 R 288, affd (1876) 4 R (HL) 29

Young & Co v Bankier Distillery Co (1893) 20 R (HL) 76

BIBLIOGRAPHY

Books

Anderson, T.L., *Water Crisis: Ending the policy drought* (Baltimore: John Hopkins University Press, 1983).

Anderson, T.L. & Snyder, P., *Water Markets: Priming the Invisible Pump* (Washington: Cato Institute, 1997).

Anderson, T.L. & McChesney, F., (eds) *Property Rights: Cooperation, Conflict and Law* (Princeton/Oxford: Princeton University Press, 2003).

Bankton, Lord., *An Institute of the Laws of Scotland in Civil Rights* (1751-53, reprinted by the Stair Society, 1995).

Bell, G.J., *Principles of the Law of Scotland* (10th ed. By W. Guthrie, 1899, reprinted 1989).

Birks, P., (ed) *New Perspectives in the Roman Law of Property* (Oxford: Clarendon Press, 1989).

Blackstone, W. Sir., *Commentaries on the Laws of England* (Oxford: Clarendon Press, 1765-1769).

Blinn, K.W. *et al*, *International Petroleum Exploration and Exploitation Agreements: Legal Economic and Policy Aspects* (London: Euromoney Plc, 1986).

Brazier, M., *Street on Torts*, 11th Ed., (London: Lexis/Nexis UK 1999).

Brown, A., *Human Rights* (Edinburgh: W.Green/Sweet & Maxwell, 2000).

Brownlie, I., *Principles of Public International Law* 6th ed (Oxford: Oxford University Press, 2003).

Brownlie, I., *Basic Documents in International Law* 5th ed (Oxford: Oxford University Press, 2002).

Cameron, P., *Property Rights and Sovereign Rights: The Case of the North Sea* (London: Academic Press, 1983).

Caponera, D.A., *Principles of Water Law and Administration: National and International* (Rotterdam/Brookfield: A.A. Balkema, 1992).

Carey Miller, D.L., *Corporal Moveables in Scots Law* (Edinburgh: W.Green/SUII 1991).

Clark, J.S., *The Oil Century* (Oklahoma: University of Oklahoma Press, 1958).

Coke, E. Sir., *The First Part of the Institutes of the Lawes of England, or, A Commentarie upon Littleton, not the name of the Lawyer onely, but of the Law itself (Coke upon Littleton)* (London: Society of Stationers, 1628).

Craig, T. Sir., *Jus Feudal* 3rd ed trans. by Lord Clyde (Edinburgh/London: William Hodge & Co Ltd, 1934).

Daintith, T.C. & Hill, A.D.C., *Daintith and Willoughby's United Kingdom Oil and Gas Law* 2nd ed (London: Sweet & Maxwell, 1996).

Daintith, T.C. & Willoughby, A., *UK Oil and Gas Law Looseleaf* (London: Sweet and Maxwell, 1997).

Dignam, A.J. & Allen, D., *Companies and the Human Rights Act 1998* (London: Butterworths, 2000).

Dowling, R.A., *Groundwater: our hidden asset* (Wallingford: UK Groundwater Forum, 1998).

Dunedin, Viscount, Wark, J.L., & Black, A.C., *Encyclopaedia of the Laws of Scotland* (Edinburgh: W. Green, 1926).

Ellickson, R.C., *Order Without Law* (Cambridge, MA: Harvard University Press, 1991).

English, D., *Unitisation Agreements in Upstream Oil and Gas* (London: Sweet & Maxwell, 1996).

Encyclopaedia Britannica, III Micropaedia 377 (Chicago: Encyclopaedia Britannica Inc., 1974).

Erskine, J., *An Institute of the Laws of Scotland* 8th ed by James Nicholson (Edinburgh: Butterworths, 1773).

Farran, C.D'O., *Principles of Scots and English Land Law* (Berkhamsted: Geographical Publications, 1958).

Ferguson, J., *The Law of Water and Water Rights in Scotland* (Edinburgh: W. Green, 1907).

Fitzherbert, A. Sir., *Natura Brevium* (London: W. Rascal, 1534).

Gaile, G.L. & Wilmot, C.J., eds *Geography in America* (ERES, 1989).

Goodeve, L., *The Modern Law of Real Property* 1st ed (London: Sweet & Maxwell, 1883).

Gordon, W., *Scottish Land Law* 2nd ed (Edinburgh: W.Green/SULI, 1999).

Gould, J., *The Law of Waters* 1st ed (Chicago: Callaghan, 1883).

Gray, K. & Gray, S.L., *Elements of Land Law* 3rd ed (London: Butterworths, 2001).

Gray, K. & Gray, S.L., *Elements of Land Law* 4th ed (London: Butterworths, 2003).

Halliday, J.M., *Conveyancing Law and Practice in Scotland* 2nd ed (by I.J.S. Talman) (Edinburgh: W.Green, Vol 1 1996, Vol 2 1997).

Halsbury's Laws of England 3rd ed (London: Butterworths, 1964).

Halsbury's Law of England 4th ed (London: Butterworths, 2003).

Harris, D.J., O'Boyle, M. & Warbrick, C., *Law of the European Convention on Human Rights* (London: Butterworths, 1995).

Harrison, R.J., (ed.) *Oil and Gas Law: Cases and Materials* (Halifax, Nova Scotia: Dalhousie University, 1975).

Herningway, *The Law of Oil and Gas* 3rd ed. (St. Paul: West Publishing Company, 1991).

Henderson, T., Trauberman, J. & Gallagher T., *Groundwater Strategies For State Action* (Washington: Environmental Law Institute, 1984).

Heuston, R.V.F. & Buckley, R.A., *Satmond & Heuston on the Law of Torts* 21st ed (London: Sweet & Maxwell, 1996).

Justinian, *Digest* A. Watson (ed.) [with Latin text eds. T. Mommsen and P. Krüger] (Philadelphia, PA: University of Pennsylvania Press, 1985).

Justinian, *Institutes* (Translated into English by J.B. Moyle 5th ed, 1913) available at <http://members.aol.com/hsauctricg/institutes/>.

Kames, Lord., *Principles of Equity* 4th ed (Edinburgh: Kincaid and Bell, 1800).

McAllister, A. & Guthrie, T., *Scottish Property Law : An Introduction* (Edinburgh: Butterworths, 1992).

MacDougall, D.S. & Walde, T., (eds.) *European Energy Law: Selected Topics* (London/Dordrecht: Graham & Trotman/Martinus Nijhoff, 1994).

McLean, J., (ed), *Property and the Constitution* (Oxford: Hart Publishing, 1999).

Mattei, U., *Basic Principles of Property Law: A Comparative and Economic Introduction* (Connecticut/London: Greenwood Press, 2000).

Megarry, R. & Wade, W.R., *The Law of Real Property* 5th ed. (London: Stevens and Sons Ltd, 1984).

Meiners, R.E. & Morriss, A.P., (eds) *The Common Law and the Environment* (Lanham, MD: Rowman & Littlefield, 2000).

Meisel, F. & Cook, P.J., (eds) *Property and Protection: Essays in Honour of Brian Harvey* (Oxford/Portland, Oregon: Hart, 2000).

Murphy, M.B., (ed) *Conservation in Oil and Gas: A Local History, 1948* (New York: 1949, American Bar Association).

Penner, J., *The Idea of Property in Law* (Oxford: Clarendon Press, 1997).

Pettet, B., *Company Law* (Essex: Longman Law Series/Pearsons, 2001).

Presser, S.B. & Zanzaldi, J.S., *Law and American History: Cases and Materials* (St. Paul Minnesota: West, 1980).

Posner, R.A., *Economic Analysis of Law* 6th ed (New York: Aspen, 2003)

Rabello, A.M., (ed) *Aequitas and Equity* (Jerusalem: Greene Fund for Equity Studies, The Harry and Michael Sacher Institute for Legislative Research and Comparative Law, 1997).

Rankine, J., *The Law of Landownership in Scotland* 4th ed (Edinburgh: W. Green, 1909).

Reid, K., (ed) *The Law of Property in Scotland* (Edinburgh: Butterworths, 1996).

Reid, K. & Zimmerman, R., (eds) *A History of Private Law in Scotland* (Oxford: Oxford University Press, 2000).

Rennie, R., *Minerals and the Law of Scotland* (Hertfordshire: Ernis Publishing, 2001).

Robson, P. & McCowan, A., *Property Law* 2nd ed (Edinburgh: W. Green, 1998).

Rogers, W.V. H., *Winfield & Jolowicz on Tort* 16th ed (London: Sweet & Maxwell, 2002).

Rook, D., *Property Law and Human Rights* (London: Blackstone, 2001).

Rose, C.M., *Property and Persuasion: Essays on the History, Theory and Rhetoric of Ownership* (Boulder, Colorado: Westfield, 1994).

Sax, J.L., *Water Law: Cases and Commentaries* (Boulder, Colorado: Pruett Press, 1965).

Smith, R., *Property Law* 4th ed (London: Pearson, 1998).

Smyth, M., *Business and the Human Rights Act 1998* (London: Jordan Publishing, 2000).

Stair (James Dalrymple, 1st Viscount Stair) *Institutions of the Law of Scotland* (Centenary (6th) ed. by D. Walker (Edinburgh: 1991).

Stair Memorial Encyclopaedia (Sir Thomas Smith *et al*, eds, (1987 -1996) (1996 -) *Service and Reissues*.

Taggart, M., *Private Property and Abuse of Rights in Victorian England* (Oxford: Oxford University Press, 2002).

Tarlock, D., *Law of Water Rights and Resources* (Clark Boardman Callaghan, 1998 & Supp, 1999 -).

Taverne, B., *Co-operative Agreements in the Extractive Petroleum Industry* (London/ The Hague: Kluwer International, 1996).

Taylor, M. & Tyne, S., *Taylor and Winsor on Joint Operating Agreements* 2nd ed. (London: Longman, 1992).

- Tee, L., (ed) *Land Law Issues, Debates, Policy* (Collompton, Devon: Willan, 2002).
- Tettenborn, A., *Clerk & Lindsell on Torts* 18th ed. (London: Sweet & Maxwell, 2000).
- Thomas, J.A.C., *Textbook on Roman Law* (Amsterdam/New York: North Holland Pub Co, 1976).
- Wadham, J. & Mountfield, H., *Blackstone's Guide to the Human Rights Act 1998* (London: Blackstone, 1999).
- Wiel, I., *Water rights in western states* 3rd ed. (San Francisco: Bancroft Whitney Co, 1911).
- Worthington, S., *Personal Property Law: text and materials* (London: Hart Publishing, 2000).

Articles

- Allan, A., 'A comparison between the water law reforms in South Africa and Scotland: Can a generic national water law model be developed from these examples?' (2003) 43 *NLR* 419.
- Anderson, D., 'Compensation for Interference with Property' (1999) 6 *EHRLR* 543.
- Anonymous Comment, 'Environmental significance of instream flows' (1986) 17 *St Mary's Lj* 1297.
- Bauer, C., 'Slippery Property Rights: Multiple Water Uses and the Neoliberal Model in Chile 1981-1995' (1998) 38 *NRJ* 109.
- Bennet, J., 'Ownership of Transmigratory Minerals, Utah and Zebras: Proof that Oil and Gas Ownership Law Needs Reform' (2001) 21 *JLREL* 349.
- Behrens, E. & Dore, M., 'Rights of landowners to percolating groundwater in Texas' (1991) 32 *South Texas Law Review* 185.
- Bruff, H., 'Specialized Courts in Administrative Law' (1991) 43 *Admin. L. Rev.* 329.
- Campbell, C., 'The Ownership of Corporeal Property as a Separate Tenement' (2000) 1 *JR* 39.
- Catthy, P., 'Water trading in England and Wales - can we buy that fish a drink' (2001) 12 *Water Law* 338.
- Chamberlain, R., 'A new dimension in the ratable taking of natural gas in Oklahoma : enrolled house bill 1221' (1984) 20 *Tulsa Law Journal* 77.
- Clark, B., 'The Law of Capture: A Brick Dropped in the Pond of Ownership Theory?' (1999) 7 *OGLTR* 178.

- Clark, B., 'Migratory things on land: property rights and a law of capture' (2002) 6.3 *EJCL* (October).
- Coase, R., 'The Problem of Social Costs' (1960) 3 *J.L. & Econ* 1.
- Cooter, R., 'The Cost of Coase' (1982) 11 *J. Legal Stud* 1.
- Cunningham, R., 'Reform of water resource control in England and Wales' (2002) 13 *Water Law* 35.
- Dellapena, J., 'The Importance of Getting Names Right: The Myth of Markets for Water' (2000) 25 *WMMEI PR* 317.
- Farmer, A., 'The EC Water Framework Directive: An Introduction' (2001) 12 *Water Law* 1.
- Finch, P. 'Ransom Strips and Public Rights of Way' (1999) 14 *RWLR* 1.
- Fortuna, J.L., 'Water Rights, Public Resources and Private Commodities: Examining the Current and Future Law Governing the Allocation of Georgia Water' (2004) 38 *Ga Water L. Rev* 1009.
- Galbraith, E., 'Putting a kilt on it: key differences between Scots and English law' (1998) 10 *Corporate Counsel* 51.
- Gregory, A., 'Groundwater and its future: competing interests and burgeoning markets' 11 *Stan. Envtl. L.J.* 229
- Hardin, G., 'The tragedy of the commons' (1968) 162 *Science* 1243.
- Hardwicke, B., 'The Rule of Capture and its Implications as Applied to Oil and Gas' (1935) 13 *Texas Law Review* 391.
- Harrison, S., 'The Historical Development of Nevada Water Law' (2001) 5 *University of Denver Water Law Review* 148.
- Harwood, M., 'Water, water, everywhere' (1987) *The Conveyancer* 175.
- Hayek, F.A., 'The Use of Knowledge In Society' (1945) 35 *Am. Econ. Rev.* 519.
- Hendry, S., 'Enabling the framework - the Water Environment and Water Services (Scotland) Act 2003' (2003) 14 *Water Law* 16.
- Howarth, W., 'Abstraction Licences, Property Rights and Compensation' (2002) 13 *Water Law* 95.
- Johnson, N.K. & DuMars, C.T., 'A Survey of the Evolution of Western Water Law in response to Changing Economic and Public Interest Demands' (1989) 29 *NRJ* 347.
- Kaiser, R. & Skilleen, F.F., 'Deep Trouble: A discussion of the Edwards Aquifer water crisis' (1997) 6 *SC Envtl L.J.* 213.

Kletzing, P., 'Imported groundwater banking: the kern water bank--a case study' (1988) 19 *PACLJ* 1225.

Landry, C., 'Buy that fish a drink: 'The United States' approach to environmental protection in an era of water marketing' (2001) 12 *Water Law* 240.

Large, D., 'The Land Law of Scotland: A Comparison with American and English Concepts' (1986) 17 *Envtl. L.* 1.

Leigh, I. & Lustgarten, L., 'Making Rights Real: The Courts, Remedies and the Human Rights Act' (1999) *CLJ* 509.

Lyall, F., 'The maxim cuius est solum in Scots Law' (1978) *JR* 147.

McCleskey, R.A., 'Maybe Oil and Water Should Mix -- at least in Texas Water Law' (1994) 1 *TXWLR* 207.

McKenzie Skene, D. *et al* 'Stewardship: from rhetoric to reality', (1999) 3 *Edin LR* 151.

Marriage, 'North Sea Financing in the United Kingdom' (1977) 5 *Int Bus Lawyer* 207.

Morriss, A.P., Yandle, B. & Anderson, T.L., 'Principles for Water' (2002) 15. *Tul. Env'tl LJ* 335.

Moses, R.J., 'Basic Groundwater Problems' (1969) 14 *Rocky Mt Min. L. Fdn. Inst* 501.

Murillo, A., Bough, J. & Cook, H., 'Groundwater Abstraction and Legislative Control' (1999) 10 *Water Law* 130.

Murphy, E.F., 'The Recurring State Judicial Task of Choosing Rules for Groundwater : How Occult Still?' (1987) *NLR* 120.

Murray, P. & Cross, F., 'The case for a Texas compulsory unitization statute' (1992) 23 *Sr Mary's LJ*, 1099.

Norris, K., 'The Stagnation of Texas Ground Water law: a political v environmental stalemate' (1990) 22 *STMLJ* 493.

Nwosu, K., 'Is the Law of Capture applicable in Petroleum Operations in the North Sea?' (1997) 1 *CALR* 117.

Opiela, E., 'The rule of capture in Texas: an outdated principle beyond its time' (2002) 6 *UDENWLR* 87.

Palmer, S., 'Human Rights: Implications for Labour Law' (2000) 59 *CLJ* 168.

Penner, J., 'The Bundle of Rights Picture of Property' (1996) 43 *UCLA L. Rev* 711.

Phillip *et al*, 'Modern Law of Conservation: And You Thought the Law of Capture was Dead' (1995) 41 *Rocky Mt. Min. Inst.* 17.

Roberts, N., 'The Law Lords and Human Rights: the experience of the Privy Council in interpreting Bills of Rights' (2000) 2 *EHRLR* 147.

Shannon Shadwick, L., 'Obsolescence, Environmental Endangerment and Possible Federal Intervention Compel Reformation of Texas Groundwater' (1991) 32 *STCLR* 641.

Sherk, G., 'Eastern water law' (1986) 1 *Nat'l Resources & Env't* 47.

Sherk, G., Wouters, P. & Rochford, S., 'Water wars in the near future? Reconciling competing claims for the world's diminishing freshwater resources – the challenge of the new millennium' *CEPML On-line journal*, vol 3, art 2.

Strantz, N.J., 'Rights to groundwater in North Dakota: trends and opportunities' (1995) 71 *NCLR*.

Taguchi, T.L., 'Whose space it is anyway? Protecting the public interest in allocating storage space in California's groundwater basins' (2003) 32 *Sw. U.L. Rev.* 117.

Teclaff, L., 'The River Basin Concept and Climate Change' (1991) 8 *Pace Envtl. L. Rev.* 355.

Teclaff, L., 'Evolution of the River Basin Concept in National and International Water Law' (1996) 36 *Nat. Resources J.* 359.

Todd, D., 'Common Resources, Private Rights and Liabilities: A Case Study on Texas Groundwater Law' (1992) 32 *Nat Resources J* 233.

Turner, W., 'Water rights can't be saved : use them or lose them' (9th July 2004) available at <http://www.waterbank.com/Newsletters/nws45.html> last visited, 1st April 2005.

Underkuffler-Freud, L.S., 'Takings and the Nature of Property' (1996) 9 *CANJLJUR* 161.

Votteler, T., 'The little fish that roared: The Endangered Species Act, state groundwater law, and private property rights collide over Texas Edwards aquifer' (1998) 28 *ENTL* 845.

Wilberg, H., 'Public Resource Allocation, Nuisance and the Human Rights Act 1998' (2004) 120 *LQR* 574.

Dissertations

Nwosu, K., *Regulatory Requirements and Practice of Unitisation: Implications on the Correlative Rights of Adjoining Petroleum Licensees in the UKCS* (1997) (LLM dissertation : Centre for Energy, Petroleum and Mineral Law and Policy, University of Dundee).

Pitsas, N., *The Joint Operating Agreement in the UK - the rationale behind the main provisions*, (1991) (PgD dissertation : Centre for Petroleum and Mineral Law and Policy, University of Dundee).

Conference proceedings

Bentham, R., *The concept of a continental shelf and the financial problems of exploitation in "Fifth Commonwealth law conference proceedings and papers"* (Dundee : CPMLP, 1977).

Foulkes, G., *The Scottish Contribution to International Development* Statement to the Scottish Grand Committee, 10 July 2000 available at http://www.dundee.ac.uk/law/water/foulkes_speech.htm last visited, 10th December 2002.

Higgins, R., *Ten Years of State Involvement In the Petroleum Industry* Energy Law Seminar Proceedings (1979) Churchill College, Cambridge.

Hughes, R., *Department of Energy View on Unitisation* Langham Oil Conferences, London (March 26 1992).

International Law Association, *Report of the Forty-Seventh Conference* 242 (1956) (Held in Dobrovnik).

Kahin, B., *The paradox of private legislation: business, economic and political effects of patents on information processes* 'Is Software Patentability Necessary' Conference (2002, European Parliament) available at <http://www.greens-cfa.org/pdf/documents/SoftwarePatenting/TextKahin.pdf> last visited, 1st April 2005.

Report of the Fifty-Second Conference Held at Helsinki, 1966, at 484, International Law Association (1966), reprinted in ILA, *Helsinki Rules on the uses of the waters of international rivers* (1967).

Symposium Urgent Action Needed for Water Security: Stockholm Statement 2002, principle ,1 available at www.siwi.org/Aners/Steph/downloads2002_Swedish_Statement.pdf last visited, 10th March 2003.

Water - Key to Sustainable Development: Recommendations for Action, International Conference on Freshwater, Bonn, Dec 2001.

Wouters, P., *Water Law : Achieving Equitable and Sustainable Use of Water Resources* (Guest Editor's Note) Papers Presented at the Dundee Water Law and Policy Seminar (July 2000) available at

<http://www.dundee.ac.uk/law/iwlr/Documents/Research/IWJ.RI%20Team/Wouters/iwra.pdf>. last visited, 1st April 2005.

Reports

Andrews, K., *The Future for Scotland's Waters: Analysis of Costs and Benefits : Costs and Benefits of Implementation of the EC Water Framework Directive (2000/60/EC) In Scotland* Final Report to the Scottish Executive (June 2002).

Biodiversity Challenge/The Wildlife & Countryside Link *High and Dry* (1996); available from the Wildlife and Countryside Link, 89 Albert Embankment, London, SE1 7TP.

DEFRA *Tuning Water Taking -- Government Decisions Following Water Consultation of the Economic Instruments in Relation to Water Abstraction* (June 2001).

DETR *Economic Investment in Relation to Water Abstraction: A Consultation Paper* (April 2000) available at <http://www.environment.detr.gov.uk/consult/ecowater/index.htm> last visited, 10th March 2003.

ENDS report 351, *Scotland gets ahead on new water environment controls* (Environmental Data Services Limited, April 2004).

English Nature, *Water Abstraction and Sites of Special Scientific Interest in England* (Wetherby : Two-Ten Ltd, 2000).

The Environment Agency, *Environment Facts and Figures*: available at <http://www.environment-agency.gov.uk/yourenv/eff/water/213872/609264/?version=1&lang=e> last visited, April 2005.

Farmer, A. & Monkhouse, C., *Analysis of Responses to Rivers, Lochs, Coasts : The Future of Scotland's Waters: Final report to the Scottish Executive* (Institute for European Policy, January 2002).

Mays, R. & Clark, B., *Alternative Dispute Resolution in Scotland* (Scottish Office Central Research Unit, 1999).

Ministry of Agriculture, Fisheries and Food, *Survey of irrigation of outdoor crops in 1995* (York : Governmental Statistical Service, 1996).

Nevada Division of Water Planning, Nevada Water Facts available at <http://www.state.nv.us/cnr/ndwp/wat-fact/precip.htm> last visited, 10th March 2003.

Scottish Environmental Protection Agency, *State of the Environment, Water Quality Report : Part 1* (1996) available at http://www.sepa.org.uk/publications/state_of/1996waterquality/report/text/watertext.htm last visited, 1st April 2005.

Scottish Environmental Protection Agency, *Water Framework Directive: Technical Annexes 2 and 5 Consultation Summary of Responses* March 2003 available at http://www.sepa.org.uk/pdf/wfd/II_V_consultation_summary_responses.pdf last visited, 1st April 2005.

Scottish Executive Environment Group, Consultation Paper *Rivers, Lochs, Coasts: The Future of Scotland's Waters* (2001) available at <http://www.scotland.gov.uk/consultations/environment/ffsw-00.asp> last visited, 1st April 2005.

Scottish Executive Environment Group, *The Future of Scotland's Waters - Proposals for Legislation* (Feb 2002) available at <http://www.scotland.gov.uk/consultations/environment/FFSW2-00.asp> last visited, 1st April 2005.

Scottish Executive Environment Group *Controlled Activities Regulations: A Consultation* Consultation Paper (April 2004) available at <http://www.scotland.gov.uk/consultations/environment/carc04-00.asp> last visited, 1st April 2005.

Scottish Executive Environment Group (*Controlled Activities*) (*Scotland*) *Regulations 2004: Draft Regulations: Analysis of Responses to the Scottish Executive 11th* (March 2005) available at <http://www.Scotland.gov.uk/library5/environment/twecar-07.asp> last visited, April 2005.

Scottish Executive Environment Group *Controlled Environment Activities Regulations: Revised Proposals for General Binding Rules* (March 2005) available at <http://www.scotland.gov.uk/library5/environment/carrpg.pdf> last visited, April 2005.