

MIGRATORY THINGS ON LAND: Property Rights and a Law of Capture

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1. Introduction

This article is concerned with an analysis and discussion of how both Scottish and English law approach and rationalise rights in property and other resulting and associated rights in relation to fugacious and migratory properties which move to and fro across tracts of land by virtue of their inherent characteristics. This definition encompasses such things as running water, wild animals and fugacious minerals. For want of a more eloquent means of expression, in this article such objects have been termed 'migratory things'.⁽²⁾

The article begins by seeking to establish two main principles: first, the extent to which rights of property can be said to exist in migratory things present upon or beneath land and secondly, the extent to which a law of capture operates in relation to such things. A law of capture would sanction the appropriation of migratory things from another's land by the carrying out of works or some other activity upon one's own land. The term 'law of capture' was first coined during the oil boom in late 19th century USA, where the expression was used to describe the legal sanctioning of the appropriation from a common reservoir of oil underlying the land of another by legitimate drilling activities. The courts at that time were quick to draw analogies with, and draw upon the law relating to, other things that were perceived to share the 'vagrant' characteristics of oil such as running waters and wild animals.

As this article will illustrate, however, the law relating to migratory things is opaque and uncertain, and both under Scots and under English law there may be real difficulties in rationalising judicial approaches to migratory things with established principles of land law. This article seeks to unravel at least some of the uncertainties that exist, compare and contrast the approaches of the two systems, and discuss some of the problems invoked by the current state of the law.

2. Ownership

2.1 What is ownership?

In assisting the analysis it may first be prudent to cast an eye over what the concept of ownership in general entails. In common parlance, ownership is a term that most of us take for granted in that if we buy, are given or inherit items, ownership generally follows. Ownership implies the general liberty to use, dispose, destroy or transfer the thing in question to others. If ownership rights are to be meaningful in any practical way then it is important that they are safeguarded in some sense against the actions and claims of others. The right of ownership is safeguarded by (amongst others means) law. Ownership can thus be referred to as 'the legal right that a legal system grants to an individual in order to allow him or her to exercise the maximum degree of formalized control over a scarce resource'.⁽³⁾ This idea can be derived from the civil law concept of *dominium*, the greatest right in property to 'use and

dispose of a thing in the most absolute way alluded to in early Roman texts'.⁽⁴⁾ This concept of *dominium* is the 'ultimate right, that which has no right behind it'.⁽⁵⁾ Common law sources also refer to such a definition. According to Blackstone, ownership could be considered as 'the sole and despotic *dominium* of an individual over a thing'.⁽⁶⁾ As we shall see, however, English law arguably does not countenance the idea of ownership, at least in its full civilian sense.

It should be noted, however, that the right of ownership is seldom an absolute right. As Mattei notes '[c]ommon law countries have been traditionally cautious to emphasize the extent of the owner's powers, always employing the idea of reasonableness to limit him or her in the interest of his or her neighbors. It is of no surprise therefore that the most important contribution of Anglo-American legal scholarship to property law is the metaphor of the bundle of rights. This clever metaphor defines ownership (and property) as a bundle of rights (and duties) enjoyed by an individual over a thing'.⁽⁷⁾

As Smith therefore states, '[t]here is rarely an unlimited right to use property, witness the tort of nuisance and planning permission requirements for land development'.⁽⁸⁾ In general therefore it can be said that an owner's rights are often limited under both common law and statute to take account of the rights of others. We shall return to this idea later.

2.2 The importance of ownership

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'.⁽⁹⁾

The way in which such remedies arise across the Scottish and English systems are not the same, however. Scots law follows Roman law in stipulating that ownership is an absolute right.⁽¹⁰⁾ As Carey Miller states '[p]roof of a right of ownership prevails over other claims not derived from the owner's right'.⁽¹¹⁾ Whereas under Scots law, therefore, remedies tend to arise as a result of the fact of ownership, this is by contrast often not the case south of the border. As Smith states, '[o]wnership 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'.⁽¹²⁾

This legal proposition is very much symptomatic of the historical inductive development of the common law system, whereby it was the existence of recognised legal remedies themselves that bestowed rights, rather than the deductive civilian notion that the existence of a general right would confer certain remedies. As no special remedies under English common law have developed to enforce proprietary rights, actions tend to be brought on grounds such as trespass, tort or nuisance, which are based upon interference with possession.⁽¹³⁾

As this article will illustrate, in many instances, the English cases which deal with migratory things are therefore not generally concerned with whether or not ownership vests in the thing appropriated but rather whether any remedy arises where the right of one party is damaged by the actions of another - for example, in nuisance, under a right of support or contrary to certain riparian rights. In Scotland, although such grounds of complaint may be sought where appropriate, remedies do arise from the fact of ownership itself and hence the more important issue is likely to be *dominium* and rights which arise therefrom.

3. General principles of landownership

3.1 The 'infinite carrot'?

3.1.1 England

The absolute nature of the rights to the land bestowed by a grant in fee simple have been set out by Coke as

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 necessaries 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 said, but of ayre and all other things up to heaven, for *cujus est solum ejus est usque ad coelum* . . .⁽¹⁴⁾

This last maxim, literally that 'to whomsoever the soil belongs he also owns it to the sky', was later augmented by '*ad centrum terrae*' - to the centre of the earth - or '*et ad inferos*' - to the depths. As we shall see, below, however, this concept has been limited in a practical sense under English law.

3.1.2 Scotland

The doctrine is also recognised under Scots land law. In Scotland 'a conveyance of land in unqualified terms [*dominium utile*] gives a right to property in the substance or solid contents of the land without any assignable limit. This is what is meant by a conveyance being *a coelo usque ad centrum*. There are no limits in the vertical direction except such as physical conditions impose.'⁽¹⁵⁾

3.2 Practical effects of the doctrine

What the doctrine in its pure sense means is that the owner in fee simple or holder of the *dominium utile* has an absolute right to not only the *solum* but everything above this including air space and all that lies below the ground. The property rights bestowed on the owner are of course not absolute in the sense that they are restricted under both common law and statute in a number of ways and also subject to subordinate real rights which others may hold over the land. Aside from these exceptions, strict adherence to the doctrine would by definition mean that migratory things on land such as running water and fugacious minerals are the property of the landowner. As we shall see, however, this may not be the case.

3.2.1 *The doctrine in England*

The general thrust of the doctrine itself has been attacked, particularly south of the border, where it has been described as a 'fanciful phrase'.⁽¹⁶⁾ Indeed operation of the doctrine appears to have been watered down significantly in England and Wales. This is probably in a large part due to the fact already alluded to that under English common law the issue of ownership is rarely a factor in determining whether a remedy will arise in any particular case. What is important is whether any legal rights of the landowner have been infringed - and such a right will exist only if there is a known remedy supporting it (and not the other way around). The common law does not exhibit any special remedies based upon ownership, therefore it would seem that other remedies (for example, in tort or in trespass) must be put forward by the aggrieved party.⁽¹⁷⁾

Most of the relevant cases where the doctrine is discussed relate to trespass or intrusion into airspace in some way by an adjacent landowner. These cases bear out the limited practical nature of the *cujus est solum* brocard in England and Wales. It seems according to these authorities that some sort of damage or injury must be proven before an action for trespass into airspace will be upheld and general doubt has been cast over the extent to which ownership can be held in a vertical limit up to the heavens.⁽¹⁸⁾

Although the case law is by no means consistent, it is arguable that the current situation under English law can perhaps best be summed up by Griffiths J in *Bernstein v Skyviews and General Ltd*:

The problem is to balance the rights of an owner to enjoy the use of his land against the rights of the general public to take advantage of all that science now offers in the use of air space. The balance is in my judgement best struck in our present society by restricting the rights of an owner in the air space above his land to such height as is necessary for the ordinary use and enjoyment of his land and the structures upon it, and declaring that above that height he has no greater rights in the air space than any other member of the public.⁽¹⁹⁾

3.2.2 *The doctrine in Scotland*

In contrast to the tenuous status of the doctrine south of the border, it would appear that it remains strong in Scotland. In Scotland, the doctrine *cujus est solum* arguably extends to airspace above the land without limit.⁽²⁰⁾ Unlike the

position south of the border, as Reid contends, '[t]he question is one of *dominium*, not of the balancing of “rights”; and the authorities are unanimous in asserting that *dominium* lies in the landowner and in him alone.'⁽²¹⁾ It is arguable, however, that the sparse case-law reveals more ambiguity than Reid would suggest.

In Scots law, the general rule seems clear that any overhanging structural projection into another's airspace would require to be removed if the adjacent proprietor objected.⁽²²⁾ The position in Scotland relating to overhanging trees is blighted by a lack of case-law. From neither *Halkerston v Wedderburn*⁽²³⁾ nor *Brokie v Scougal*⁽²⁴⁾ can any definitive principles be deduced; it being unclear to what extent the damage to property needs to be proven.

In the one modern case in this area, the court made express reference to the *cujus est solum* argument when it granted interdict against crane operators when the jib of one of their cranes passed over a landowner's tract of land.⁽²⁵⁾ It should be noted, however, that in this case, the pursuer did allege danger to himself and his family and is it unclear from the case-report the extent to which this element of danger was pertinent to the court reaching the decision that an interdict be granted.⁽²⁶⁾

3.3 Subterranean rights

Apart from certain reservations to the Crown and created conventional reservations or separate tenements, as a consequence of the *cujus est solum* doctrine, owners of the *solum* are entitled to all which lies beneath their properties to the centre of the earth. In Scotland therefore '[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.'⁽²⁷⁾

The same applies in England and subject to similar exceptions set out above, all beneath the property including minerals belongs to the owner of the *solum*. Indeed the English position is enshrined in statute in the sense that 'land' as defined in s 205(1)(ix) of the Law of Property Act 1925 includes 'land (of any tenure) and mines and minerals . . . buildings or parts thereof and other corporeal hereditaments'.

4. Property rights in migratory things

A few basic observations can be made prior to examining property rights which exist across the various migratory things. Certain of these objects are treated as *res nullius*, i.e. things in their natural state incapable of individual ownership but generally owned by the first person to acquire or contain them in some way. In others, a qualified property right - generally a right to reduce into possession - may be vested in the landowner. In others, still, it is arguable that ownership of the thing *in situ* is possible (notwithstanding that it has not yet been reduced into possession).

As a general point, the limitations placed upon the landowner's rights of property in such items which are situated on his land can be viewed as limitations on strict operation of the doctrine *cujus est solum*.

4.1 Property rights in running water in Scotland and England

4.1.1 General points under English law

Notwithstanding that there are certain rights in water which arise by virtue of ownership of riparian property, it has been asserted that flowing water, whether flowing in a known and defined channel or percolating through the soil in a random fashion is not the subject of ownership at common law.⁽²⁸⁾ 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.

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 the subject of property, albeit only throughout the time of possession.⁽²⁹⁾ Similarly, 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.⁽³⁰⁾

4.1.2 Riparian rights in England

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. For example, at common law, a riparian although not able to draw away all the water, has certain rights: he has the sole right to fish in the water;⁽³¹⁾ 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;⁽³²⁾ he has the right to take and use water for all reasonable domestic purposes⁽³³⁾ or perhaps in some cases manufacturing purposes even where this may result in the stream being exhausted;⁽³⁴⁾ and he has the right to draw water for extraordinary purposes provided that such use is reasonable⁽³⁵⁾ and the water is not substantially altered in volume or character.⁽³⁶⁾

Known and defined channels may also exist underground and the same rules which apply to those channels above ground also apply 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 *Black v Ballymena Township Commissioners*,⁽³⁷⁾ Chatterton VC remarked:

The 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.⁽³⁸⁾

Such riparian rights have no role to play in the case of underground water which percolates in an unknown, random way. Landowners have no right to

replenishment of this source and thus an adjacent landowner can extract such water with no regard to the rights of others whose land dries up as a result of water failing to arrive there.⁽³⁹⁾ Furthermore, the motives behind one landowner's abstraction of the percolating water appear to be of no relevance. 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 found that this was irrelevant in finding no grounds of action for the defendant.⁽⁴⁰⁾

4.1.3 Property rights and subterranean water in England

These above cases are often 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 often 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 judgements not particularly sound.⁽⁴¹⁾

In fact, in *Acton v Blundell*, which concerned the right of a landowner to divert underground water away from the land of another,⁽⁴²⁾ the Lord Chief Justice expressed the view that 'the owner of the soil [has] all that lies beneath the surface; the land below is his property, whether it be solid rock, or porous ground, or venous earth, or *part soil, part water*' (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 such water is *pars soli*. Campbell has cast doubt on this viewpoint, however, remarking that,

the context in which the dictum was expressed however was . . . the question 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.⁽⁴³⁾

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 viewpoint that underground percolating water is *res nullius* is supported by the approach taken in *Ballard v Tomlinson*,⁽⁴⁴⁾ where in determining whether a right to claim for the pollution of underground percolating water may arise, the court held that a claim could arise even though such water was *res nullius*.

Notwithstanding this view, 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 JA, 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'.⁽⁴⁵⁾ Again this at least seems to imply that such underground water is the property of the landowner when it arrives beneath his land.

4.1.4 General points in Scots water law

As Whitty has remarked, '[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.'⁽⁴⁶⁾

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 marked variances in approaches can be seen.

In relation to ownership of water, Scots law adopts the Roman law distinction between running water and standing water. As Stair states, 'running waters are common to all men, because they have no bounds; but water standing, and capable of bounds, is appropriated'.⁽⁴⁷⁾ Reid suggests that '[r]unning water, at least when left to run in its natural state, is treated as ownerless'.⁽⁴⁸⁾ As we shall see below, it is at least arguable that this is not always the case.

4.1.5 Riparian rights in Scotland

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.⁽⁴⁹⁾ For example, a riparian proprietor has a general right to make use of water which passes over his land and may consume it for domestic (although not industrial) purposes.⁽⁵⁰⁾

In relation to surface water outside of a definite channel, it appears like the position under English common law; it 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 have no role to play here.⁽⁵¹⁾ The same applies to underground water not in a known and defined channel - a principle derived from civil law.⁽⁵²⁾

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 heritor for purely spiteful reasons.⁽⁵³⁾ This is because in Scotland the right to drain away the water is subject to the doctrine *aemulatio vicini* under the law of nuisance.⁽⁵⁴⁾

Reid's view that running water is not capable of ownership is perhaps somewhat debatable. This view, based upon the writings of Erskine and Bankton,⁽⁵⁵⁾ was also followed in by the court in *Morris v Bicket*.⁽⁵⁶⁾ This view is by no means unanimous, however. Although Rankine does support the traditional viewpoint that water in a defined channel is owned by no one,⁽⁵⁷⁾ he views that in certain cases it may be that running water not in a defined and known channel may be held to be the property of the landowner.⁽⁵⁸⁾

What amounts to 'running' is also open to question. Does 'running' necessarily entail it running in a known, defined way or is water percolating underground in a random or unknown fashion included within such a definition? *The Encyclopaedia of Scots Law*, 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'.⁽⁵⁹⁾ A little later, however⁽⁶⁰⁾, it states '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'.⁽⁶¹⁾

This viewpoint that there may be property in underground percolating water was followed by the court in *Crichton v Turnbull*.⁽⁶²⁾ 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 viewed that percolating water was *pars soli* and could not therefore be conveyed separately from the land itself.⁽⁶³⁾ Such views 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).

4.2 Rights of property in fugacious minerals and other sub-soil materials

Under both Scots and English common law, all mines and minerals that lie beneath the soil are the property of the owner of the *solum, a coelo usque ad centrum*.⁽⁶⁴⁾ The common law position as to fugacious minerals such as hydrocarbons has never been as clear-cut, however. Prior to the statutory intervention of 1934, which vested all petroleum on-shore rights in the Crown, it was unclear as to the extent and nature of property rights held in situ in petroleum reserves. Indeed, the government of the day argued that given the uncertainties which shrouded common law rights to petroleum *in situ* the drastic step of vesting such rights in the Crown was necessary to facilitate exploration.⁽⁶⁵⁾ Much debate centred at this time on 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 water⁽⁶⁶⁾) merely *res nullius* until reduced into possession.

Given the fact that petroleum reserves (which includes oil and natural gas) have been vested in the Crown through statute, there is a dearth of judicial authority in the UK concerning the property rights that landowners hold in oil and gas deposits on their land. In light of a spate of US cases regarding rights of ownership in petroleum reserves, it seems prudent, however, to examine some of the common law theories of ownership that have developed Stateside. Additionally, a clutch of UK and Commonwealth cases dealing with fugacious and semi-fugacious minerals and other sub-soil properties may provide some guidance in this area.

4.3 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 recognised there.

4.3.1 *Hydrocarbons as res nullius*

At the time of the first cases relating to property rights in hydrocarbons, the US courts found it difficult to reconcile traditional notions of ownership with a substance that moved of its own volition to and fro beneath the soil. Given the fact that it was perceived that only wild animals and running waters shared these vagrant characteristics, the courts were quick to draw analogies with such things and apply their interpretations of English common law relating to such issues to hydrocarbons.⁽⁶⁷⁾ Such analogies generally led to the result that a landowner would have no property in underground hydrocarbon deposits until the same was extracted and reduced into possession.⁽⁶⁸⁾

It should be pointed out at this stage that the analogy drawn between hydrocarbons and 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 *in strata* that prevailed at the time of these decisions. As is now widely recognised, neither the migratory and fugacious nature of water or the vagrant characteristics of wild animals can readily be attributed to hydrocarbons given that '[o]il and gas occur in essentially closed systems with possible ownership restricted to the owners overlying the reservoir'.⁽⁶⁹⁾ Moreover, until tapped these minerals do tend to remain relatively stable within a given reservoir.⁽⁷⁰⁾

These early court decisions were 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. Where no similar cases in fact exist, the courts attempt to draw analogies to find relevant rules that can be applied.⁽⁷¹⁾

Today, the law relating to the ownership of oil and gas in most US states has developed since the early decisions and can now be divided into two main theories: first, a recognition of ownership of hydrocarbons 'in place' beneath the surface of the ground; and secondly, those that recognise no ownership in hydrocarbons *in situ*, only a qualified proprietary right to search for and reduce the same into possession.

4.3.2 *'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.⁽⁷²⁾ In what can be 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.

4.3.3 *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 right to acquire such absolute title by reducing the hydrocarbons into possession. This proprietary right is analogous with a *profit a prendre* under English common law or a servitude right to minerals under Scots law.⁽⁷³⁾

4.4 English/Commonwealth cases relating to subsoil substances

UK and Commonwealth cases relating to fugacious subsoil substances may also prove instructive in this area. The majority of these cases, however, are concerned with issues of support rather than property in the migratory thing and are hence dealt with below in the law of capture section.⁽⁷⁴⁾

4.4.1 Natural gas

Two contradictory cases on the extent to which property rights may be said to exist in natural gas *in situ* can be mentioned at this point, however.

In *U Po Naing v Burma Oil Company*,⁽⁷⁵⁾ the defendants had a lease to a number of oil well 'sites' and right to take oil from them. In attempting to extract the oil, the defendants, although largely unsuccessful in this respect, 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 because natural gas, *in situ*, as a migratory substance akin to underground percolating water is *res nullius*, and therefore not a subject of ownership.

The Privy Council, however, performed a notable *volte face* in the ensuing *Boys v Canadian Pacific Railway* decision.⁽⁷⁶⁾ In this case, CPR sold land to Boys, subject to 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'.⁽⁷⁷⁾ This is in direct contrast to the opinion of the court in *U Po Naing* that gas *in situ* is *res nullius*. As we shall see below, however, the fact that the gas was the property of the landowner had no bearing on the fact that it could legitimately be captured by the drilling party.

4.4.2 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 regarded as in Scots law. We may speculate as to what the position would be by deducing from general principles. It is incontrovertible that the maxim *cujus est solum* is a principle of Scots law. It therefore follows that in general

minerals are *pars soli* and owned *in situ*. Whilst the position regarding underground percolating water is unclear and is plausibly best viewed as *res nullius*, it would appear that given the relatively stable nature of oil and gas, there is no reason why such hydrocarbons would not best be viewed as *pars soli* and hence owned *in situ*.

5. A law of capture?

In general terms, a law of capture would sanction the appropriation by an adjacent landowner of property which may either be the property of another person or is (albeit perhaps temporarily) present on the other party's land in some way. Thus, the physical act of capture is sanctioned by the law. Some cases also involve the idea of legal capture in the sense that the physical act of capture also implies the acquisition of ownership.

Whether capture is merely physical or 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.

It should be noted that in examining whether or not such a law of capture exists the issues which the court must determine may not always be the same. This is because in some cases, the value of the object itself which is being captured is the important factor (for example, hydrocarbons) - in other cases, the more likely practical issue is the consequence rendered by capture of the substance (for example, where the withdrawal of water causes adjacent land to subside).

5.1 The law of capture and *occupatio*

The idea of taking possession of and gaining legal title to corporeal moveable property is of course not a new one and the Roman doctrine of *occupatio* stipulated that anything capable of private ownership and not already owned could be acquired by taking possession of it.⁽⁷⁸⁾ It followed, therefore, that property in underground water or wild animals could 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 to those which had ceased to be owned. Although the doctrine of *occupatio* has been adopted by Scots law, the general rule is that it only sanctions the appropriation of things that have never had an owner.⁽⁷⁹⁾ Things which had been once owned but have since been lost or given up generally belong to the Crown.⁽⁸⁰⁾

The key point to note 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. Hence, in relation to migratory things, where the thing is owned *in situ* then 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 animals) 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. For example, it is one thing for oil to migrate by natural causes to beneath the land of another; it is quite another for that oil to migrate *because* of the drilling activities of the other party.

The situation may of course be 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. While this may be relevant in cases relating to the appropriation of hydrocarbons, the underground water capture cases tend more to be concerned with the drying up of neighbouring land and it is doubtful in these cases whether the water is in fact reduced into possession by the party whose works draw the water away. Hence, the applicability of *occupatio* may not be a relevant factor here.

5.2 Water

5.2.1 England and Wales

While certain riparian rights regulate water running in a known, defined way entailing entitlement to a continual flow (subject to the rights of others to take water), it has been asserted that as a landowner has the absolute right to make use of water percolating under his land then 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.⁽⁸¹⁾ While this may be so, the rationale behind this viewpoint has traditionally been based upon a clutch of early cases and it is the view of this writer that many of these early decisions have in fact been misunderstood.

The earliest decision in this respect is *Acton v Blundell*.⁽⁸²⁾ The headnote to this case would appear to be unequivocal as it reads that '[t]he 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 operations in his own land in the usual manner, drains away the water from the first mentioned owner, and lays his well dry'.⁽⁸³⁾

It is important to note, however, that this headnote does not in fact accurately describe the legal principle determined in this case. In *Acton*, 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 '[t]he 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 action'.⁽⁸⁴⁾

Although this seems unequivocal, it should be noted that the pleading in the case was somewhat vague and the judgement slightly confused. As MacIntyre has noted, on a true interpretation of the facts, '[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'⁽⁸⁵⁾ (emphasis added).

Although the Lord Justice did view that the water lying underneath the proprietor's land (which he incidentally viewed as *pars soli*) could be appropriated by the lawful works of another, this comment was not directly relevant to the facts of the case and should therefore be viewed as merely *obiter*. On the facts, therefore, the case does not support the right to appropriate underground water from beneath the land of another.

Subsequent cases which have been referred to in support of the notion that a law of capture relates to subterranean water include *Chasemore v Richards*⁽⁸⁶⁾ and *Bradford v Pickles*⁽⁸⁷⁾. In *Chasemore*, a House of Lords decision which has been said to form the leading authority in the area,⁽⁸⁸⁾ 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 now found his operations thwarted by a water shortage.

Again writers have latched on to this case as supporting the notion that water may be legitimately extracted from beneath another's land. Ferguson, for example, asserts 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 effect his neighbours well'.⁽⁸⁹⁾ It is submitted that this viewpoint is flawed. In *Chasemore*, a study of the facts reveals that the water had been intercepted *prior* to it 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.

Despite the misconceptions concerning these early cases, there is nonetheless direct authority that suggests that underground water can be appropriated from beneath an adjacent land without committing any actionable wrong. The earliest case seems to be *Popplewell v Hodkinson* (1869) Exch LR 248.⁽⁹⁰⁾ Importantly, what this case hinges upon is not whether ownership is possible in underground water but whether a right of support of the water exists at common law. Indeed, it was conceded by counsel for the pursuers that '[a]ccording to *Chasemore v Richards*, and other cases, a man cannot claim a right to subterranean water as such'. As has been noted, it is 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 property rights in underground water did not mean that there was no right to support of 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*.⁽⁹¹⁾ 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'.⁽⁹²⁾ 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.

Popplewell has been followed in more recent judgements including *Langbrook Properties Ltd v Surrey County Council* (1970 1 WLR 161) and *Thomas v Gulf Oil Refining Ltd*.⁽⁹³⁾ 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. 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 in respect of underground water.⁽⁹⁴⁾

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 to conflict with the rights of others in a flowing stream (for example, 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*,⁽⁹⁵⁾ Hatherley LC, overruling the judgement of Jessel MR, held that where a landowner's operations had the effect of draining off water which was flowing in a natural stream then he may be prohibited in so doing. At p. 488, 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 in quality and undiminished in quantity.

This judgement has subsequently been interpreted in a very narrow sense, however. In what may appear a somewhat creative decision, Lord Alverstone in the case of *English v Metropolitan Water Board*⁽⁹⁶⁾ took the view that in *Grand Junction Canal* Lord Hatherley in fact ruled against the defendant's direct tapping of the stream by bringing his drain into immediate connection with it. His view in this respect was influenced by the opinion of Vaughan Williams LJ in *Jordenson v Sutton, Southcoates and Drypool Gas Co* where he said:

With regard to *Grand Junction Canal Co. v Shugar* it seems tolerably clear from the longer report of this case 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 indirectly 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 - his general approach has been rejected in Scotland, however, on practical grounds as outlined below.

5.2.2 Scotland

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. Ferguson, for example, points to the House of Lords decision in *Chasemore v Richards* as authority for the notion that water may be extracted from beneath another's land without any action lying. As this article has already pointed out, *Chasemore* should not be read as giving authority to this proposition although there is now ample other authority to suggest that this principle has been accepted into English law.⁽⁹⁷⁾

There appears to be a paucity of cases in this area. As Lyall merely notes, '[t]he position may be the same in Scotland'.⁽⁹⁸⁾ One important case in this area is *Milton v Glen-Moray Glenlivet Distillery*.⁽⁹⁹⁾ 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 on route to a stream or piece of land belonging to someone else.⁽¹⁰⁰⁾

In *Milton*, a lower heritor of a stream brought an action against a higher heritor who sunk a well 12 feet from the stream to supply water to his distillery, which had the effect of drying up the lower heritor's land. 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 '[i]f 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 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'.⁽¹⁰¹⁾ Counsel relied upon the English decision of *Grand Junction Canal Co v Shugar* which has been explained above.⁽¹⁰²⁾

Pointing to the impracticality of such a position, Lord Hatherley's view was given short shrift in *Milton* by Lord Kyllachy (whose judgement was affirmed by the Inner House. He stated:

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 numerable 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.⁽¹⁰³⁾

It should also be noted that in this particular case the drainage from the stream was minimal and had no practical effect on water levels. In the view of the Inner House, such extraction from a defined stream would have to be at least material before any action might lie.⁽¹⁰⁴⁾ This leaves open the question as to whether liability might follow from the significant tapping of a defined stream.

Would the case be different if the abstraction served to take water away from beneath a neighbouring land with the effect that support is withdrawn? We have already seen - according to the general principle set out under English common law in *Popplewell* - that no action would lie on the basis that there is no right of support in relation to underground water. If one examines *Bald v Alloa Colliery*,⁽¹⁰⁵⁾ it may appear at first blush that the position may be different in Scotland. In *Bald*, 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 water-filled coal wastes supported by water, which in turn supported the surface of the land. The proprietor subsequently granted the minerals to a third party, who began pumping out the subterranean water, which in turn caused subsidence entailing damage to the surface and a number of buildings that had existed at the time of the grant. In an action brought by the feu of the land, both the granter and the mineral tenants were found liable for the damage caused on the basis that the party who withdraws the support does so at his peril.

While this may appear to be inconsistent with the English case of *Popplewell*, it has been argued that *Bald* and *Popplewell* are in fact reconcilable on the basis that *Bald* is different as it involves adherence to the principle that 'a man cannot derogate from his own grant'. As has been noted,

[i]n *Popplewell*'s case CJ Cockburn said 'Although 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 "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.'⁽¹⁰⁶⁾

The exception here pointed at seems precisely to cover and explain the principle set out in *Bald*.⁽¹⁰⁷⁾

While this argument is attractive, it is not entirely persuasive. Clearly the fact that the granter had feued the land to the pursuer and then leased the minerals to the mineral tenant in the knowledge that working the minerals would cause subsidence and damage to the land and buildings thereon influenced the court in finding that party liable. The decision that the pumping away of the water was unlawful, however, appears firmly grounded on the general principle that '[t]he party who withdraws the natural support, or the artificial support which comes in place of the natural support, does so at his peril'.⁽¹⁰⁸⁾ By implication of the facts of the case such an obligation not to remove support extends to the support of underground water - contrary to the English position. The arguments presented in the case make no reference to rights of property in

underground water. It is possible, however, that if the court had been willing to hold that by virtue of the rule set out in the maxim *a coelo usque ad centrum*, such underground water was *pars soli* and hence the pursuer's property, then arguably a case could have proceeded on the basis of the misappropriation by the defenders of the pursuer's property.

5.3 The law of capture and hydrocarbons

As we have already noted, UK cases in this area are distinctly thin on the ground in this area. Nonetheless, in addition to English case-law, a smattering of Commonwealth cases and some American material can be referred to in an effort to establish some general principles.

5.3.1 USA guidance on hydrocarbons

The law of capture originated during the late 19th century USA oil boom. The seminal decision in this respect is the 1899 Supreme Court of Pennsylvania case of *Westmorland and Cambria Natural Gas Co v De Witt*.⁽¹⁰⁹⁾ In this case, the court, in affirming the existence of a law of capture, ruled that

[h]ydrocarbons, 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 to 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 . . .⁽¹¹⁰⁾

Following on from this decision, the subsequent case of *Barnard v Monongahela Nat Gas Co*⁽¹¹¹⁾ 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 available to concerned oil-men was 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. The decisions of these courts set out a rule of convenience to meet the energy needs of a growing nation. Without such a rule and any agreements between adjacent landowners, the oil simply could not have been extracted without incurring legal sanction.⁽¹¹²⁾ As McIlvaine PJ 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'.

In relation to ownership *in situ*, for example, it is recognised that given the fugacious nature of oil and gas, absolute ownership simply ceases if the oil and gas migrates.⁽¹¹³⁾ This caveat goes so far as to sanction the 'capture' of hydrocarbons from beneath one tract of land caused by the lawful operations of an adjacent landowner. As the Supreme Court of Texas viewed,

[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.⁽¹¹⁴⁾

Many states have found, however, 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, in that if someone has ownership in a thing, how can a legal system sanction its appropriation by another without the owner's consent?' It has been argued that

[t]his 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.⁽¹¹⁵⁾

To sum up the position as it relates to hydrocarbons in the USA, it appears that whether or not hydrocarbons are viewed as being owned *in situ*, subject to a proprietary right to reduce into possession, or *res nullius* is not a relevant factor and legitimate drilling activities can lawfully appropriate hydrocarbons that have been drawn from beneath another's land regardless of property rights *in situ*.⁽¹¹⁶⁾

5.3.2 Commonwealth guidance - natural gas

Two of the most important Commonwealth cases relating to the capture of natural gas are *U Po Naing v Burma Oil Company*⁽¹¹⁷⁾ and *Boyrs v Canadian Pacific Railway*⁽¹¹⁸⁾. As we saw previously, the court rulings were not consistent as to the nature of property rights in the gas reserves *in strata*. As we shall see, however, the question of what property rights existed in the gas had no bearing on whether or not a law of capture would operate.

In *U Po Naing*, the court simply viewed that the gas was *res nullius* and hence belonged to no one until reduced into possession and therefore the first party acquiring the gas took title to it. In *Boyrs*, the court denied a claim for injunction where the respondents had been granted a lease to drill for oil. Notwithstanding that the plaintiff's 'cap of gas' at the top of the oil would be lost on extraction, 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'.⁽¹¹⁹⁾ This judgement was arrived at despite the fact that it was accepted by the court that the natural gas could be owned *in situ*.

The most salient issue in *Boyrs* therefore is clearly not one of ownership but rather the balancing of rights. As their Lordships noted, '[t]he question is not whose property the gas is, but what means the respondents may use to recover their petroleum'.⁽¹²⁰⁾ The most important aspect of the judgement in terms of balancing the opposing rights of the applicants, however, seems to have been the fact that the respondents were the recipients of an express grant of the petroleum in respect of which it must be implied that there was a right to work

the same.⁽¹²¹⁾ As their Lordships remarked '[t]he 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'.⁽¹²²⁾

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-Argue-Roth-Stearns Oil & Gas Co Ltd v Farquarson*⁽¹²³⁾ was authority for the proposition that in working reserved petroleum, the respondents must take care to preserve the appellant's gas. Their Lordships held that the key point in *Farquarson* (which in fact related to the reservation of 'springs of oil') was 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'.⁽¹²⁴⁾ Later in the *Farquarson* judgement, the court affirmed the general rule which was subsequently followed in *Boys*:

[t]he 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.⁽¹²⁵⁾

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 subsidence, this point was not considered further by the court.⁽¹²⁶⁾

5.3.3 Asphalt (pitch)

The decision of the Privy Council in *Trinidad Asphalt v Ambard*⁽¹²⁷⁾ is particularly pertinent and at first glance seems to support a thesis denying operation of a US-fashioned law of capture. When the defendants dug away their land, the semi-solid pitch or asphalt present on the plaintiff's land that oozed over into the defendant's border when exposed to the elements, was subsequently appropriated by defendants. The defendant's excavation also damaged buildings on the plaintiff's land. This was caused by the subsidence that had resulted from the removal of the pitch. The Privy Council were prepared to hold that there had been an actionable wrong and awarded damages in respect of not only 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 (and hence owned *in situ*) 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 not surprise us unduly. What is more surprising is that damages for appropriation of the pitch were awarded. At no point in the judgement does the court rule on whether the defendant's actions amounted to theft.

In the rather opaque judgement, damages in respect of the pitch appear rather to have been awarded more on an equitable basis. The previous 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'.⁽¹²⁸⁾ 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]'.⁽¹²⁹⁾

5.3.4 *Running silt*

In *Jordenson v Sutton, Southcoates and Drypool Gas Co*,⁽¹³⁰⁾ 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 cause 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 as this was merely a by-product of the work undertaken on the defendant's land. The silt was itself of no value and hence no damages were sought in relation to the silt itself.

5.3.5 *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*.⁽¹³¹⁾ When it was alleged that the removal of brine from beneath an adjacent property caused the land to subside, the court was able to sidestep the issue of whether this amounted to an actionable wrong as on the facts the court was not satisfied it had 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 caused brine to be appropriated from beneath an adjacent land and this caused removal of support, there would be no actionable wrong as, akin to running waters, the right of support did not extend to underground brine.

A different view was taken in the subsequent case of *Lotus Ltd v British Soda Co*.⁽¹³²⁾ In this case, serious damage had been caused to buildings on a factory site belonging to the plaintiff due to subsidence of his 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 to dissolve more salt. The resultant brine was pumped away to be replaced by yet more water, which resulted in the subsidence. The defendants argued that in pumping the brine in this manner, no action 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 water contains some salt' and pointed, *inter alia dicta* in *Salt Union Ltd v Brunner, Mond & Co* as authority for this proposition.⁽¹³³⁾ 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).⁽¹³⁴⁾ It was argued that the fact that such a mineral was part of the soil gave rise to a right of support. The court agreed with this viewpoint and following *Jordenson v Sutton, Southcoates and Drypool Gas Co*⁽¹³⁵⁾ found that the defendants were liable in damages. Additionally, L Ltd were entitled to claim an injunction to prohibit further such pumping by the defendants.

6. Concluding remarks

6.1 Comparing ownership rights

In respect of the extent that property rights can be said to be held in migratory things on land and whether or not such rights are meaningful in the face of the intervening acts of others, it is trite to remark that a review of the authorities fails to reveal one all-encompassing approach or doctrine applicable to all migratory things across Scotland and England. It is clear that the law does at times recognise that a landowner has property rights in such migratory things, as part of the soil, even before they are reduced into possession: under England law, for example, asphalt, silt, arguably natural gas and perhaps subterranean water (although not in a defined channel) may be treated as *pars soli*. Under Scots law, where the case-law is more sparse, it seems likely that the doctrine *cujus est solum* will be adhered to in a stricter sense than in England and it follows therefore that hydrocarbons and other fugacious sub-soil substances would be seen as *pars soli* and at least arguably the same could be said to apply to underground water percolating in a random fashion, although the case-law is conflicting. Such a varied approach to ownership of migratory things clearly illustrates the somewhat limited utility of such a blanket doctrine as *cujus est solum* in relation to landownership.

6.2 A law of capture and rights of support

Whether or not a law of capture exists is again not an easy question to answer. Under English law, the extent to which a law of capture exists appears to be determined not by reference to property rights but rather by balancing the correlative rights of the parties concerned. Where a landowner carries out legitimate activities that have the effect that the thing migrates from an adjacent land, then in general it would seem that no action will lie, except where a right of support has been eroded.

It can be seen, however, that while under English common law a right of support seems to exist in respect of migratory subsoil substances such as silt and rock salt, unlike the position in Scotland there is no such right in relation to underground water. Why this should be so is unclear. Although property rights barely feature in the cases, arguably a right of support exists in the such things as silt and rock salt because these substances are part of the soil, whereas underground water which is *res nullius*. Furthermore, it seems from the reasoning employed in *Popplewell* that the unlimited right to extract underground water is simply taken to outweigh any correlative right of

support. Such a distinction 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.

Moreover, 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',⁽¹³⁶⁾ which is to be contrasted with a situation where the drainage of water causes damage to the property of another. Drawing away water which has the effect of drying another's land is arguably no more than a classic illustration of the maxim *sic utere tuo ut alienum non laedas*, and hence one which should raise the possibility of an action based on negligence or nuisance. Surely there is a case for arguing that while perhaps on policy grounds there should not be an absolute right of support of underground water, where a party draws away water in a reckless or negligent fashion, then this should allow the aggrieved party to raise an action based on negligence or nuisance. Such an approach has found favour in a number of US states.⁽¹³⁷⁾

6.3 Capture when there is no erosion of support

It is clear that where a migratory thing is removed from the land of another and no action can be brought under removal of support, whether or not the substance is owned *in situ* appears to be of little relevance - at least under English common law. So, for example, in the Commonwealth natural gas cases, in the final analysis whether the gas *in strata* was owned *in situ* or was *res nullius* had no effect on whether the gas could be captured by the adjacent landowner. The same can be said about the many hydrocarbon cases in the USA. This follows the general English common law approach to remedies and if no remedy can be brought on a ground such as support or trespass, then no action will lie. The one case which does not fit snugly into this idea is *Trinidad Asphalt*, where damages were also payable for the loss of pitch as well as in respect of the subsidence caused by the erosion of support. This case can perhaps be rationalised on the basis that the capture was not simply a by-product of the defendants working their land in the normal, lawful way but rather a deliberate and underhand attempt to appropriate the pitch from the adjacent land. The judgement, however, is opaque, not particularly satisfactory and displays the weakness of English law in this area.

In Scotland, the case law is sparse. The tentative conclusions that can be drawn are that following the doctrine of *occupatio*, where the thing is to be treated as *res nullius*, then no action will lie if the thing is captured by another party (unless that leads to the removal of support). It may therefore be suggested that underground water can be appropriated from beneath the land of another and no action will lie for the taking, although if it were held that the water was *pars soli* it is submitted that the position may be different.

The importance of *dominium* and strict adherence to the maxim *cujus est solum* may dictate that remedies will result if a thing which is owned *in situ* is captured by the activities of an adjacent landowner. So, for example, under Scots common law, unlike the position under its English counterpart, it may be speculated that remedies protecting property rights might arise where hydrocarbons and other subsoil substances (if they are deemed to be owned *in situ*) are captured from the land of another even where there is no removal of support and where the capture is merely a by-product of legitimate activities in working the land.

6.4 Concerns

It is clear that a law of capture in effect devalues ownership in that owners may not always be safeguarded from the actions of others. Merely arguing (as courts in early US oil and gas decisions did) that non-liability is based upon the fact that title is lost after drainage takes place misses the point. In this respect, we may echo the dissenting words of Sir John Taylor Coleridge in the case of *Chasemore v Richards*:⁽¹³⁸⁾ '[n]ow 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', a novel principle then perhaps, but one that now appears widely accepted in relation to migratory things at least under English law.

Aside from such concerns, the current state of law also throws up matters of practical concern. While there may have been sound policy reasons behind allowing the law to develop in such a fashion - for example allowing the digging of wells that drain water from adjoining lands to facilitate land development, and sanctioning the draining of oil from beneath another's land to facilitate exploitation of the resource - it may be that such policy choices need to be reappraised today. For example, the issue of increasing global water shortages has heightened the need for legal regimes across the globe to instigate and develop equitable and efficient water use regimes.⁽¹³⁹⁾ Many US States, for example, have already responded to such concerns and amended their water use doctrines away from traditional English common law approaches to 'reasonable use' principles to ensure sustainability and equitable distribution of underground percolating water.⁽¹⁴⁰⁾

The issue of hydrocarbons in the UK is complicated by the fact that all hydrocarbons on-shore vest in the Crown and those offshore are subject to the exclusive proprietary right of the Crown to exploit the minerals.⁽¹⁴¹⁾ These Crown rights are then licensed to others in 'blocks' under a statutory framework. Whether property rights are transferred to licensees and whether a law of capture operates under the respective licensing frameworks are questions that for reasons of brevity cannot be answered here. It has been argued, however, that despite compulsory joint development of oil fields which straddle two or more licence blocks, there may be some practical circumstances in which one licensee is able to develop the whole field even though this captures oil from the block of an adjacent licensee. If, as the bulk of the authorities (at least under English common law) suggest, a law of capture exists, then the adjacent licensee would have no remedy against the

party who has taken the oil - an issue that raises significant policy concerns.⁽¹⁴²⁾

As a final point, it is very questionable whether the current state of English common law in relation to migratory things is compatible with the European Convention on Human Rights (ECHR) in light of Article 1, Protocol 1, which sets out the right to the peaceful enjoyment of possessions. Clearly if a thing that is the subject of property *in situ* can be appropriated by another without the consent of the owner then this is contrary to the fundamental protection of property rights set out in the treaty. Due to space constraints, this issue cannot be tackled in detail here, but it may be sufficient to say that given the recent enactment of the Human Rights Act 1998, which has partially brought the ECHR into UK domestic law, this issue may be put to the test in the UK courts sooner rather than later.

Notes

1. Lecturer in Law, Heriot Watt University, Edinburgh. The author is indebted to Professor William Gordon and Mr Tom Guthrie, both of the Faculty of Law, University of Glasgow, and the anonymous referee for their comments on an earlier expression of these ideas. Any errors remain the responsibility of the author.
2. For reasons of brevity, the issue of wild animals is not discussed in detail in this article.
3. U. Mattei, *Basic Principles of Property Law: A Comparative Legal and Economic Introduction* (2000) at 77.
4. *Ibid.*
5. W. Buckland, *A Text-Book on Roman Law* 3rd ed (1966) at 188. Roman law distinguished *dominium* from a number of inferior rights of ownership; see Buckland, 189-191.
6. Blackstone, *2 Commentaries on the Law of England* 2 (1766).
7. Mattei, *supra* n 3 at 77; see also D. Lloyd, *The Idea of Law* (1991 reprint) at 323.
8. R. Smith, *Property Law* 2nd ed (1998) at 7.
9. Mattei, *supra* n 3 at 11.
10. See Erskine *Institutes* II,i,1.
11. D.L. Carey Miller, *Corporeal Moveables in Scots Law* (1991) at 6.

12. Smith, *supra* n 8 at 7.
13. *Ibid* at 46.
14. Coke Upon Littleton, 4.a.
15. *Glasgow City and District Railway Co v Macbrayne* (1883) 10 R 894 at 899, *per* Lord McLaren (affd (1883) 10 R 894 IH). The principle of *cujus est solum a coelo usque ad centrum* is a proposition frequently asserted in Scots Law - see *Stair Institutions* II, 3, 59; II, 7, 7; *Erskine Institutes* II, 6, I; ii, 9,9; *Bell Principles* ss 737, 940. For a history see F. Lyall, *The history of cujus est solum* 1978 JR 147.
16. *Bernstein v Skyviews and General Ltd* [1978] QB 479 at 487.
17. See Smith, *supra* n 7 at 6-7 and 46.
18. See *Batens Case* 9 Rep 53b 1610; *Pickering v Rudd* (1815) 4 Camp. 219; *Kelsen v Imperial Tobacco Co* [1957] 2 QB 334; *Fay v Prentice* (1845) 14 LJCP 298; *Gifford v Dent* [1926] WN 336; *Lemmon v Webb* [1894] 3 Ch 24; *Smith v Giddy* [1904] 2 KB 448; *Davey v Harrow Corporation* [1958] 1 QB 60.
19. [1978] QB 479 at 487.
20. It should be noted, though, that under international law, the UK does not exert a claim to outer space.
21. K. Reid, *The Law of Property in Scotland* (1996) at 163.
22. *Miln v Mudie* (1828) 6 S 967; *Houston v McLaren* (1893) 10 Sh Ct Rep 185; *McIntosh v Scott & Co* (1859) 21 D 363. See also *Ferguson v Ferguson* (1858) 15 Sh Ct Rep 186, where bullets ricocheting across land were held to amount to a nuisance although property rights in the airspace were not examined.
23. (1781) Mor. 10495; Fol. Dic. V. 4, 81.
24. (1924) 40 S. Ct. Rep. 57.
25. *Brown v Lee Constructions Ltd* 1977 SLT (Notes) 61, OH.
26. Although it may be argued that the relevance of danger stems from the fact that interdict is a discretionary remedy, the breach of which has quasi-criminal consequences. Thus the court may be inclined not to grant interdict unless there is a real mischief to resolve.
27. Reid, *supra* n 21 at 198. Accession occurs where two pieces of property become co-joined in such a way as one becomes part of the other.

28. *Halsbury's Laws of England* 3rd ed vol 39, p 506 (1962).
29. 2 Bl Comm. 14, 18; *Mason v Hill* (1833) 5 B & Ad 1 at 29; *Hocker v Porritt* (1875) LR Exch 59; *Ballard v Tomlinson* (1885) 28 Ch D 115, CA (pumping of percolating water).
30. 2 Bl Comm. 14; *Ferens v O'Brien* (1883) 11 QBD 21.
31. *Eckroyd v Coulthard* [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.
32. *John Young & Co v The Bankier Distillery Co* [1893] AC 691 at 698.
33. See *McCartney v Londonderry and Lough Swilly RY* [1904] AC 301; *Kensit v Great Eastern Ry* (1883) Ch D 566 at 574.
34. *Ormerod v Todmorton Joint Stock Mill Co Ltd* (1883) 11 QBD 155 at 168; *McCartney v Londonderry and Lough Swilly Ry*, *supra* n 33 at 307.
35. *Rugby Joint Water Board v Walters* [1916] Ch 397.
36. *McCartney v Londonderry and Lough Swilly Ry*, *supra* n 33 at 307.
37. (1886) 17 LR Ir 459 at 474, 475.
38. These riparian rights have since been amended significantly by statute and in general a riparian cannot take water except when in possession of a relevant licence. For England and Wales, see Water Act 1962, s 23; 1991, s27(1). For Scotland, see Water (Scotland) Act 1980 © 45, s 93(1) (4) & (5)).
39. Including *Chasemore v Richards* (1859) HLC 349; *Acton v Blundell* (1843) 12 M & W 324 and *Bradford v Pickles* [1895] AC 587 HL
40. *Bradford*, *supra* n 39.
41. We will return to this point when discussing the existence of a law of capture below.
42. And not, as the headnote would suggest, a right to pump water away from another's land; *Acton*, *supra* n 39, 353,
43. C. Campbell, *The Ownership of Corporeal Property as a Separate Tenement* (2000) 1 JR 39-59.
44. (1855) 29 Ch D 11.
45. *Supra* n 39 at 163.

46. N. Whitty, 'Water Law Regimes' in K. Reid and R. Zimmerman (eds), *A History of Private Law in Scotland* vol 1 (2000), 420.
47. Stair, *Institutions* II I 5. See also Erskine, *Institutes* II, I, 5; Bankton, *Institutes* I, 3,2.
48. Reid, *supra* n 21 at 217.
49. According to Whitty, *supra* n 46 at 451, '[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 *jus commune* beginning in the early seventeenth century at latest and at no time received the English doctrine of prior appropriation.'
50. The rights may be limited under the common law - eg by common interest, servitudes, nuisance or public rights of navigation and additionally now extensively limited by statute - eg the Flood Prevention (Scotland) Act 1961, Water (Scotland) Act 1980 and the Civic Government (Scotland) Act 1982.
51. *Rawston v Taylor* 18555, 11 Ex 369 *per* Parke B at 382; *Irvine v Leadhills Mining Co* 1858, 18 D. 833 at 841; *Race v Ward* 4 EL & B. 702.
52. Dig. Xxxix. 3,1,12; xxxix. 3,21; xxxix. 2,24,12.
53. Reid, *supra* n 21 at 339; cf *Bradford v Pickles*, *supra* n 39.
54. See *Stair Memorial Encyclopedia* vol 14 paras 2034-2035; Lord Kames, *Principles of Equity* 4th ed (1800) p 42; J. Rankine *The Law of Landownership in Scotland* 4th ed (1909) at 531.
55. Erskine, *Institutes*, 11 i, 5; Bankton, *Institutes* 1, iii, 2.
56. (1864) 2 M 1082 (affd (1866) 4 M (HL) 44).
57. *Ibid* at 523-526.
58. Rankine, *supra* n 54 at 513.
59. *The Encyclopaedia of Scots Law* (1926) at 549.
60. Citing *Acton v Blundell*, *supra* n 39.
61. *Encyclopaedia of Scots Law*, *supra* n 59 at 549. The same view is expressed in the *Stair Memorial Encyclopedia* vol 25, para 342.
62. 1946 SC 52.

63. *Ibid* at 63.

64. Although by statute all interests in coal are vested in the British Coal Corporation and all interests in petroleum are vested in the Crown by virtue of the Petroleum (Production) Act 1934.

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

66. Discussed above at section 4.1.3.

67. For an extensive list of cases see R.W. Hemmingway, *The Law of Oil and Gas* 2nd ed (1991) at 25.

68. See *Townsend v State*, 147 Ind 624, 47 NE 19; *Hammonds v Central Kentucky Natural Gas Co*, 255 Ky 685, 75 SW 2d 204; *Jones v Forest Oil Co*, 194 Pa 379, 44 A 1074.

69. Hemmingway, *supra* n 67 at 25.

70. 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 43.

71. See S.B. Presser and J.S. Zanzaldi, 'Law and American History: Cases and Materials' (1980).

72. See *Anshutz Land & Livestock Co v Union Pac R.R. Co*, 820 F 2d (19th Cir 1987); *Ellif v Texon Drilling Co*, 210 SW 2d 558 (Tex 1948).

73. 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 67 at 23-30 and P. Phillip *et al*, *Modern Law of Conservation: And You Thought the Law of Capture was Dead*, 41 Rocky Mt. Min. Inst. 17.

74. Including *Salt Union v Browner, Mond and Co* (1906) 2 KB 822; *Lotus v British Soda* [1972] Ch 123; *Trinidad Asphalt v Ambard* (1899) AC 394; *Jordenson v Sutton, Southcoates and Drypool Gas Co* (1899) 2 Ch 617.

75. (1929) 56 LR (IND APP) 140.

76. [1953] AC 217.

77. *Ibid* at 230.

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

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

80. Stair, II, I, 5; III 3,2,7; Erskine, II, I, 12; Bell, s 1291. A practical exception to this rule would appear to operate in respect of wild animals, where if they escape from one party they may be acquired by another.
81. See, eg, K. Gray and S.F. Gray, *Elements of Land Law* 3rd ed (2001) at p 25.
82. [1843] 12 M&W 324.
83. *Ibid.*
84. At 353.
85. As MacIntyre (*supra* n 69 at 43, fn 27), '[a] close examination of the facts will bear out this conclusion, although the pleadings are obscure and the headnote is hopeless'.
86. (1859) 7 HLC 349 11 ER 140.
87. [1895] AC 587 (HL)
88. J. Ferguson, *The Law of Water and Water Rights in Scotland* [1907] at 327.
89. *Ibid* at 329.
90. Although, see also *Elliot v North Eastern Ry Co* (1863) 10 HLC 333 at 359 and 365.
91. 1J & H. 145' 29 LJ (Ch) 808.
92. At 252.
93. (1979) 123 SJ.
94. See also *Stephens v Anglian Water Authority* (1987) 3 All ER 379.
95. 1871 LR Ch D 483.
96. 1907 Jan. 28, 29, 30 KBD.
97. See previous discussion.
98. *Stair Memorial Encyclopedia* vol 25, para 346.
99. (1898) 1 F 13, 6 SLT 5, 206.
100. Reid, *supra* n 21 at 343; *Milton v Glen-Moray Glenlivet Distillery Co Ltd* (1898) 1 F 135, 6 SLT 5, 206.

101. At 140.
102. 1871 6 Chancery Appeals at 483; discussed above.
103. *Milton v Glen-Moray etc*, *supra* n 99 at 140-141.
104. *Per* LJC Macdonald at 143, and Lord Moncrief at 144.
105. 1854 16 D 870.
106. At 251.
107. *Encyclopaedia of Scots Law*, *supra* n 59 at 308.
108. P 875, *per* Lord Mar.
109. 18 A 724 (1889).
110. *Ibid*.
111. 216 Pa 362, 65 A 901 (1906).
112. B. Clark, *The law of capture: A brick dropped in the pond of ownership theory?* [1999] 7 OGLTR 178.
113. Hemmingway, *supra* n 67 at 25.
114. *Ellif 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.
115. Hemmingway, *supra* n 67 at 28.
116. See T. Daintith and G. Willoughby, *UK Oil and Gas Law* (2001) 5-319.
117. (1929) 56 LR (IND APP) 140.
118. [1953] AC 217.
119. *Ibid*.
120. *Ibid*.
121. *Ibid* at 228. There was no express right to work the minerals.
122. *Ibid* at 229.
123. [1912] AC 864.
124. At 870.

125. At 871.
126. At 280.
127. [1899] AC 594.
128. At 601.
129. At 502.
130. [1899] 2 Ch 617.
131. [1906] 2 KB 822.
132. [1969] 1 Ch 123.
133. *Ibid* at 127.
134. *Ibid* at 125-126.
135. [1899] 2 Ch 217 CA.
136. M. Harwood, *Water, water, everywhere* (1987) *The Conveyancer* 175 at 176.
137. See D. Tarlock, *Law of Water Rights and Resources* (2002) S 4.19.
138. *Supra* n 38.
139. See, eg, D. Tarlock, *How well can international water allocation regimes adapt to global climate change?* Joint Issue: *Journal of Land Use & Environmental Law and Journal of Transnational Law & Policy*, Summer 2000.
140. See *Basset v Salsbury Manufacturing Co* 43 NH 569 (1862). States such as Alabama, Florida, Kentucky, Maryland, New York, North Carolina and Tennessee have all embraced a reasonable use rule.
141. By virtue of the Petroleum (Production) Act 1936 (onshore) and the Continental Shelf Act 1964 (offshore).
142. See Clark, *supra* n 112.