Rising Tides: The Acquisition of Ownership by *Alluvio* in the Context of Sea Level Rise

W Freedman*

Online ISSN
1727-3781

P·E·R

Pioneer in peer-reviewed, open access online law publications

Author

Warren Freedman

Affiliation

University of KwaZulu-Natal
South Africa

Email

Freedman@ukzn.ac.za

Date Submitted

12 July 2023

Date Revised

14 November 2023

Date Accepted

14 November 2023

Date Published

23 November 2023

Guest Editors

Prof M Carnelley
Mr P Bothma

Journal Editor

Prof C Rautenbach

How to cite this contribution

Freedman W "Rising Tides: The Acquisition of Ownership by *Alluvio* in the Context of Sea Level Rise" *PER / PELJ* 2023(26) - DOI http://dx.doi.org/10.17159/1727-3781/2023/v26i0a16463

DOI
http://dx.doi.org/10.17159/1727-3781/2023/v26i0a16463

Abstract

One of the most significant consequences of the global climate crisis is that the rate at which sea levels are rising has accelerated over the past 100 years and will continue to do so for the next century. The accelerated rise in the global mean sea level will inevitably affect the rights and interests of the owners and occupiers of coastal land, especially of coastal land that is bounded by the high-water mark (*agri non limitati*). This is because changes in the location of the high-water mark brought about by rising sea levels will result either in the acquisition of coastal property where the high-water mark moves seaward or in the loss of coastal property where the high-water mark moves landward. The law relating to the loss or acquisition of coastal property as a result of changes in the location of the high-water mark may be traced back to the common law principles governing the acquisition of ownership by alluvion (*alluvio*) and the loss of ownership by erosion. As part of an attempt to address the consequences of sea level rise, section 14(5) of the *National Environmental: Integrated Coastal Management Act* 24 of 2008 has amended some of these common law principles. The purpose of this article is to set out and critically analyse the provisions of section 14(5).

Keywords

Climate crises; sea level rise; coastal property; coastal accretion; coastal erosion; integrated coastal management.

.....

1 Introduction

In modern South African law there are several methods in terms of which a person may acquire ownership of a thing. These methods are usually divided into two broad categories, namely the original methods of acquiring ownership and the derivative methods of acquiring ownership. The acquisition of ownership is original if it is acquired in terms of a unilateral act and is not derived from the ownership of a predecessor-in-title. In other words, if there is no transfer of the right of ownership from a predecessor-in-title to a successor-in-title. Instead, an entirely new right of ownership *is* created by the operation of law in respect of the thing. At the same time, any previously existing rights of ownership are extinguished by operation of law.[1]

One of the original methods of acquiring ownership is accession (*accessio*).[2] Ownership is acquired by accession when one thing is incorporated by natural or artificial means into another thing in such a way that a new composite entity is created. In terms of this process, one thing loses its physical or economic independence and becomes a part of the other thing. The thing that loses its independence is classified as the accessory thing, while the thing that retains its independence is classified as the principal thing. An important consequence of this classification is that

* Warren Freedman. BCom LLB (Wits) LLM (University Natal). School of Law, University of KwaZulu-Natal, Pietermaritzburg Campus, South Africa. Email: Freedman@ukzn.ac.za. ORCID: http://orcid.org/0000-0002-5400-2883. I should like to express my sincere thanks to Professor Ernst Marais for agreeing to read an earlier version of this article and for his helpful and valuable comments. I should also like to thank the anonymous peer reviewers for their beneficial and useful feedback.

1 Muller *et al Silberberg and Schoeman's Law of Property* 83; Van der Merwe and Pope "Ownership" 488; Van der Merwe "Things" para 169. Although there is no doubt that previously existing rights of ownership in a thing are extinguished by operation of law following the original acquisition of that thing, it is not clear whether existing limited real rights in the same thing are also extinguished. Pienaar argues in this respect that a distinction must be drawn between movable and immovable things. While existing limited real rights are extinguished following the original acquisition of movable things, he argues further, they are not extinguished following the original acquisition of immovable things. Unlike the original acquisition of movable things, he goes on to argue, there are no legitimate reasons to extinguish existing limited real rights following the original acquisition of immovable things. It follows, therefore, that any such rule would constitute an arbitrary deprivation of property contrary to the provisions of s 25(1) of the *Constitution of the Republic of South Africa*, 1996 (see Pienaar 2015 *PELJ* 1480).

2 Apart from accession, the most important original methods of acquiring ownership are appropriation (*occupatio*), manufacture (*specificatio*), mixing and fusing (*commixtio et fusio*), the acquisition of fruits, acquisitive prescription, treasure trove, expropriation and forfeiture and confiscation (see Van der Merwe "Things" para 170).

the owner of the principal thing becomes the owner of the new composite entity and the owner of the accessory thing loses his or her ownership.[3]

The acquisition of ownership by accession has traditionally been divided into three categories, namely natural accession (*accessio naturalis*), industrial accession (*accessio industrialis*) and mixed accession (*accessio mixta*). In modern South African law, however, the acquisition of ownership by accession is more commonly divided into the accession of immovables to immovables, movables to movables and movables to immovables. Unlike the traditional classification, this modern classification is based not on the process by which one thing is incorporated into another thing (natural, industrial or mixed) but rather on the nature of the things themselves (movable or immovable).[4]

The accession of immovables to immovables itself is divided into different categories, one of which is alluvion or *alluvio*.[5] Alluvion is defined in South African law as:

> the gradual and imperceptible increase of land by soil being deposited by the action of a river or the sea. This increase can consist either in the addition of geological substances (sand, silt and mud) to the river bank or in an increase in the acreage of the land.[6]

---

3 Muller *et al Silberberg and Schoeman's Law of Property* 160; Van der Merwe and Pope "Ownership" 493; Van der Merwe "Things" para 175.

4 Muller *et al Silberberg and Schoeman's Law of Property* 160; Van der Merwe "Things" para 175; Van der Merwe *Sakereg* 2nd ed 231-232. The modern classification was introduced by Van der Merwe on the ground that it is more workable than the traditional classification. The problem with the traditional classification, Van der Merwe argued, is that it classifies certain methods of acquiring ownership, such as the acquisition of fruits and manufacture, as forms of accession when they clearly are not. Instead, they are their own separate original methods of acquiring ownership (see Van der Merwe "Things" para 175). Despite Van der Merwe's criticisms, Muller *et al* continue to apply the traditional classification. They argue in this respect that the system introduced by Van der Merwe suffers from its own shortcomings. In this respect, Muller *et al* point out that although alluvion and avulsion are classified by Van der Merwe as the accession of immovables to immovables, this is not an entirely accurate description of the process. While the particles of soil and pieces of land that give rise to the acquisition of ownership by alluvion or avulsion may have initially been immovable, they argue, once they have been separated from land by the natural actions of a river or the sea, they are no longer immovable but rather movable (see Muller *et al Silberberg and Schoeman's Law of Property* 160 fn 58). As Carey Miller has pointed out, the manner in which the different forms of accession are classified is not particularly important. This is because each form has its own particular rules (see Carey Miller *Acquisition and Protection of Ownership* 13).

5 Apart from alluvion, the accession of immovables to immovables is also divided into avulsion (*avulsio*), an island arising in a river (*insula nata in flumine*) and a river changing its course (*alveus derelictus*).

6 Van der Merwe "Things" para 330; Van der Merwe and Pope "Ownership" 494. In Muller *et al*, alluvion is defined as "a deposit of earth upon the bank of a (non-navigable) river so gradual that no one can perceive how much is added at any one

Alluvion thus applies to land bounded by water, including tidal water, and governs the location of the boundary between land and water, when the location of the boundary water changes. As Corkill points out, however, these principles might have remained as "obscure, arcane elements of property law of little interest to most lawyers and policymakers" were it not for the fact that the global climate crisis, and in particular higher sea levels, "will inevitably change the location of the interface between land and tidal waters, adversely affecting many coastal settlements."[7]

Although Corkill was referring to the situation in Australia, his point applies with equal force to South Africa. This is borne out by the fact that the change in the "location of the interface between land and tidal waters" that will inevitably be brought about by higher sea levels has already caught the attention of lawyers and policymakers in South Africa and has been translated into legislation that extends the application of the common law principles governing the acquisition of land by alluvion and its opposite (the loss of land by erosion) so that they encompass not only non-delimited coastal land (*agri non-limitati*) but also delimited coastal land (*agri limitati*).

These statutory provisions may be found in section 14(5) of the *National Environmental Management: Integrated Coastal Management Act* (the NEM: ICMA),[8] which reads as follows:

> If the highwater mark is landward of a straight line boundary of a coastal land unit when this Act took effect, or the highwater mark moves landward of a straight line boundary of a coastal land unit due to the erosion of the coast, sea level rise or other causes, the owner of that coastal land unit:
>
> (a) loses ownership of any portion of that coastal land unit that is situated below the highwater mark to the extent that such land unit becomes coastal public property; and
>
> (b) is not entitled to compensation from the State for that loss of ownership, unless the movement of the highwater mark was caused by an intentional or negligent act or omission by an organ of state and was a reasonably foreseeable consequence of that act or omission.

The purpose of this article, therefore, is to investigate the manner in which these provisions have extended the application of the common law principles governing the acquisition and loss of ownership of coastal land

---

moment of time; such deposit is inseparable from the native soil of the bank; and the owner of the latter acquires the former by right of accession" (Muller *et al Silberberg and Schoeman's Law of Property* 162). Apart from alluvion, the accession of immovables to immovables is also divided into avulsion (*avulsio*); an island arising in a river (*insula nata et flumina*); and a river changing its course.

7 Corkill 2012 https://www.unsw.edu.au/content/dam/pdfs/engineering/civil-environmental/water-research-laboratory/accarnsi/Principles-and-Problems-Of-Shoreline-Law.pdf 3.

8 *National Environmental Management: Integrated Coastal Management Act* 24 of 2008.

by alluvion and erosion respectively to include both *agri non limitati* and *agri limitati*. Before turning to consider these provisions in more detail, however, it may be helpful to discuss the nature and consequences of climate-change-induced rising sea levels, especially for South Africa, as well as the common law principles governing the acquisition and loss of ownership of land because of alluvion and erosion.

2 Sea level rise

Although the global mean sea level[9] has been rising since the end of the last great ice age 23 000 years ago, one of the most noticeable effects of the increase in global temperatures since the end of the 19th century is that the rate at which the global mean sea level is rising has accelerated and will continue to do so over the next century and possibly beyond that.[10]

In its *Climate Change 2023: Synthesis Report – A Summary for Policy Makers*, the United Nations Intergovernmental Panel on Climate Change (the IPCC)[11] states that between 1901 and 2018 the global mean sea level increased by 20cm and that the rate of increase has accelerated significantly over the same period of time. Between 2006 and 2017 the global mean sea level increased at a rate of 3.7mm per annum. This is nearly twice as fast as the rate of increase between 1971 and 2006 (1.9mm per annum) and nearly three times as fast as the rate of increase between 1901 and 1971 (1.3mm per annum). It is very likely, the IPCC goes on to state, that the main driver of these rapid increases is human activity, at least since 1971.[12]

Irrespective of any measures that may be adopted to reduce Green House Gas (GHG) emissions now or in the near term, the IPCC states further, the global mean sea level will continue to increase for centuries to come and sea levels will remain elevated for thousands of years due to the thermal expansion of the ocean and the melting of glaciers and ice sheets, both of

9 The global mean sea level is the average height of the entire ocean surface. It is caused largely by two factors related to global warming, namely melting glaciers and ice sheets and the expansion of sea water as its warms.

10 Scholes, Scholes and Lucas *Climate Change* 77.

11 The Intergovernmental Panel on Climate Change (IPCC) was established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) in 1988 and endorsed by the United Nations General Assembly in the same year. Its purpose is to review scientific literature produced globally about human-induced climate change in order to deepen our understanding of climate change, make recommendations about the impact and future risks of climate change and suggest options for adaptation and mitigation. It does not conduct its own original research (see King, Strydom and Retief *Fuggle and Rabie's Environmental Management* 738).

12 IPCC *Climate Change 2023* para A.2.1.

which have centuries-long time lags.[13] Under a very low GHG emissions scenario (SSP1-1.9), the IPCC asserts further, the global mean sea level will in all likelihood rise between 15 and 23cm by 2050 and between 28 and 55cm by 2100. Under a high GHG emissions scenario (SSP5-8.5), sea levels will rise between 20 and 29cm by 2050 and 63cm and 1 meter by 2100.[14]

As a result of the unavoidable increase in global mean sea levels, the IPCC warns that the risks of coastal flooding, coastal erosion and saltwater intrusion are very likely to significantly increase along all low-lying coasts up to and beyond 2100.[15] It also warns that "current 1-in-100 year extreme sea level events" that were historically rare will become more common and "occur at least annually in more than half of all tide gauge locations by 2100" under all of the SSP scenarios.[16]

It is important to note that while changes in the global mean sea level are primarily driven by thermal expansion of the ocean as it becomes warmer, the increased melting of land-based ice from glaciers and ice sheets (especially in Antarctica and Greenland) and changes in land water storage, changes in relative mean sea levels are driven by a wider range of local factors. These include ocean currents, variations in land height, vertical land motion and upstream flood control. An important consequence is that the rate at which the level of the sea is increasing is not the same across the

13 In its *State of the Global Climate 2022* report, the World Meteorological Society states that "ocean warming, ice loss from glaciers and ice sheets and changes in land water storage all contribute to changes in sea level." For the period 2005-2019 ocean warming (through thermal expansion) contributed 55% to global mean sea level rise and total ice loss from Antarctica, Greenland and glaciers contributed 36%. Variation in land water storage contributed less than 10% (see WMO 2023 https://public.wmo.int/en/our-mandate/climate/wmo-statement-state-of-global-climate 8).

14 IPCC *Climate Change 2023* para B.3.1. The degree to which the global temperature will continue to increase in future depends on the extent to which steps are taken to reduce GHG emissions and thus mitigate climate change. The IPCC has developed five different GHG emissions scenarios in order to explore the range of possibilities that exist. These scenarios are referred to as Shared Socio-economic Pathways or SSPs. The most optimistic scenario is referred to as SSP1-1.9. It assumes that very strong steps will be taken immediately to reduce GHG emissions and meet the target of the *Paris Agreement* of keeping global heating to 1.5C. In terms of this scenario, the global average temperature is predicted to rise between 1.0 and 1.8C by 2100. The least optimistic scenario is referred to as SSP5-8.5. It assumes that very weak steps will be taken to reduce GHG emissions. In terms of the scenario, the global temperature is predicted to rise between 3.3 and 5.7C by 2100 (see Scholes and Engelbrecht 2021 https://cer.org.za/wp-content/uploads/2021/09/Climate-impacts-in-South-Africa_Final_September_2021.FINAL_.pdf 3).

15 IPCC *Special Report on the Ocean* 324; IPCC *Climate Change 2023* para B.2.2.

16 IPCC *Climate Change 2023* para B.1.4.

entire globe. Instead, the rate at which the level of the sea is increasing at specific locations may be larger or smaller than the global average.[17]

As a recent study by Allison *et al.* illustrates, this is certainly the case insofar as South Africa is concerned.[18] Relying on data taken from tidal gauge records and satellite altimetry datasets, the study projects that under a low emissions scenario, sea levels around South Africa will increase between 50 and 80 cm and under a high emissions scenario between 50 cm and 1.4 m by 2100. These increases are larger than those projected for global mean sea level rise.[19]

These increases will undoubtedly have a dramatic effect on the South African coast for at least three reasons:[20]

- First, South Africa has a highly exposed linear coastline. In addition, the coastline is also characterised by low tidal ranges and high wave energy. This makes it a wave-dominated coast and it is therefore sensitive to increased sea storminess.

- Second, the eastern coast is characterised by sandy beaches with low coastal plains and little or no hard protection. This makes the east coast vulnerable to coastal flooding and coastal erosion caused by cyclonic weather and large waves.

- Third, many of South Africa's natural coastal buffers have been destroyed by inappropriate development such as land reclamation, the removal of coastal dunes, the removal of mangroves, the stabilising of sand and the development of estuaries.

A wide range of strategies may be adopted in order to ameliorate these negative consequences. Amongst these are hard engineering options, soft engineering options and socio-institutional options. Hard engineering options include sea walls; groynes, barrages; raising infrastructure, beach nourishment and replenishment, water pumps and beach drainage. Soft engineering options include dune cordons, coastal mangroves, estuary and wetland rehabilitation and kelp beds. Socio-institutional options include vulnerability mapping, risk communication, coastal set-back lines, early warning systems and managed retreats.[21] While these strategies may ameliorate some of the negative consequences associated with sea level

17 US Global Change Research Program 2017 https://science2017.globalchange.gov/335.
18 Allison, Palmer and Haigh 2022 *Environmental Research Communications* 1.
19 Allison, Palmer and Haigh 2022 *Environmental Research Communications* 10-11.
20 Scholes, Scholes and Lucas *Climate Change* 136.
21 Cartwright *Coastal Vulnerability* 7.

rise, it is very unlikely that any of them will be able to prevent a change in the location of littoral boundaries and, consequently, a change in the property rights of littoral owners.

Having briefly discussed the nature and consequences of climate-change-induced sea level rise, especially for South Africa, we can now turn to discussing the common law principles governing the acquisition and loss of the ownership of land as a result of alluvion and erosion from a legal-historical perspective beginning with Roman law.

3 Roman law

The concept of alluvion may be traced back to Roman law and, in particular, to the works of Gaius. In the second book of his *Institutes of Roman Law*, for example, Gaius describes the concept in the following terms:

> Alluvial accretions to our land become ours, again by natural law. That is held to be accretion by alluvion which a river adds to our land so gradually that it is impossible to estimate how much is being added at any particular moment; whence the common saying, that an addition is by alluvion if it is so gradual as to be invisible.[22]

And, in the second book of his *Common Matters* or *Golden Rules*, Gaius describes alluvion in similar terms, although more briefly:

> Furthermore, what the river adds to our land by alluvion becomes ours by the law of nations. Addition by alluvion is that which is gradually added so that we cannot, at any given time, discern what is added.[23]

---

22 Gaius *Institutes of Gaius* 2.70.

23 See Justinian *Digest of Justinian* 41.1.7.1. Apart from the process of acquiring ownership described by Gaius, two other processes were also referred to as alluvion by the Roman jurists, both of which resulted in a change in ownership. The first of these is discussed by Pomponius in his commentaries on Masurius Sabinus's treatise on *Civil Law*. In the thirty-fourth book of his commentaries Pomponius explains that "[a]lluvion restores the land which the river wholly removed. Hence, if land lying between a public road and the river had been flooded by the river, whether gradually or not, but reappeared with the recession of the river waters, it would belong to its original owner; for rivers serve as public functionaries, making public that which was private and private that which was public. Thus, just as this land was public while it formed the riverbed, so on becoming private, it should belong to its former owner" (see *D* 41.1.30.3). The second is discussed by Alfenus Varus in the fourth book of his *Digest,* where he states that "Attius had a property adjoining a public road, beyond the road lay a river and the holding of Lucius Titius. The river gradually flowed over and ate away the land lying between the road and the river and made away with the road and then gradually receded and, by alluvion, returned to its former bed. The opinion was that the river having destroyed the land and the public road, the land so destroyed became the property of the man who held the land beyond the river [that is, Lucius Titius]; but later, when the river slowly receded, it took the restored land away from the man who had acquired it and added it to that of the owner beyond the road [that is, Attius], since his land was nearest to the river; but what had been public became no one's property. And he said further that the road did not prevent the land again exposed, with the recession of the river, on the

As these definitions illustrate, rivers were the central cause of alluvion in Roman law. Insofar as rivers were concerned Roman law distinguished *inter alia* between rivers (*flumen*) and streams (*rivus*) and between public rivers and private rivers. A river was distinguished from a stream on the basis of its size or the opinion of those living in the neighbourhood and a public river was distinguished from a private river on the basis of whether it had a perennial flow or not.[24] A public river, therefore, was one that was perennial and was large enough to be considered a river and not a stream.

In the sixty-eighth book of his *Edicts*, for example, Ulpian says that "[a] river is to be distinguished from a stream by its size and by the opinion of the surrounding inhabitants"[25] and that "some rivers are public, some not".[26] A public river, he goes on to state, was defined by the Sabinian jurist Cassius "as a perennial one" and that "this opinion of Cassius, which Celsus also approves, is held to be acceptable."[27]

These distinctions were important because public rivers and their banks were classified as public things (*res publicae*)[28] and as such were not considered to be the private property of any individual person, but rather as "the property of the community itself"[29] or, as Ulpian put it, they were considered to be the property of the "Roman people".[30]

Although public rivers were considered to be the property of the whole community, in his commentary on the *Institutes of Justinian* Vinnius points out that the bed and the banks of a public river bounded by private land were regarded as public only in the sense that the public was entitled to use them as a necessary incident of using the river itself. The ownership of the bed and the banks was vested in the riparian owner and he or she therefore was entitled to claim the alluvion. The same principles also applied when a public river changed course and its bed dried up or when an island was formed in a public river.[31]

In other words, a riparian landowner's right to claim alluvion or ownership of a dry public river bed or ownership of an island that arose in a public river

---

other side of the road from becoming the property of Attius, since the road itself was part of his land" (*D* 41.1.38).

24 *D* 43.12.1.3. In Roman law, a river was considered to be perennial even if it dried up during certain summers, but was otherwise perennial (see D 43 12 1 2).

25 *D* 43.12.1.1. Also see *Butgereit v Transvaal Canoe Union* 1988 1 SA 759 (A) (hereafter *Butgereit*) 766G.

26 *D* 43.12.1.3.

27 *D* 43.12.1.3. In Roman law a river was considered to be perennial even if it dried up during certain summers but was otherwise perennial (see *D* 43.12.1.2). Also see *Butgereit* 766H-J.

28 *D* 43.12.3.

29 *D* 1.8.1.pr.

30 *D* 50.16.5. Also see *Butgereit* 767D-F.

31 Vinnius *In Quatuor Libros Institutionum* 2.1.23.

was based on the principle that while the community was entitled to use and enjoy a public river, it did not own the bed or the banks of that river. Instead, the bed and the banks of a public river were owned by the riparian owners. This principle was referred to by the Appellate Division (as it then was) in *Van Niekerk and Union Government (Minister of Lands) v Cater*,[32] where Solomon JA made the following points:

> It is true that as regards public rivers generally it is laid down in the *Institutes*, 2.1.2, and in the *Digest*, 43.12.1.7, that, if a river leaves its bed and forms another course, the new bed although it may have been private land before becomes public; the reason given being that 'it is impossible that the channel of a public stream should not be public'. But it seems clear that in these passages the word 'public' is used, not in the sense of the property of the State, but in the sense that its use is public or common to all as is that of the flowing water itself. That is the meaning which is given to these passages by Vinnius on *Institutes* (2.1.4.23), and his reasoning appears conclusive. That the bed of a public river was not necessarily regarded as the property of the State seems clear from the rule of Roman law that 'if a river forsakes its natural channel, and flows in another direction, the old bed of the river is the property of those who own the adjoining banks'. *Institutes*, 2.1.23. So also, if an island is formed in the middle of the bed of a river each of the riparian proprietors becomes the owner of half the island, but if it should be nearer to one bank than to the other, it is the property of that one of the riparian proprietors on whose side it happens to be, *Institutes*, 2.1.22. These doctrines of the Roman law which are adopted by the Roman-Dutch authorities are only intelligible on the principle that the bed of a river is presumed to be the property of those who own the adjoining land, which is taken to extend on each side to the middle of the stream.[33]

Apart from defining what is meant by alluvion, two other important points emerge from Roman law. The first of these is that the right to claim alluvion does not apply to lakes or pools,[34] although no mention is made of the sea,[35] and the second is that the right to claim alluvion does not apply to *agri limitati*.[36] *Agri limitati* are plots of land that are enclosed on all sides by surveyed lines and other artificial boundaries, even though they may border on a natural feature such as a public river or the seashore. *Agri limitati* are usually distinguished from *agri non limitati* which are plots of land that have one or more natural boundaries such as a public river or the seashore.[37]

---

32 *Van Niekerk and Union Government (Minister of Lands) v Carter* 1917 AD 359 (hereafter *Van Niekerk*).

33 *Van Niekerk* 387-388.

34 *D* 41.1.12 *pr*.

35 The fact that no Roman law text discusses the right to claim alluvion as a result of the actions of the sea, Lewis argues, may be as a result of the fact that there is no significant tidal activity in the central Mediterranean sea (see Lewis "*Alluvio*" 90).

36 *D* 41.1.16.

37 As Van der Merwe has pointed out, the right of an owner of an *ager non limitatus* to claim alluvion is based on the English law maxim accepted in *Van Niekerk* 375 that land bounded by a public non-navigable river is presumed to extend to the imaginary line in the middle of the river (a*d medium filum fluminis*). This imaginary line shifts when alluvion takes place and the river becomes narrower (see Van der Merwe

The difference between *agri limitati* and an *agri non limitati* was highlighted by the Appellate Division in *Van Niekerk,* where Innes CJ held as follows:

> *Agri limitati* were lands granted by the State to private individuals and defined by artificial boundaries, such as pillars and posts, walls, mounds, etc. They were carefully surveyed and demarcated; but their distinctive feature was that their limits were not natural but artificial. A field bounded by a river, and following all the sinuosities of its course was not an *ager limitatus*; a field bounded by lines between beacons, however near those lines approximated to the bank, was an *ager limitatus* .... And the owner of such a property was confined within the strict limits demarcated upon the ground ...[38]

A slightly more concise distinction was drawn by the Natal Provincial Division of the Supreme Court (as it then was) in *Durban City Council v Minister of Agriculture,*[39] where Didcott J held as follows:

> An *ager limitatus* is a plot of land enclosed on all sides by artificial boundaries and demarcated as such. An *ager non limitatus* is a plot bounded on one side or more by some natural feature, a river or the seashore for instance. Irrespective of the sort of boundaries it has, a plot defined by measurement is also an *ager limitatus* or, if not one in the pure sense then tantamount at least to such and so to be regarded for all practical purposes.[40]

Finally, it is also important to note that the Roman jurists distinguished between the acquisition of ownership by means of alluvion and the acquisition of ownership by means of avulsion (*avulsio*). Unlike alluvion, avulsion is the sudden and noticeable addition of soil to land as a result of the violent actions of a public and non-navigable river. This method of acquiring ownership is described by Gaius, once again in the second book of his *Common Matters* or *Golden Rules*, as follows:

> But if the force of the river should detach part of your land and bring it down to mine, it obviously remains yours. Of course, if it adheres to my land, over a period of time, and trees on it thrust their roots into my land, it is deemed from that time to have become part of my land.[41]

"Things" para 177). This common law presumption has been codified in s 33(1) of the *Land Survey Act* 8 of 1997. This section states that "[i]f a river, other than a tidal river … constitutes a boundary of any piece of land, that piece of land shall be deemed to extend to the middle of the river." This deeming provision is subject to a number of exceptions.

38 *Van Niekerk* 374-375.

39 *Durban City Council v Minister of Agriculture* 1982 2 SA 361 (D).

40 *Durban City Council v Minister of Agriculture* 1982 2 SA 361 (D) 369B-D. In *Body Corporate of Dolphin Cove v KwaDukuza Municipality* (8513/10) [2012] ZAKZDHC 13 (20 February 2012) para 23, the High Court referred to the judgments in *Van Niekerk* and *Durban City Council* with approval and then went on to distinguish between *agri limitati* and *agri non limitati* as follows: "If the title deeds and drawing alone can fix the extent and position of the land, then it is *ager limitatus*. Determining the extent is not enough if the position of the land cannot be located. If the natural boundary determines the position or extent of the land, then it is *ager non limitatus*. Consequently, the extent of the land could also increase or decrease by *alluvion*, *avulsion* or by virtue of having a fluid curvilinear boundary."

41 *D* 41.1.7.2.

As this passage clearly indicates, the second landowner acquires ownership of the detached portion only after it has become firmly attached to his or her land, for example when plants take root. There are consequently three stages to avulsion: first, the sudden natural disannexation of a piece of land; second, the natural deposit of that piece of land on another; and, third, the process by which that piece of land is annexed to the piece on which it was deposited.

The key differences between alluvion and avulsion, therefore, are as follows:

- First, in the case of alluvion, the increase in land is gradual and imperceptible while in the case of avulsion, the increase is sudden and perceptible.
- Second, in the case of alluvion, the acquisition of ownership takes place as soon as the soil has been deposited on the land while in the case of avulsion, it takes place only after the soil has been annexed to the land.

4 Roman-Dutch law

Unlike the situation in Roman law, the acquisition of ownership by alluvion gave rise to difficult issues in Roman-Dutch law. Perhaps the most important of these was whether private landowners retained the right to claim alluvion in terms of Roman-Dutch law, at least in so far as public rivers were concerned. Some Roman-Dutch jurists argued that private landowners did retain this right, while others argued that they did not.

Those jurists who argued that private landowners did not retain the right to claim alluvion in terms of Roman-Dutch law based their argument on the fact that in Roman-Dutch law public rivers did not belong to the people, but rather to the Sovereign as one of his minor regalian rights (the *regalia minora*).[42] Given that public rivers belonged to the Sovereign, they argued

[42] The regalian rights were those powers, prerogatives and rights that vested in the prince in his capacity as the Sovereign. They were divided into two categories, namely the major regalian rights (*regalia maiora*) and the minor regalian rights (*regalia minora*). The major regalian rights included the political and administrative powers of the Sovereign and were regarded as essential to his authority. Given their essential nature, they were classified as public law powers and could not be alienated. The minor regalian rights included the economic and property rights of the Sovereign and were not considered as essential to his authority. Instead, they were considered to be accidental and were treated as private rights that could be alienated (see Sonnekus 1985 *TSAR* 128-129).

further, it was the Sovereign, and not the private landowner, who was entitled to claim alluvion.[43]

This argument was made by Groenewegen, among others, who put it as follows:

> But as nowadays public rivers are ascribed to the ownership of the Sovereign and constitute Crown [regalian] property … it follows of necessity that by present day custom alluvion and other accretions forming in rivers belong to the Sovereign or to those who enjoy a right in them granted by the Sovereign. On this matter there exists a Placaat of Phillip II, Sovereign of Spain and of us, of 22 May 1559, in which it is provided that no one may claim fishing rights, alluvion or other accretions in rivers, unless he has obtained the consent of his Majesty after having established lawful title thereto in the Exchequer Department or having otherwise proved his right thereto.[44]

This approach was rejected by Voet, who argued that while it was true that King Phillip II appeared to have claimed all rights in alluvion for himself, this claim was confined to *agri limitati* only. Insofar as *agri non limitati* were concerned, he argued further, "there is no doubt that the benefits of alluvion accrue to the owners of such lands, so that they can also advance this right of alluvion for their own benefit in their own right and at their own expense by erecting dams in the river, by planting, by fortifying the bank and by other methods, provided that they do not obstruct navigation or any right which has accrued to others."[45]

Like Voet, De Groot also distinguished between *agri limitati* and *agri non limitati*. Insofar as *agri limitati* were concerned, he accepted that the right to alluvion vested in the Sovereign. He stated in this respect that "[o]ne thing is certain, that in lands which are granted out by the Count by certain metes and bounds the alluvion outside the said limits belongs to the Count."[46] When it came to *agri non limitati*, however, De Groot did not take a firm stand. Instead he argued that the legal position was uncertain, largely because it was based on local customs and decisions that differed from place to place. The lack of legal certainty, he pointed out, was clearly illustrated in Holland and West Friesland where the Count argued that alluvion belonged to him "as a consequence of the water", but that "[others

43 As Sonnekus has pointed out, these conflicting approaches to the right to claim alluvion were part of a much larger conflict between Dutch customary law principles and Roman law principles that arose following the reception of Roman law in the Netherlands in the fifteenth and sixteenth centuries (see Sonnekus 1985 *TSAR* 129).

44 Groenewegen van der Made *Tractus de Legibus Abrogatis, Ad Inst* 2.1.23.

45 Voet *Commentarius ad Pandectas* 41.1.15. Also see Van Leeuwen *Censura Forensis* 1.2.4.12.

46 De Groot *Inleidinge tot de Hollandsche Rechtsgeleerdheid* 2.9.25. Also see Van der Keessel *Praelectiones* 2.9.25.

denied] this, and what must be taken to be law in regard to this matter is in view of the variety of customs and decisions very uncertain."[47]

5 South African common law

Despite the fact that it is not entirely clear whether private landowners in the Netherlands enjoyed the right to claim alluvion in terms of Roman-Dutch law, the South African courts have held that there is no doubt that private landowners do enjoy such a right in terms of South African common law and that such a right applies not only to the natural action of public rivers but also to the natural action of the sea.

Perhaps the most significant judgment in this respect is *Van Niekerk*.[48] In this case the Appellate Division accepted that the owner of land bounded by a public river (the riparian owner) is entitled to claim the right to alluvion. Although this case applies to rivers and not the sea, it is discussed in some detail for the sake of presenting a complete picture of the common law position. The manner in which the courts have approached the application of the right to the natural action of the sea is considered thereafter.

In arriving at its conclusion the Appellate Division in *Van Niekerk* held that the conflicting approaches adopted by the Roman-Dutch authors to alluvion related only to those public rivers that were classified as navigable and not to those that were classified as non-navigable.[49] This is because, the Appellate Division held further, a careful examination of the Book of Feuds (the *Libri Feudorum*)[50] shows that only navigable rivers were made a part of the *regalia*. The Sovereign, therefore, was entitled to claim the right to

47 De Groot *Inleidinge tot de Hollandsche Rechtsgeleerdheid* 2.9.18.

48 Apart from *Van Niekerk*, the right to claim alluvion as a result of the actions of a public river has also been considered in *Lange v Minister of Lands* 1957 1 SA 297 (A); *Durban City Council v Minister of Agriculture* 1982 2 SA 361 (D); *Elandsrand Gold Mining Company Ltd v JF Uys* (TPD) (unreported) case number 9915/93 of 1 February 1994.

49 *Van Niekerk* 373 and 386.

50 Lib 2, tit 56. After he was crowned as emperor of the Holy Roman Empire in 1155, Frederick I Barbarossa (1122-1190) wanted to restore the power and prestige of the imperial throne *inter alia* by reclaiming those regalian rights that had been granted to or usurped by the powerful and semi-autonomous city-states in Lombardy. In order to achieve this goal Frederick convened a Diet at Roncaglia in 1158. At this Diet Frederick appointed the four great doctors of Roman law at the University of Bologna (Martinus, Bulgaris, Jacobus and Hugo) to identify the regalian rights that were due to him. After completing their work the four doctors presented Frederick with a list of regalian rights, which he then published in the form of a *constitutio* known as the *Constitutio de Regalibus*. This *constitutio* was subsequently incorporated into the *Libri Feudorum* which itself was a compilation of Italian and especially Lombard feudal laws. Despite its Italian focus, the *Libri Feudorum* came to be accepted as an authoritative statement of feudal law throughout the Holy Roman Empire, including the Netherlands, and was included in older editions of the *Corpus Juris Civilis* (see Sonnekus 1985 *TSAR* 126-128; Sonnekus 2001 *TSAR* 94-95).

alluvion only in respect of navigable rivers and not in respect of non-navigable rivers.[51]

> Now in this case we are concerned not with a navigable river but with one which is not navigable, and whatever the law may be as regards the former, there is no justification for holding that the latter falls under the *regalia*, and that their beds, therefore cannot be, alienated.[52]

Insofar as non-navigable public rivers were concerned, the Appellate Division went on to hold, it seems, that the rules that applied in Roman law also applied in Roman-Dutch law, and in Roman law riparian owners were entitled to claim the right to alluvion because the ownership of the beds and banks of public rivers vested in them.[53] This distinction was significant, the Appellate Division concluded, because the Vaal River is not navigable. This meant that the beds and banks of the Vaal belonged to the riparian owners and, consequently, that like the owners of non-navigable public rivers in the Netherlands, they were entitled to claim the right to alluvion.[54]

Apart from the Vaal River, the Appellate Division has held that neither the Orange River[55] nor the Crocodile River is navigable.[56] It appears, therefore, that there are no navigable rivers in South Africa and, consequently, it is very unlikely that the South African state will be able to claim a right to alluvion insofar as *agri non limitati* are concerned.[57]

Unfortunately it is not clear whether the distinction drawn by the Appellate Division between navigable and non-navigable public rivers in *Van Niekerk*'s case holds up to scrutiny. In a number of subsequent judgments the Appellate Division has held that not only navigable public rivers but also non-navigable public rivers were considered to be a part of the *regalia* and thus the property of the Sovereign.

For example, in *Butgereit v Transvaal Canoe Union* Rabie ACJ held that while Roman-Dutch jurists such as Grotius and Voet dealt only with the legal status of navigable public rivers in their respective works, it appears that "over the course of time all public rivers, whether navigable or not, became part of the *regalia.*"[58]

---

51 *Van Niekerk* 373, 386-387.
52 *Van Niekerk* 387.
53 *Van Niekerk* 387-388.
54 *Van Niekerk* 373.
55 *Lange v Minister of Lands* 1957 1 SA 297 (A).
56 *Butgereit.*
57 Van der Merwe *Sakereg* 152. In *Butgereit* 765J-766A, the appellants suggested that the Buffalo River in the Eastern Cape may be navigable, but it was not necessary for the Appellate Division to determine whether this suggestion was correct or not.
58 *Butgereit* 768A-D. Also see *Van Niekerk* 373, where Innes CJ pointed out that in Holland most of the rivers were navigable and that, taken together with the influence of Germanic feudal ideas, this fact "may account for the tendency shown in the

The same point was made by Kotze JA in *Surveyor-General (Cape) v Estate De Villiers*.[59] After stating that navigable rivers were made part of the *regalia*, the learned judge went on to say that the list of *regalia* mentioned in the *Libri Feudorum* was not regarded as a complete one and that in time "all things, the use of which was common and public by the Roman law … came to be embraced in the number."[60]

Given that both navigable and non-navigable public rivers were considered to be a part of the *regalia*, it follows that the right to claim alluvion must have vested in the Sovereign, not only in respect of navigable rivers but also in respect of non-navigable rivers. The fact that the Vaal River was not navigable, therefore, was irrelevant. In terms of the Appellate Division's own reasoning, the ownership of the bed and the banks of the river must have vested in the State. The riparian owner, therefore, was not entitled to claim the right to alluvion.

Although the reasoning of the Appellate Division in *Van Niekerk* may be criticised, this does not mean that its finding, namely that private landowners are entitled to claim the right to alluvion in terms of South African common law, is incorrect. As Sonnekus and Neels have argued, when it comes to determining whether the owner of an *ager non limitatus* adjacent to a public river is entitled to claim alluvion, the distinction drawn between navigable and non-navigable public rivers is irrelevant from a South African perspective. This is because the Sovereign's right to claim alluvion in Roman-Dutch law (initially from navigable and later from non-navigable rivers) was derived from his feudal regalian rights and these feudal rights were not received into South African law.[61]

---

authorities to extend the rights of the Count of Princeps, so as to include all public rivers [in the *regalia*]."

59 *Surveyor General (Cape) v Estate De Villiers* 1923 AD 588.

60 *Surveyor General (Cape) v Estate De Villiers* 1923 AD 588 621.

61 Sonnekus and Neels *Sakereg Vonnisbundel* 334 Aantekening 1. Apart from Sonnekus and Neels, Scholtens has identified another ground on which a private landowner's right to claim alluvion may be based. In a short case note published in the *South African Law Journal* he argued that the right to claim alluvion in Roman-Dutch law did not depend on the ownership of the adjacent riverbed or seashore. Instead it was based simply on the fact that the riparian or littoral land in question was bounded by a public river or the seashore. In arriving at this conclusion Scholtens argued first that in Roman-Dutch law the ownership of the beds of navigable rivers and the seashore vested in the Sovereign, irrespective of whether the adjacent riparian or littoral land was an *ager limitatus* or an *ager non limitatus*. Despite the fact that the ownership of the beds of navigable rivers and the seashore vested in the Sovereign, he argued second that the owner of the adjacent riparian or littoral *ager non limitatus* was still entitled to claim the right to alluvion. Given this fact, Scholtens argued, third, it followed that the right to claim alluvion was based not on the ownership of the riverbed or the seashore but rather on the fact that the land in question was bounded by a public river or the seashore. This principle, Scholtens argued further, also explains why the owner of an *ager non limitatus* bounded by a

Apart from public rivers, the South African courts have held that the right to claim alluvion also applies to the natural action of the sea. The most significant judgment in this respect is *Colonial Government v Town Council of Cape Town*.[62] In this case, the Town Council of Cape Town reclaimed land from the sea along the shore of Table Bay without obtaining the consent of the Colonial Government to do so. After the Town Council began constructing buildings on the reclaimed land, the Colonial Government applied for an order prohibiting it from doing so. In response, the Town Council argued *inter alia* that as the owner of the adjoining land above the high-water mark it had acquired ownership of the reclaimed land by accession in the form of alluvion.

De Villiers CJ rejected this argument on two grounds. First, there was no proof that the Town Council was the owner of the adjoining land[63] and, second, the addition of the reclaimed land was not gradual or imperceptible and thus did not satisfy the requirements of alluvion.[64] In his concurring judgment Maasdorp J went a step further and held that almost none of the requirements of alluvion had been satisfied. In particular, the addition of the reclaimed land had not been produced by the natural actions of the sea. Instead it had been artificially constructed by the Town Council.[65]

Two important points emerge from this judgment. First, the Court held by implication that the doctrine applies not only to land bounded by a non-navigable public river but also to land bounded by the sea. Although the Court did not refer to any authority in support of this finding, the same approach appears to have been followed in Roman-Dutch law. De Groot, for example, describes alluvion as a process that takes place "when the river or the *sea* [adds] something imperceptibly to the land, and what was so added [belongs] to the owners of the land where the alluvion occurred."[66] Like De Groot, Huber also refers explicitly to the sea in his description of alluvion. Alluvion, he states, occurs "when a *sea* or river gradually causes anything to grow on to any person's land, which addition at once becomes the private property of the lord of the adjoining land."[67]

Second, the Court held that alluvion could not be advanced by artificial means but only by the natural action of the sea. Once again the Court did not refer to any authority in support of this finding, which is unfortunate. This

navigable river was entitled to claim the right to alluvion but not the ownership of an island that arose in such a river or the bed of such a river where the river had dried up (see Scholtens 1957 *SALJ* 274-275).

62 *Colonial Government v Town Council of Cape Town* (1902) 19 SC 87.

63 *Colonial Government v Town Council of Cape Town* (1902) 19 SC 87 97.

64 *Colonial Government v Town Council of Cape Town* (1902) 19 SC 87 98.

65 *Colonial Government v Town Council of Cape Town* (1902) 19 SC 87 100.

66 De Groot *Inleidinge tot de Hollandsche Rechtsgeleerdheid* 2.9.13 (my emphasis).

67 Huber *Heedendaegse Rechtsgeleertheyt* 2.5.3 (my emphasis). Also see 2.5.9.

is because in Roman-Dutch law alluvion could be advanced by artificial means, provided navigation and the rights of neighbours were not impeded. De Groot, for example, states that "[p]ersons who have the right of alluvion may promote the said alluvion by laying dams, driving in stakes and other works, so far as the common fair-way, any person's fishery, or the lands opposite are not injured thereby."[68]

Apart from being natural, the increase in land must also be gradual. According to Voet this means that soil must be added so gradually that it is "impossible to perceive how much is added at any particular moment in time."[69] In a similar vein Van Leeuwen also states that the increase of land must be so gradual "that it cannot be calculated how much is added in each moment of time."[70]

Although this requirement has not been addressed by the South African courts, it was considered by the Privy Council on several occasions. In *Attorney-General of Southern Nigeria v John Holt and Co Ltd,*[71] for example, the Privy Council held that the words "slow and gradual" must be understood as referring only to the manner of the accretion and not to its result. The increase of land must therefore be "imperceptible in its progress, not imperceptible after a long lapse of time."[72] In *Secretary of State for India v Vizianagaram (Rajah)*,[73] in turn, the Privy Council recognised that the test of gradualness is not based on a fixed standard but is a relative one which must be applied to actual conditions. This meant that "the actual rate of progress necessary to satisfy the rule when used in connection with English rivers is not necessarily the same when applied to rivers in India."[74] Given that avulsive events must be excluded from alluvion, the English courts have also recognised that a "logical, and practical gap" or "grey area exists between what is imperceptible and what is considered avulsion" and so the issue of what may be described as imperceptible or otherwise is always a question of fact.[75]

In the light of these judgments South African scholars have argued that a landowner who wishes to claim a right to alluvion must fulfil the requirements set out below:

---

68 De Groot *Inleidinge tot de Hollandsche Rechtsgeleerdheid* 2.9.23.
69 Voet *Commentarius ad Pandectas* 41.1.15.
70 Van Leeuwen *Censura Forensis* 1.2.4.5.
71 *Attorney General of Southern Nigeria v John Holt and Co (Liverpool) Ltd* [1915] AC 599 (PC).
72 *Attorney General of Southern Nigeria v John Holt and Co (Liverpool) Ltd* [1915] AC 599 (PC) 615.
73 *Secretary of State for India v Vizianagaram (Rajah)* (1921) LR 49 Ind App 67.
74 *Secretary of State for India v Vizianagaram (Rajah)* (1921) LR 49 Ind App 67 69.
75 *Southern Centre of Theosophy Inc v South Australia* [1981] 1 All ER 283 (PC) 291.

(a) the increase of land must have occurred because of the "natural and gradual and imperceptible deposit of soil;"

(b) the soil must have been deposited as a result of the action of a non-navigable public river or the action of the sea; and

(c) the land itself must be an *ager non limitatus* and bordered by a public river or the sea. In those cases in which the land is an *ager limitatus* rather than an *ager non limitatus*, any alluvion accrues to the state.[76]

6 *National Environmental Management: Integrated Coastal Management Act*[77]

6.1 Introduction

Having set out the common law rules governing the acquisition of ownership by means of alluvion, we may now turn to consider the changes that have been brought about by the NEM: ICMA. As its preamble states, the goal of this Act is *inter alia* to give effect to the environmental rights guaranteed in section 24 of the Constitution and in particular the right guaranteed in section 24(b) "to have the [coastal] environment conserved and protected for the benefit of present and future generations through reasonable legislative and other measures."

This broad goal is translated into more specific objects in section 2 of the NEM: ICMA. One of these is to "preserve, protect, extend and enhance the status of coastal public property as being held in trust by the State on behalf of all South Africans, including future generations."[78] In order to achieve this object the Act introduces a new thing or *res* known as "coastal public property" and vests ownership of this new thing in the citizens of South

---

76 See, for example, Van der Merwe "Things" para 177; Du Plessis *Annotated Translation* 112-114.

77 *National Environmental Management: Integrated Coastal Management Act* 24 of 2008 (NEM: ICMA).

78 Section 2 of NEM: ICMA reads as follows: "The objects of this Act are:
(a) to determine the coastal zone of the Republic;
(b) to provide, within the framework of the National Environmental Management Act, for the co-ordinated and integrated management of the coastal zone by all spheres of government in accordance with the principles of co-operative governance;
(c) to preserve, protect, extend and enhance the status of coastal public property as being held in trust by the State on behalf of all South Africans, including future generations;
(d) to secure equitable access to the opportunities and benefits of coastal public property; and
(e) to give effect to the Republic's obligations in terms of international law regarding coastal management and the marine environment."

Africa.[79] In addition, the Act provides that coastal public property will be held in trust by the State.[80]

Coastal public property encompasses the area where the land meets the sea and is made up of several different components. These components may be divided into three categories, namely those that relate to the landward side of coastal public property; those that relate to the seaward side of coastal public property; and those that relate to both the landward and seaward sides of coastal public property.

Insofar as the landward side is concerned, coastal public property is made up of the following components:

(a) the seashore, including the seashore of a natural or reclaimed island as well as the seashore of reclaimed land;[81] and

(b) any admiralty reserve owned by the State,[82] as well as any land that is owned or controlled by the State and is declared to be coastal public property.[83]

Insofar as the seaward side is concerned, coastal public property is made up of the following components:

(a) coastal waters,[84] including land submerged or flooded by coastal waters as well as the substrata beneath such land;[85] and

(b) any natural island within coastal waters.[86]

79 Section 11 of NEM: ICMA.

80 Section 12 of NEM: ICMA.

81 Section 7(1)(d) of NEM: ICMA. Insofar as the seashore is concerned, s 7(2)(b) provides that coastal public property does not include any portion of the seashore below the high-water mark, which was lawfully alienated before the *Seashore Act* 21 of 1935 came into operation or that was lawfully alienated in terms of the *Seashore Act*.

82 Section 7(1)(e) of NEM: ICMA. Admiralty reserves are defined in s 1 as "any strip of land adjoining the inland side of the high-water mark which, when the NEM: ICMA took effect, was state land reserved or designated on an official plan, deed of grant, title deed or other document evidencing title or land-use rights as 'admiralty reserve', 'government reserve, beach reserve', coastal forest reserve or other similar reserve."

83 Section 7(1)(f) of NEM: ICMA.

84 Section 7(1)(a) of NEM: ICMA. Coastal waters are defined in s 1 as (a) the internal waters, territorial waters, exclusive economic zone and continental shelf of the Republic referred to in sections 3, 4, 7 and 8 of the *Maritime Zones Act* 15 of 1994 respectively and (b) an estuary.

85 Section 7(1)(b) of NEM: ICMA.

86 Section 7(1)(c) of NEM: ICMA. Insofar as islands are concerned, s 7(2)(c) provides that coastal public property does not include any part of an island that was lawfully alienated before the NEM: ICMA came into operation.

Insofar as both the landward and seaward sides are concerned, coastal public property is made up of any natural resource on or in any of the components set out above.[87]

One of the most significant components of the definition of coastal public property is the "seashore". This is because in most cases it will determine the landward boundary of coastal public property and most importantly the boundary between that part of the coast that may be privately owned and that part that may not be so owned.

The seashore is defined in section 1 of the NEM: ICMA as the "area between the low-water mark and the high-water mark". The low-water mark, in turn, is defined as "the lowest line to which coastal waters recede during spring tides", and the high-water mark as the "highest line reached by coastal waters, but excluding any line reached as a result of exceptional or abnormal weather or sea conditions, or an estuary being closed to the sea."[88]

An important consequence of these definitions is that the landward boundary of coastal public property is based primarily on the position of the high-water mark. In other words, the high-water mark forms the boundary between public and private property.

6.2 Changes in the high-water mark

Apart from making provision for coastal public property, the NEM: ICMA also deals with changes in the high-water mark. When the Act first came into operation it regulated changes in the high-water mark brought about because of both coastal erosion and coastal accretion. Changes brought about as a result of coastal erosion were regulated by section 14(5) of the Act, while changes brought about as a result of coastal accretion were regulated by section 14(6).

Insofar as coastal erosion was concerned, section 14(5) provided that:

> If the high-water mark moves inland of the boundary line of a land unit due to the erosion of the coast, sea-level rise or other causes, and remains inland of that boundary line for a period of three years, the owner of that land unit:

87 Section 7(1)(h) of NEM: ICMA.

88 Although there are some minor differences, the definition of the high-water mark is based largely on the approach adopted in Roman law. In his *Institutes* Justinian defined the high-water mark as "the limit of the highest tide in times of storm or winter" (see Justinian *Institutes of Justinian* 2.1.3). This definition was adopted almost verbatim in Roman-Dutch law and in *Pharo v Stephen Stephan* 1917 AD 1 9 the Appellate Division held that the reference to winter storms was a reference to ordinary winter storms and not to abnormal or exceptional floods.

> (a) loses ownership of any portion of that land unit that is situated below the high-water mark; and
>
> (b) is not entitled to compensation from the State for that loss of ownership, unless the movement of the high-water mark was caused by an intentional or negligent act or omission by an organ of state and was a reasonably foreseeable consequence of that act or omission.

And insofar as coastal accretion was concerned, section 14(6) stated that:

> If accretion occurs, whether as a result of natural processes or human activities, land which formed part of the seashore when this Act took effect and which subsequently becomes situated inland of the high-water mark as a result of a change in the position of the high-water mark, remains coastal public property, and does not become part of any adjoining property unless the property is bounded by the high-water mark or extends to a staled distance from the high-water mark.

The reference in section 14(6) of the NEM: ICMA to property that is "bounded by the high-water mark" or which "extends to a stated distance from the high-water mark" appeared to be a reference to an *argus non limitatus*. In terms of the common law, however, it has always been possible for a part of the seashore to be incorporated into a unit of land as a result of alluvion. With one exception, therefore, section 14(6) simply seemed to codify the common law principles governing the acquisition of land by alluvion.

The exception related to the fact that section 14(6) referred to accretion that had occurred either as a result of natural processes or human activities. As we have already seen, in *Colonial Government v Town Council of Cape Town* the court held, contrary to the principles of Roman-Dutch law, that alluvion could not be advanced by artificial means but only by the natural actions of the sea. The reference to "human activities" in section 14(6), therefore, marked a return to the Roman-Dutch position, at least insofar as littoral owners were concerned.

In 2014 section 14(5) of the NEM: ICMA was amended in various respects and section 14(6) was repealed.[89] Unfortunately it is not entirely clear why section 14(5) was amended and section 14(6) repealed. The Memorandum on the Objects of the Amendment Bill simply states that these amendments were aimed at clarifying "the consequences of the high-water mark moving inland or seaward".[90] The amended section 14(5) now reads as follows:

> If the highwater mark is landward of a straight line boundary of a coastal land unit when this Act took effect, or the highwater mark moves landward of a

89 See the *National Environmental Management: Integrated Coastal Management Amendment Act* 36 of 2014.

90 See National Environmental Management: Integrated Coastal Management Amendment Bill [B8-2013] Memorandum para 2.2.9.

> straight line boundary of a coastal land unit due to the erosion of the coast, sea level rise or other causes, the owner of that coastal land unit:
>
> (a) loses ownership of any portion of that coastal land unit that is situated below the highwater mark to the extent that such land unit becomes coastal public property; and
>
> (b) is not entitled to compensation from the State for that loss of ownership, unless the movement of the highwater mark was caused by an intentional or negligent act or omission by an organ of state and was a reasonably foreseeable consequence of that act or omission.

The reference in section 14(5) of the NEM: ICMA to a "straight line boundary of a coastal land unit"[91] appears to be a reference to a coastal land unit that is enclosed on all sides with artificial and not natural boundaries (i.e. to an *ager limitatus*). If this is correct, it follows that – at common law – the seaward boundary of such a coastal land unit cannot move landward because of the landward movement of the high-water mark. This is because the common law provides that the seaward boundary is fixed and not ambulatory.

An important consequence of this common law principle is that if the high-water mark does move landward of the straight line boundary of such a coastal land unit "due to the erosion of the coast, sea level rise or other causes", the portion of land situated between the straight line boundary and the high-water mark (the inundated portion) will retain its status as private property despite the fact that it has been inundated by seawater and may no longer be accessible or of any use to the landowner.

A plain reading of section 14(5)(a) of the NEM: ICMA, however, shows that it has effectively abolished this common law rule. This is because it expressly provides that if the high-water mark was already inland of the straight-line boundary of a coastal land unit when the Act came into operation or moves inland of such a boundary after the Act came into operation the inundated portion becomes a part of the seashore and thus coastal public property. As such it can no longer be privately owned.

In the light of these points it is submitted that the purpose behind section 14(5)(a) of the NEM: ICMA is to replace the existing fixed straight line boundary of a coastal land unit with a new ambulatory high-water mark curvilinear boundary in two specific circumstances. Or, to put it another way, it is submitted that the purpose behind section 14(5)(a) of the Act is to bring the common law principles governing *agri limitati* in line with the common law principles governing *agri non limitati* in certain limited circumstances.

---

91 A land unit is defined in s 1 of the NEM: ICMA as "a cadastral entity which is capable of registration in the deeds registry in terms of the Deeds Registries Act [47 of 1937]."

These specific circumstances are, first, where the high-water mark moved inland of the seaward boundary of the *ager limitatus* before the NEM: ICMA came into operation; and second, where the high-water mark moves inland of the seaward boundary line of an *ager limitatus* after the NEM: ICMA came into operation. Insofar as the second circumstance is concerned, the high-water mark must have moved inland of the straight-line boundary as a result of "the erosion of the coast, sea level rise or other causes".

As Sowman and Rebelo point out, these provisions have important consequences for the parcels of land to which they apply. One of the most important is that those parcels that were *agri limitati* will be re-classified as *agri non limitati*. This reclassification, they point out further, will be permanent because section 14(1) of the NEM: ICMA expressly provides that an ambulatory high-water mark curvilinear boundary, including one created in terms of section 14(5)(a), may not be replaced by a fixed straight-line boundary.[92]

Apart from pointing out the consequences of the provisions of section 14(5)(a) of the NEM: ICMA, Sowman and Rebelo also argue that these provisions appear to be aimed at phasing out the existence of *agri limitati* that are located adjacent to the seashore.[93] Besides creating a uniform legal regime when it comes to the seaward boundaries of coastal land units, this goal will also promote an ecosystems-based approach towards conserving and protecting the coastal environment and will thus promote the aims and objects of the Act itself.

An ecosystems-based approach is one that seeks to manage an ecosystem on a holistic and integrated basis rather than a fragmented and sectoral one. This is because it recognises that ecosystems are a "rich mix of elements" that are connected to and interact with one another. One of the most important aspects of an ecosystems-based management approach, therefore, is that it is "fundamentally a place-based approach where an ecosystem represents the place." It thus favours natural boundaries such as the high-water mark over artificial ones such as a surveyed line.[94]

Despite its potential to make a positive contribution to the conservation and protection of the coastal environment, the provisions of section 14(5)(a) of the NEM: ICMA may nevertheless give rise to some complex and difficult problems. One of these is whether the owner of a coastal land unit that has been reclassified in terms of section 14(5)(a) as an *agri non limitati* is entitled to claim alluvion should the newly established ambulatory high-water mark

92 Sowman and Rebelo "The Coastal Environment" para 11.7.2.
93 Sowman and Rebelo "The Coastal Environment" para 11.7.2.
94 UNEP 2011 https://www.unep.org/resources/report/taking-steps-toward-marine-and-coastal-ecosystem-based-management-introductory 10.

curvilinear boundary reverse course and retreat seawards past that coastal land unit's original fixed straight-line boundary as a result of a fall in the level of the sea.

Fischer and Whittal have made some helpful suggestions in this respect. One of these is that as soon as the ambulatory high-water mark retreats past the fixed straight-line boundary on its journey seaward, that fixed straight line boundary revives and consequently the landowner is not entitled to claim ownership of the newly created dry land area between the fixed straight line boundary and the now lower-lying ambulatory high-water mark. In other words, the landowner cannot claim ownership of this area by alluvion. As they note, this approach mirrors the common law rules governing the acquisition of ownership by alluvion in respect of *agri limitati*.[95]

Another suggestion is that when the ambulatory high-water mark retreats past the fixed straight-line boundary on its journey seaward, that fixed straight-line boundary is not revived. Instead, the ambulatory high-water mark curvilinear boundary continues to apply and consequently the landowner is entitled to claim ownership of the newly created dry land area between the fixed straight-line boundary and the now lower-lying ambulatory high-water mark. In other words, the landowner can claim ownership of this area by alluvion. As they note, this approach mirrors the common law rules governing the acquisition of ownership by alluvion in respect of *agri non limitati*.[96]

Although Fischer and Whittal are critical of the second approach and appear to favour the first, it is submitted that the second approach is correct for the reasons given by Sowman and Rebelo, namely that the effect of section 14(5)(a) of the NEM: ICMA is to substitute the straight line boundary of a coastal *argus limitatus* with a high-water mark curvilinear and ambulatory boundary; that in the light of section 14(1) this substitution is permanent; and consequently that the goal of section 14(5)(a) is to phase out the existence of *agri limitati* that are located adjacent to the sea shore.

Besides the reasons given by Sowman and Rebelo, the second approach also appears to be consistent with the manner in which Parliament understands the effect of section 14(5)(a) of the NEM: ICMA. This is because section 14(5)(b) expressly provides that, subject to certain exceptions,[97] the owner of a coastal land unit is not entitled to claim

95 Fischer and Whittal *Cadastre* 544.

96 Fischer and Whittal *Cadastre* 547.

97 These exceptions provide that the owner of a coastal land will be entitled to claim compensation if the landward movement of the high-water mark and the concomitant loss of ownership was "caused by an intentional or negligent act or omission by an organ of state and was a reasonably foreseeable consequence of that act or omission" (see s 14(5)(b) of the NEM: ICMA).

compensation as the result of the reclassification of his or her property as an *ager non limitatus* and the loss of ownership that will arise if the high-water mark moves landward. Without engaging in a full section 25(1) constitutional analysis,[98] it submitted that this provision can be justified on the ground that the potential loss of ownership that a reclassified coastal land unit may now suffer as a result of the landward movement of the high-water mark is offset by the potential gain in ownership that may now be enjoyed as a result of the seaward movement of the high-water mark and the right to claim alluvion. This potential gain in ownership applies only to the second approach suggested by Fischer and Whittal and not the first.

7 Conclusion

Although the common law principles and rules governing the acquisition of ownership by alluvion have stood the test of time, it is important to note that they were developed in an age when the earth enjoyed a more stable climate. As the earth continues to get warmer, the climate will become less and less stable and this will inevitably call into question the efficacy and suitability of at least some of the legal concepts, principles and rules that regulate the ownership of land and other natural resources. Those concepts, principles or rules that do not facilitate climate change adaptation and mitigation may suffer the same fate as coastal land units that are *agri limitati*. In this respect, section 14(5) of the NEM: ICMA may be seen as a portent of reforms to come.

Finally, it remains for me to acknowledge the enormous contribution that Willemien du Plessis has made to the development of legal scholarship in South Africa over the course of her academic career, and to express my personal appreciation for the friendliness, kindness and generosity she has always shown towards me. She has set an example that we would do well to follow.

Bibliography

Literature

Allison, Palmer and Haigh 2022 *Environmental Research Communications* Allison LC, Palmer MD and Haigh ID "Projections of 21st Century Sea Level Rise for the Coast of South Africa" 2022 *Environmental Research Communications* 1-15 https://doi.org/10.1088/2515-7620/ac4a90

98 *First National Bank of SA Ltd t/a Wesbank v Commissioner for the South African Revenue Service; First National Bank of SA Ltd t/a Wesbank v Minister of Finance* 2002 4 SA 768 (CC) para 46.

Carey Miller *Acquisition and Protection of Ownership*
Carey Miller DL *The Acquisition and Protection of Ownership* (Juta Cape Town 1986)

Cartwright *Coastal Vulnerability*
Cartwright A *Coastal Vulnerability in the Context of Climate Change: A South African Perspective* (Centre for Criminology Cape Town 2011)

De Groot *Inleidinge tot de Hollandsche Rechtsgeleerdheid*
De Groot H *Inleidinge tot de Hollandsche Rechtsgeleerdheid* (Lee RW (transl)) (Gouda Quint Arnhem 1926)

Du Plessis *Annotated Translation*
Du Plessis P *An Annotated Translation of Bartolus' Tractatus De Fluminibus Seu Tyberiadis (Book 1)* (MA-thesis North-West University 1999)

Fischer and Whittal *Cadastre*
Fischer R and Whittal J *Cadastre: Principles and Practice* (South African Geomatics Institute Durban 2020)

Gaius *Institutes of Gaius*
Gaius *The Institutes of Gaius* (De Zulueta F (transl)) (Clarendon Oxford 1935)

Groenewegen van der Made *Tractus de Legibus Abrogatis*
Groenewegen van der Made S *Tractus de Legibus Abrogatis et Inusitatis in Hollandia Vicinisque Regionibus* (Beinart B and Hewett ML (transl)) (Lex-Patria Johannesburg 1974)

Huber *Heedendaegse Rechtsgeleertheyt*
Huber U *Heedendaegse Rechtsgeleertheyt* (Gane P (transl)) (Butterworths Durban 1939)

IPCC *Climate Change 2023*
Intergovernmental Panel on Climate Change *Climate Change 2023: Synthesis – A Summary for Policy Makers* (IPCC Geneva 2023)

IPCC *Special Report on the Ocean*
Intergovernmental Panel on Climate Change *Special Report on the Ocean and Cryosphere in a Changing Climate – A Summary for Policy Makers* (IPCC Geneva 2019)

Justinian *Digest of Justinian*
Justinian *The Digest of Justinian* (Mommsen T and Krueger P (eds), Watson A (transl)) (University of Pennsylvania Press Philadelphia 1985)

Justinian *Institutes of Justinian*
Justinian *The Institutes of Justinian* (Moyle JB (transl)) (Clarendon Press Oxford 1913)

King, Strydom and Retief *Fuggle and Rabie's Environmental Management*
King ND, Strydom HA and Retief FP (eds) *Fuggle and Rabie's Environmental Management in South Africa* 3rd ed (Juta Cape Town 2018)

Lewis "*Alluvio*"
Lewis A "*Alluvio*: The Meaning of the *Institutes* II.1.20" in Stein PG and Lewis A (eds) *Studies in Justinian's Institutes: In Memory of JAC Thomas* (Sweet and Maxwell London 1983) 87-95

Muller *et al Silberberg and Schoeman's Law of Property*
Muller G et al *Silberberg and Schoeman's The Law of Property* 6th ed (LexisNexis Durban 2020)

Pienaar 2015 *PELJ*
Pienaar G "The Effect of the Original Acquisition of Ownership of Immovable Property on Existing Limited Real Rights" 2015 *PELJ* 1480-1505

Scholes, Scholes and Lucas *Climate Change*
Scholes B, Scholes M and Lucas M *Climate Change: Briefings from Southern Africa* (Wits University Press Johannesburg 2015)

Scholtens 1957 *SALJ*
Scholtens JE "Ager Limitatus and Alluvio" 1957 *SALJ* 272-275

Sonnekus 1985 *TSAR*
Sonnekus JC "Enkele Opmerkings na Aanleiding van die Aanspraak op *Bona Vacantia* as Sogenaamde Regale Reg" 1985 *TSAR* 121-148

Sonnekus 2001 *TSAR*
Sonnekus JC "Grondeise en die Klassifikasie van Grond as *Res Nullius* of as Staatsgrond" 2001 *TSAR* 84-114

Sonnekus and Neels *Sakereg Vonnisbundel*
Sonnekus JC and Neels JL *Sakereg Vonnisbundel* 2nd ed (Butterworths Durban 1994)

Sowman and Rebelo "The Coastal Environment"
Sowman M and Rebelo X "The Coastal Environment" in Glazewski J (ed) *Environmental Law in South Africa* 2nd ed (LexisNexis Durban 2005) 11-1 to 11-59

Van der Keessel *Praelectiones*
Van der Keessel DG *Praelectiones Iuris Hodierni ad Hugonis Grotii Introductionem ad Iurisprudentiam Hollandicam* (Van Warmelo P *et al* (transl)) (Balkema Amsterdam 1963)

Van der Merwe *Sakereg*
Van der Merwe CG *Sakereg* (Butterworths Durban 1979)

Van der Merwe *Sakereg* 2nd ed
Van der Merwe CG *Sakereg* 2nd ed (Butterworths Durban 1989)

Van der Merwe "Things"
Van der Merwe CG "Things" in Joubert WA and Faris JA *The Law of South Africa Volume 27* 2nd ed (LexisNexis Butterworths Durban 2014)

Van der Merwe and Pope "Ownership"
Van der Merwe CG and Pope A "Ownership" in Du Bois F (ed) *Wille's Principles of South African Law* 9th ed (Juta Cape Town 2007) 469-556

Van Leeuwen *Censura Forensis*
Van Leeuwen S *Censura Forensis* (Schreiner WP (transl)) (Juta Cape Town 1883)

Vinnius *In Quatuor Libros Institutionum*
Vinnius A *In Quatuor Libros Institutionum Imperialium Commentarius Academicus et Forensis* (Van der Linden Lugduni Batavorum 1726)

Voet *Commentarius ad Pandectas*
Voet J *Commentarius ad Pandectas* (Gane P (transl)) (Butterworths Durban 1957)

Case law

Attorney General of Southern Nigeria v John Holt and Co (Liverpool) Ltd [1915] AC 599 (PC)

Body Corporate of Dolphin Cove v KwaDukuza Municipality (8513/10) [2012] ZAKZDHC 13 (20 February 2012)

Butgereit v Transvaal Canoe Union 1988 1 SA 759 (A)

Colonial Government v Town Council of Cape Town (1902) 19 SC 87

Durban City Council v Minister of Agriculture 1982 2 SA 361 (D)

Elandsrand Gold Mining Company Ltd v JF Uys (TPD) (unreported) case number 9915/93 of 1 February 1994

First National Bank of SA Ltd t/a Wesbank v Commissioner for the South African Revenue Service; First National Bank of SA Ltd t/a Wesbank v Minister of Finance 2002 4 SA 768 (CC)

Lange v Minister of Lands 1957 1 SA 297 (A)

Pharo v Stephen Stephan 1917 AD 1

Secretary of State for India v Vizianagaram (Rajah) (1921) LR 49 Ind App 67

Southern Centre of Theosophy Inc v South Australia [1981] 1 All ER 283 (PC)

Surveyor General (Cape) v Estate De Villiers 1923 AD 588

Van Niekerk and Union Government (Minister of Lands) v Carter 1917 AD 359

Legislation

Constitution of the Republic of South Africa, 1996

Deeds Registries Act 47 of 1937

Land Survey Act 8 of 1997

Maritime Zones Act 15 of 1994

National Environmental Management: Integrated Coastal Management Act 24 of 2008

National Environmental Management: Integrated Coastal Management Amendment Act 36 of 2014

Seashore Act 21 of 1935

Government publications

National Environmental Management: Integrated Coastal Management Amendment Bill [B8-2013]

International instruments

Paris Agreement (2015)

Internet sources

Corkill 2012 https://www.unsw.edu.au/content/dam/pdfs/engineering/civil-environmental/water-research-laboratory/accarnsi/Principles-and-Problems-Of-Shoreline-Law.pdf

Corkill J 2012 *Principles and Problems of Shoreline Law. Australian Climate Change Adaption Research Network for Settlements and Infrastructure: Discussion Paper G* https://www.unsw.edu.au/content/dam/pdfs/engineering/civil-environmental/water-research-laboratory/accarnsi/Principles-and-Problems-Of-Shoreline-Law.pdf accessed 7 November 2023

Scholes and Engelbrecht 2021 https://cer.org.za/wp-content/uploads/2021/09/Climate-impacts-in-South-Africa_Final_September_2021.FINAL_.pdf

Scholes R and Engelbrecht F 2021 *Climate Impacts on Southern Africa During the 21st Century: A Report for the Centre for Environmental Rights*

https://cer.org.za/wp-content/uploads/2021/09/Climate-impacts-in-South-Africa_Final_September_2021.FINAL_.pdf accessed 7 November 2023

UNEP 2011 https://www.unep.org/resources/report/taking-steps-toward-marine-and-coastal-ecosystem-based-management-introductory
United Nations Environment Programme 2011 *Taking Steps toward Marine and Coastal Ecosystems-Based Management* https://www.unep.org/resources/report/taking-steps-toward-marine-and-coastal-ecosystem-based-management-introductory accessed 7 November 2023

US Global Change Research Program 2017 https://science2017.globalchange.gov/
US Global Change Research Program 2017 *Climate Science Special Report: Fourth National Climate Assessment Volume 1* https://science2017.globalchange.gov/ accessed 7 November 2023

WMO 2023 https://public.wmo.int/en/our-mandate/climate/wmo-statement-state-of-global-climate
World Meteorological Organization 2023 *State of the Global Climate 2022* https://public.wmo.int/en/our-mandate/climate/wmo-statement-state-of-global-climate accessed 7 November 2023

List of Abbreviations

GHG	greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
NEM: ICMA	National Environmental Management: Integrated Coastal Management Act 24 of 2008
PELJ	Potchefstroom Electronic Law Journal
SALJ	South African Law Journal
SSPs	Shared Socio-economic Pathways
TSAR	Tydskrif vir die Suid-Afrikaanse Reg
UNEP	United Nations Environment Programme
WMO	World Meteorological Organization