

**TERRITORIAL SEA BASELINES ALONG ICE COVERED COASTS:
INTERNATIONAL PRACTICE AND LIMITS OF THE LAW OF THE SEA**

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Abstract

This article considers the relevant international law pertaining to territorial sea baselines, and reviews the application of that law to ice-covered coasts. The international literature concerning status of ice in international law is examined and State practice for both the Arctic and Antarctic is reviewed. The Law of the Sea Convention contains virtually no provisions pertaining to ice, as during its negotiation, in an effort to reach a consensus, all discussion of Antarctica was avoided. International lawyers appear to favour the notion that where ice persists for many years and is fixed to land or at least is connected to ice that is connected to land, it may be able to generate territorial sea baselines. Neither the International Court of Justice nor any other international tribunal has had the opportunity to consider the status of ice, except in the most general terms. This article considers some alternatives and difficulties in their application. The impact of the Antarctic Treaty on any system is also considered, as Articles IV and VI of the Treaty may be affected by any international action by claimants in proclaiming baselines.

1. Introduction

The Law of the Sea Convention pertains to all the world's oceans and provides a regime for the determination of coastal State maritime jurisdiction. At the core of the regime lies a scheme of maritime zones, radiating out from the coast, that cover a third of the world's ocean space, over ninety percent of the world's wild fisheries, and almost all the world's resources of offshore oil and gas. Critical to this regime is the location of the territorial sea baseline, as it is the point from where all the maritime zones are calculated.

For most of the globe, the location of territorial sea baselines is relatively straight forward, with the greatest difficulties arising from interpretation of the rules contained within the Convention. The focus of this article is on that portion of the Earth's coastline that does not have a conventional coast, but rather of a coast beset with a permanent ice cover. While the presence of ice may present a seemingly natural and continuous barrier that resembles land, ice shelves are in motion, both in terms of gradual growing and breaking off, and moving slightly up and down with the tides. This article considers how an ice-covered coast might be dealt with at international law and some of the complications generated by the location of the vast majority of ice beset coasts in the Antarctic.

2. International Law and Territorial Sea Baselines

Ordinarily, the low water mark¹ along the coastline serves as the baseline from which the territorial sea will be measured,² however there are a number of exceptions. Since 1951, international law has recognised that where a coastline is deeply indented and/or dotted with fringing islands, it ought to be permissible for a coastal State to draw baselines around such features.³ As such, features like the mouths of rivers or certain bays can, for the purposes of measuring the territorial sea, be "closed off" and treated as if they were part of the coastline. The waters to the landward side of these baselines are designated internal waters and for the purposes of State sovereignty they are treated as if they are land.⁴

1 The United Nations Office for Ocean Affairs and the Law of the Sea adopted a resolution of the International Hydrographic Conference:

The low-water line is the intersection of the plane of low-water with the shore. The low-water mark on a chart is the line depicting the level of the chart datum. A technical resolution of the International Hydrographic Organization states that the level used as the chart datum shall be a place so low that the tide will not frequently fall below it. In practice this will be close to the lowest tidal level.

United Nations Office for Ocean Affairs and the Law of the Sea, *Baselines: An Examination of the Relevant Provisions of the United Nations Convention on the Law of the Sea* (United Nations, New York: 1989) 2-3. See also Satya N. Nadan and Shabtai Rosenne (eds) *United Nations Convention on the Law of the Sea 1982: A Commentary* (Martinus Nijhoff, Dordrecht: 1993) 89.

2 United Nations Convention on the Law of the Sea (LOS Convention), 10 December 1982, Montego Bay, 21 *I.L.M.* 1261 (1982): Article 5.

3 *Anglo-Norwegian Fisheries Case*, [1951] *I.C.J. Reports* p.116; see also D.P. O'Connell, *The International Law of the Sea* (Oxford: Clarendon Press, 1982) Vol.1, 206; D.H.N. Johnson, "The Anglo-Norwegian Fisheries Case" (1952), 1 *International and Comparative Law Quarterly* 145.

4 Article 8 of the LOS Convention.

The regime of territorial sea baselines in the contemporary law of the sea is dealt with in Part II, Section 2 of the Law of the Sea Convention. These provisions indicate the appropriate standard for an ordinary territorial sea baseline and the circumstances when other baselines may be drawn. The basic provision is contained in Article 5 of the Law of the Sea Convention where it states:

Except as where otherwise provided in this Convention, the normal baseline for measuring the breadth of the territorial sea is the low-water line along the coast as marked on large scale charts officially recognised by the coastal State.⁵

In the event the low water mark is not used, the Convention permits a range of other circumstances where baselines can be drawn. While not all of these categories of circumstances are directly relevant to this paper, listing them is of utility as together they do indicate the broad approach taken with the LOS Convention.

- Fringing reefs (Article 6)
- Straight baselines (Article 7)
- Mouths of Rivers (Article 9)
- Bays (Article 10)
- Ports (Article 11)
- Roadsteads (Article 12)
- Low-tide elevations (Article 13)

Article 14 allows a coastal State to use any of the above methods to suit differing conditions.

Some of the above categories will not, at first instance, be of relevance to ice-bound coasts. Antarctica possesses no ports, and were a formal roadstead designated, it would be only a tiny fraction of the coastline in issue. Even in the Arctic, where several ports are in use where ice conditions are of great concern, such as Murmansk, the ice is not permanent and therefore does not affect port operations for at least part of the year. As such, Articles 11 and 12 can be safely passed over. A similar argument could be made in relation to Article 9, as Antarctica possesses only one river, the Onyx, located in the Ross Dependency. Rivers in the Arctic, such as the Yenisey, Lena, Ob and Mackenzie are only affected by ice for part of the year, and are important navigational routes in the summer. No permanent river flows through an ice shelf to reach the sea.

The principal provisions from the above list that are of relevance are Article 7, dealing with straight baselines, and Article 10, dealing with bays. However before these provisions can be considered, it is necessary to examine the status of the ice upon the coast, to determine whether it is relevant to the application of baselines. Obviously if ice is treated as permanent by a coastal State, and equated with land for the purposes of Article 5, then Articles 7 and 10 may be of assistance in providing additional basepoints. If ice is treated as not being capable of generating territorial sea basepoints, then Articles 7 and 10 may have separate application. As such the status of ice in law needs to be considered.

3. Status of Ice in International Law

5 The term “large scale” is not defined in the LOS Convention; but Article 16 does indicate the scale should be sufficiently large to permit positions to be ascertained.

At the Third United Nations Conference of the Law of the Sea (UNCLOS III), the Antarctic Treaty parties were most reluctant to have law of the sea issues discussed in the context of the Antarctic, and were successful in ensuring that the 1982 LOS Convention contained no references to Antarctica.⁶ As such, the LOS Convention does not deal adequately with a number of difficulties which the environment of the region places before an Antarctic claimant State wishing to extend jurisdiction over the surrounding ocean.

At UNCLOS III, the questions surrounding the status of ice were only discussed in terms of Arctic lands, and largely among the Arctic States.⁷ Given that since the 1960s, both the Soviet Union and the United States had successfully been able to navigate under the ice in nuclear-powered submarines,⁸ and Canada has periodically toyed with the application of the sector theory,⁹ it is not surprising the LOS Convention does not directly deal with the status of ice. Article 234 merely permits regulation for the prevention of pollution and safety of navigation in ice-covered areas within the EEZ.¹⁰ It does not specify where the baselines for the EEZ are to be located. However, given that the article refers to ice within the EEZ, some authors have taken the view there is an implication that floating ice (that is at least periodic rather than permanent) cannot be the subject of

6 Speaking in 1975 to the UN General Assembly, President Amerasinghe of UNCLOS III said:
I should make it clear that the question of the status of Antarctica is in no way linked with the issues before the United Nations Conference on the Law of the Sea and, therefore, this question should not delay agreement on a new Convention on the Law of the Sea.

United Nations, *Official Records of the General Assembly*, (New York: United Nations, 1975) Vol.30, 2380th Meeting, para.36.

7 Nordquist notes that the only provision in the 1982 LOS Convention dealing with ice-covered regions, Article 234, was known as the “Arctic Article” and was negotiated directly by the USA, the USSR and Canada. It was motivated by a desire to prevent pollution and ensure safety of navigation rather than a desire to clarify the status of ice. M.H. Nordquist (ed.), *United Nations Conference on the Law of the Sea 1982: A Commentary*, (Dordrecht: Martinus Nijhoff, 1991) 392-398. Auburn states that some third world countries did wish UNCLOS III to deal with Antarctica and Southern Ocean issues, but were “headed off” by Treaty parties. F. Auburn, *Antarctic Law and Politics* (Bloomington: Indiana University Press, 1982) 126; see also M.J. Peterson, “Antarctic Implications of the New Law of the Sea” (1986), 16 *Ocean Development and International Law* 137 at 165. Gautier has noted that Article 234 appears “to be concerned rather with the Arctic”: P. Gautier, “The Maritime Area of the Antarctic and the New Law of the Sea” in J. Verhoeven, P. Sands and M. Bruce (eds), *The Antarctic Environment and International Law* (London: Graham and Trotman, 1992) 121 at 134.

8 See S.B. Boyd, “The Legal Status of the Arctic Sea Ice: A Comparative Study and a Proposal” (1984), 22 *Canadian Yearbook of International Law* 98 at 116.

9 *Ibid.*, 103-110

10 Article 234 of the LOS Convention states:

Coastal States have the right to adopt and enforce non-discriminatory laws and regulations for the prevention, reduction and control of marine pollution from vessels in ice-covered areas within the limits of the exclusive economic zone, where particularly severe climatic conditions and the presence of ice covering such areas for most of the year create obstructions or exceptional hazards to navigation, and pollution of the marine environment would cause major harm or irreversible disturbance of the ecological balance. Such laws and regulations shall have regard to navigation and the protection and preservation of the marine environment based on the best available scientific evidence.

claim,¹¹ and the notion that floating ice cannot be equated with land appears to be the one preferred.¹² It is apparent that nothing in the LOS Convention appears to exempt ice covered areas, in either the Arctic or the Antarctic, from the ordinary operation of the Convention.¹³

The nature of much of the ice in the Antarctic is different from Arctic ice. Whilst surrounded by a huge band of pack ice and sea ice for much of the year, the existence of the huge Antarctic continent creates a vast ice sheet, which is not duplicated in the Arctic to any great extent save in Greenland.¹⁴ This vast cap of ice covers well over ninety percent of Antarctica,¹⁵ rising to over 4000 metres high in the interior. In addition, around the continent, a number of vast ice shelves, most notably the Ross and the Filchner-Ronne, extend from the sheet as large ice shelves out over water, forming an impenetrable barrier to normal navigation. The shelves originate from points grounded on the sea floor and are floating.¹⁶ They can be identified as shelves by virtue of their floating character, and “flex” up and down with the tide.

With very little land free of the ice, the great Antarctic ice sheet reaches to the coast around most of the continent. While the ice is permanent, and is generally stable, gravity pushes the huge volume of ice in the centre of the continent out to the shelves at the edges of the sheet.¹⁷ This periodically causes the ice to “calve” and produce huge tabular icebergs,¹⁸ or in cases where the shelf is affected

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- 11 The crucial phrase is “within the EEZ”. If ice was in all circumstances equated with land, it would by necessity generate a territorial sea, and could not be said to be “within the EEZ”. This is the view of C.C. Joyner, “Ice-Covered Regions in International Law” (1991), 31 *Natural Resources Journal* 213 at 220-229. See also Boyd, *supra* note 8, 101-102.
- 12 It seems relatively clear that ocean pack ice cannot be claimed. Joyner, *supra* note 11, 224. Mangone, however, questions the situation in the Arctic. G. J. Mangone, “The Legal Status of Ice in International Law” in R. Wolfrum (ed.), *Antarctic Challenge III* (Berlin: Duncker & Humblot, 1988) 371 at 373. No claimant State in the Antarctic expressly claims pack ice, except Chile, which has indicated that it has all types of ice in its sector. See W. Bush, *Antarctica and International Law* (Dobbs Ferry: Oceana, 1982) Vol.2, 310-311. Pharand is of the view that unless the ice is part of an ice shelf attached to land, it cannot be treated as land. D. Pharand, *The Law of the Sea of the Arctic with Special Reference to Canada* (Ottawa: University of Ottawa Press, 1973) 194-197. Auburn notes there is no consensus on the status of ice, but points out this relates to ice shelves, while he implies floating ice may not be the subject of claim. Auburn, *supra* note 7, 32-38. See also W.L. Lakhtine, “Rights over the Arctic” (1930), 24 *American Journal of International Law* 703 at 712. Boyd examines the opinions of jurists in Canada, the Soviet Union and the United States and appears to find a consensus that while ice shelves may be the subject of some type of claim, more transitory floating ice and ice islands may, at best, be treated as equivalent to ships, and not equated with land. Boyd, *supra* note 8, 120-136.
- 13 This point is made by C.C. Joyner, “The Status of Ice in International Law” in A.G. Oude Elferink and D.R. Rothwell (eds), *The Law of the Sea and Polar Maritime Delimitation and Jurisdiction* (London: Kluwer Law, 2001) 23 at 25.
- 14 Joyner notes that the Greenland ice sheet is, for the most part, confined to the interior of the island, so rarely forms coastal ice shelves. Joyner, *supra* note 11, 220-221.
- 15 Joyner suggests 98% is a reasonable estimation. C.C. Joyner, *Antarctica and the Law of the Sea* (Dordrecht: Martinus Nijhoff, 1992) 195 and see also Mangone, *supra* note 12, 373.
- 16 A useful, yet brief, discussion of the physical characteristics of the Antarctic ice sheet and ice shelves is found in Joyner, *supra* note 15, 14-15 and see also Mangone, *supra* note 12, 373-374.
- 17 Auburn, *supra* note 7, 32.
- 18 Joyner, *supra* note 11, 229. Auburn notes that one known iceberg calved from a shelf had an area of 4650 km². Auburn, *supra* note 7, 32. Presumably the same iceberg is given as an example by Joyner, who places it at 100 kilometres long with an area the size of Luxembourg or Connecticut. Joyner, *supra* note 15, 15.

by warmer temperatures to collapse.¹⁹ Given that the territorial sea and EEZ are measured from baselines that are usually taken to be the low tide limit of the land, the existence of the ice makes the identification of exactly where this point is most difficult. A number of authors have indicated the permanent nature of this shelf ice may make it susceptible to claim where it extends beyond the land.²⁰ They argue that it is indistinguishable from the ice-covered land,²¹ is relatively stable in that the shelves consist of ice many thousands of years old, and change in size over decades, and to some extent would greatly simplify the task of drawing baselines.²² Both Zuccaro and Joyner suggest that the Antarctic Treaty²³ itself may imply such a view in the construction of Article VI, specifically separating ice shelves from the high seas. In 1959, when the widest surface maritime zone was the 12 nautical mile contiguous zone, the high seas would have accounted for much of the great ice shelves' area, were they not susceptible to claim as something equating to land.²⁴

However, even those who argue that seaward parts of the Antarctic ice might be the subject of claim differ as to the status such a claim would have. One point of view holds that an ice shelf might be equated with land, whilst another is that while title to an ice shelf is greater than that over the territorial sea, it is less than that over land.²⁵ As such an intermediate category, *glaces firma*, should

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- 19 This occurred in 2002 with the Larsen B ice shelf. Information courtesy of Dr Ian Allison, Australian Antarctic Division.
- 20 Such a view appears to be taken by Van der Essen when he indicates that an Article 5 baseline cannot be located anywhere but the outward face of the ice shelves “which are the seaward prolongation of the Antarctic continent.” A. Van der Essen, “The Application of the Law of the Sea to the Antarctic Continent” in F. Orrego Vicuña (ed.), *Antarctic Resources Policy* (Cambridge: Cambridge University Press, 1983) 234. Mangone seems to believe that “fast ice” (i.e. ice that is attached to territory) can be treated under Article 7 of the Law of the Sea Convention which is used for drawing baselines around highly unstable coasts. Mangone, *supra* note 12, 379-380. See also Joyner, *supra* note 11, 227; E.A. Zuccaro, “Iceberg Appropriation and the Antarctic's Gordian Knot” (1979), 9 *California Western International Law Journal* 405 at 413-414; F. Orrego Vicuña, *Antarctic Mineral Exploitation: The Emerging Legal Framework* (Cambridge: Cambridge University Press, 1988) 159-160; and E.J. Sahurie, *The International Law of Antarctica* (Dordrecht: Martinus Nijhoff, 1992) 380.
- 21 That is to say, an ice shelf is capable of occupation, like land. Permanent Antarctic stations such as Amundsen-Scott at the South Pole and Vostok in the interior have rested on ice for decades. Vostok actually rests upon ice that is grounded on land that is below sea level.
- 22 Mangone argues that the ice shelf ought to become the baseline for the territorial sea, contiguous zone and EEZ, as it has surface coordinates allowing for the visible demarcation of the territorial sea. However, he indicates that it ought not be used in determining the extent of the continental shelf beyond the EEZ. Mangone, *supra* note 12, 381. Pharand is of the view that, if of a permanent nature, ice shelves may be assimilated to land and be used as baselines for the territorial sea. Pharand, *supra* note 12, 187-188. Prescott takes the position that because of the practical difficulties of identifying a baseline fixed to the buried land, and because the ice never disappears, the obvious solution is to permit baselines to be drawn at the edge of the shelf ice. J.R.V. Prescott, “Boundaries in Antarctica” in S. Harris (ed.), *Australia's Antarctic Policy Options* (Canberra: Australian National University, 1984) 84 at 93. See also A. Watts, *International Law and the Antarctic Treaty System* (Cambridge: Cambridge University Press, 1992) 144.
- 23 Done at Washington DC, 1 December 1959, entered into force 23 June 1961: 402 U.N.T.S. 71.
- 24 Zuccaro, *supra* note 20, 414 and Joyner, *supra* note 11, 226.
- 25 Auburn suggests that as the ice shelf exhibits both the characteristics of land and sea, it should be “a special form of territory *sui generis* and subject to physical appropriation”. Auburn, *supra* note 7, 35. Joyner also suggests a third category would present “a more appealing option.” C.C. Joyner, “The Exclusive Economic Zone and Antarctica: The Dilemmas of Non-Sovereign Jurisdiction” (1988). 19 *Ocean Development and International Law* 469 at 475-476. Rothwell suggests that by virtue of Article VI of the Antarctic Treaty, the ice shelves are *sui generis*. D.R. Rothwell, “The Antarctic Treaty: 1961-1991 and Beyond” (1992) 14 *Sydney Law Review* 62 at 70.

be recognised.²⁶ Given the immense size of the ice shelves, the ultimate solution is of great significance to the position of the maritime zones generated by Antarctic lands. This is best illustrated by example. If the baselines for the territorial sea in Antarctica were drawn from the edge of the ice shelf, a band of territorial sea would front the edge of the Ross Ice Shelf in the Ross Sea. A corresponding EEZ would extend well out into the Ross Sea, most of which would be navigable during the summer season. If, however, only the lands of the continent proper were used, the centre of the edge of the Ross Ice Shelf itself would in fact be the high seas, just seaward of any EEZ generated by the lands of the Ross Dependency. As such, none of that EEZ would be navigable at any stage. Given there is the possibility of resource exploitation of at least the krill fisheries of the Ross Sea, the difference in the placement of baselines and the regime of ice is crucial.

There are a number of sound arguments against the utilisation of ice shelves as the baselines for the territorial sea in the Antarctic.²⁷ Compared to most land coasts, they are unstable, so would cause an Antarctic territorial sea to "move" over time as parts of the slow moving shelf broke away.²⁸ The shelves grow over time, and then retract through calving or collapse meaning the outer edge of the feature would change from year to year. The ice can be distinguished from the surrounding oceanic ice relatively simply, but the edge would still move regularly. This movement would occasion difficulties and might be resolved, for example, by using a system of baselines, based on the shelf's extent at a known date plus an arbitrary distance,²⁹ or determining the average extent of the shelf.³⁰

26 The term *glaces firma* means "firm ice" and is used by Joyner, who is of the view it could be "legally assimilated to land for jurisdictional considerations". Joyner, *supra* note 11, 221 and 226. McConnell also refers to *glaces firma* in the context of the Arctic, and equates permanent ice with land due to there being permanence and the ability for the ice to sustain habitation, but denotes its intermediate character by denying the claiming State rights to the subsoil and super-adjacent airspace. W.H. McConnell, "The Dispute on Arctic Sovereignty: A Canadian Appraisal" (1973), 25 *University of Florida Law Review* 465 at 483-491. See also Zuccaro, *supra* note 20, 411-412 and 414. Bernhardt suggests that the construction of Article VI, which appears to place ice shelves within the ambit of the Treaty together with land, implies that they ought to be treated as *glaces firma*. J.P.A. Bernhardt, "Sovereignty in Antarctica" (1975), 5 *California Western Journal of International Law* 297 at 308. Sahurie classifies ice shelves as *glaces firma* on the basis of the characteristics of the uses to which it may be put. Sahurie, *supra* note 20, 553. However, it is worth noting that a separate category for shelf ice is not an indication that it ought to be used as the baseline for the territorial sea. Joyner, while supporting an intermediate category for permanent ice, does not appear to support the use of it to place baselines. Joyner, *supra* note 15, 84-87.

27 Joyner notes that while using the rules for closing lines for bays has some appeal for smaller ice shelves, such a solution would be impractical given the vast size of the major Antarctic ice shelves, which are up to 450 miles wide at the coast. Joyner, *supra* note 25, 474-475. Sahurie notes that there is "wide support" in the literature against the drawing of baselines from ice shelves, although he does not concur with this view. Sahurie, *supra* note 20, 551. See also F. Orrego Vicuña and M.T. Infante "Le Droit de la Mer dans L'Antarctique" (1980), 84 *Revue Générale de Droit International Public* 340 at 344.

28 Joyner notes that the three largest ice shelves, the Ross, the Ronne and the Amery, are moving seawards at their seaward point 900 to 1300 metres per year. Joyner, *supra* note 15, 80 and see also Auburn, *supra* note 7, 36 and Joyner, *supra* note 25, 475.

29 Auburn proposes a system using the extent of the ice shelf at a known date, with an allowance of an arbitrary figure (50 miles) for seaward extensions. Auburn, *supra* note 7, 36-37.

30 Zuccaro, *supra* note 20, 419. Boyd indicates a combination of these schemes might be suitable for the Arctic. Boyd, *supra* note 8, 139. Joyner, however, disapproves of such a scheme stating "neither historic treatment of sea ice, nor current norms of international law, nor the requirements of jurisdictional practicability support the adoption of such an open-ended maritime jurisdiction." Joyner, *supra* note 25, 474.

Joyner also makes the point that sovereignty as an issue mitigates against the giving any status to the ice making up the Antarctic.³¹ He notes there is no similar problem for the Greenland ice sheet as Danish sovereignty is well recognised and was confirmed by the Permanent Court of International Justice in 1933.³² This argument reflects a line used by American publicists, that Antarctica cannot sustain a sovereignty claim, and therefore there is no entitlement to the maritime zones surrounding it.³³ From a claimant State's viewpoint, this argument lacks substance. The issue of sovereignty determines whether a valid claim to land can be made. If this is made out, then all other rights follow. The claimant State position is upheld by Article IV of the Antarctic Treaty which allows claims to be maintained without prejudice.³⁴ Why this should automatically impact upon the status of ice in Antarctic, but not the Arctic is not logical.

The whole situation is further complicated by the ice sheet itself. The great pressure of the ice on the continent has had the effect of depressing the land mass beneath. As such, large portions of the Australian Antarctic Territory, as well as Adelie Land and Dronning Maud Land, are in fact below sea level, although the mean altitude of the ice upon them may be in excess of 3000 metres. It is theorised that if the ice cap were removed, the land would rise as a result, but exactly how much of Antarctica would be above sea level through this "isostatic rebound" is difficult to assess.³⁵ If areas were unlikely to rise above sea level, in the event of the removal of the ice, then what would result is a vast continental archipelago rather than a continent.³⁶ If ice cannot be the subject of national claim, what is the status of land below sea level buried beneath the ice?³⁷ If this land is subject to claim (and clearly from State practice all the Antarctic Treaty System parties regard it as land) how does it differ from the seabed of the Ross Sea, for example, beneath the Ross Ice Shelf? In both cases it is earth at an altitude below sea level with a vast thick layer of ice over it.³⁸ Any widespread

31 Joyner, *supra* note 13, 28-29.

32 *Legal Status of Eastern Greenland* (Norway v Denmark) [1933] *PCIJ Series A/B No.53*.

33 See G.J. Mangone, "Defining the Indefinable: Antarctic Maritime Boundaries" in G.H. Blake (ed.), *Maritime Boundaries and Ocean Resources* (London: Croon Helm, 1987) 227 at 237-239; Peterson, *supra* note 7, 160; and B.H. Oxman, "Antarctica and the New Law of the Sea" (1986), 19 *Cornell Journal of International Law* 211 at 228.

34 See discussion below.

35 Auburn, *supra* note 7, 34 and Bernhardt, *supra* note 26, 306-307. Watts has noted that even if parts of the continent were to rise after removal of the ice, other parts would be inundated by the dramatic rise in sea levels that would accompany the melting, complicating an assessment as to which areas are land. Watts, *supra* note 22, 144.

36 Drewry notes that were isostatic rebound to take place, there would be "significant alteration" in the land areas that were currently (apparently) above and below sea level. D.J. Drewry, "The Antarctic Physical Environment" in G. D. Triggs (ed.), *The Antarctic Treaty Regime: Law, Environment and Resources* (Cambridge: Cambridge University Press, 1987) 6 at 9.

37 This question has been raised by S. Chopra, "Comment: The Legal Consequences of Antarctic Stations" in Wolfrum, *supra* note 12, 393-394. Bernhardt has suggested that such areas would best be treated as land. Bernhardt, *supra* note 26, 299. Bernhardt also correctly notes that attempting to use estimates of the effect of isostatic rebound to determine if particular parts of Antarctica would be above sea level, and hence land, would be most impractical. Bernhardt, *supra* note 26, 307-308.

38 In actual fact, the current mean altitude of parts of the floor of the Ross Sea beneath the Ross Ice Shelf is higher than parts of Antarctica proper.

melting of the ice sheet as a result of global warming may force a reappraisal as to exactly what is land and what is sea in Antarctica³⁹, although this eventuality is very much in the distant future.

Yet another difficulty caused by Antarctic ice concerns the ice shelves. Away from the grounding point, the ice shelves are separated from the sea floor by water. The status of these waters is also unclear.⁴⁰ Navigation (although very dangerous and somewhat pointless)⁴¹ may be possible, as it is in the Arctic Ocean, and if the ice above them is treated as land, are they to be regarded as underground waters, internal waters, or the territorial sea?⁴² If these waters are to be the territorial sea, presumably the baselines are drawn at the grounding point of the ice,⁴³ and as Mangone has suggested this is unsatisfactory.⁴⁴ Certainly it would be as impractical as using the rock edge of the continent, as it would also not be visible at the surface, and in addition, would be difficult to identify with precision beyond a zone of a few kilometres.⁴⁵

The two largest ice shelves, the Ross and the Filchner-Ronne are within the claimed sectors of a number of claimant States. The Ross Ice Shelf dominates the New Zealand Ross Dependency, while the Filchner-Ronne falls within the overlapping claims of Argentina, Chile and Great Britain. The Australian Antarctic Territory contains the Amery, Shackleton, Cook, Voyeykov, Moscow University and West ice shelves and the Dibble Iceberg Tongue, and the Ninnis and Mertz glaciers, all of which extend into the surrounding sea are within the Australian sectors.⁴⁶ The Amery Ice Shelf, the largest of these, faces out into Prydz Bay, which has been identified as a valuable fishery and potential mining area.⁴⁷ The undefined nature of the Norwegian claim over Dronning Maud Land and the

39 A related argument is canvassed by Joyner. He notes that the ice sheet itself might be characterised as frozen sea, and so all the continent, save the handful of ice free areas, would be effectively designated high seas. Given the nature of the ice sheet, that it is produced from fresh water precipitation in the continent's interior, and the awkward precedent this would set for the Arctic States, the suggestion can be regarded, as Joyner himself notes, as "highly suspect". Joyner, *supra* note 15, 196-197.

40 Rothwell, *supra* note 25, 70. Joyner suggests subglacial waters might be best considered an extension of the high seas, while the shelf above them should be treated as land. Joyner, *supra* note 11, 227-228. Such an approach would confuse the status of the underlying sea-bed, especially in the event of drilling from the surface of the ice.

41 Since navigation would be extremely dangerous, the practical problem would be unlikely to arise. Bernhardt, *supra* note 26, 310. Watts has indicated that for some purposes, notably storage of materials, these waters might be safer than other parts of the sea. Watts, *supra* note 22, 145.

42 Bernhardt suggests they may be treated as *res communis omnium*. Bernhardt, *supra* note 26, 310. Watts appears to prefer the view that the waters be treated as internal waters, but notes the usual jurisdictional and sovereignty problems would accompany such an approach. Watts, *supra* note 22, 145.

43 This seems to be the preferred view of Joyner, who suggests grounded ice can be treated as land, while ice shelves, which are not grounded, be treated as the high seas. Joyner, *supra* note 11, 228. He later indicates that straight baselines would be the most practical method. *Ibid.*, 230-231.

44 See transcript of "General Discussion" held at Kiel 7 July - 12 July 1987 reproduced in Wolfrum, *supra* note 12, 439-440.

45 The identification of the grounding line through remote sensing, through satellite imagery, has been successfully undertaken by the Australian Antarctic Division in conjunction with the National Mapping Division of Geoscience Australia.

46 This list was taken in part from Prescott, *supra* note 22, 94 and from Natmap NMP/85/109.2 produced by the Australian National Antarctic Research Expeditions (ANARE).

47 See Senate Standing Committee on Natural Resources, *The Natural Resources of the Australian Antarctic Territory*, Canberra, 1985

relatively small size of the French Adelie Land mean that the issue of the status of the ice shelves is of lesser importance to those States.

An additional concern, only tangentially relevant to the present discussion, is the status of ice mining in the Antarctic. At present, there is a moratorium on mining in Antarctica,⁴⁸ but not on exploiting the resources of the water column of an Antarctic EEZ. If an ice shelf is to be regarded as claimable or is equated with land, then the detachment of ice to transport north would seem to qualify as mining, while the catching of an iceberg,⁴⁹ which cannot be the subject of claim, would seem to be closer to fishing, yet provide the same commodity to the ultimate consumer.⁵⁰ The status of icebergs, whilst perhaps slightly clearer than that of the ice shelves in that they cannot be the subject of national claim,⁵¹ may be a problem in the future if demands for water and improved technology make iceberg harvesting a reality.⁵²

4. Arctic State Practice

State practice in relation to the status of ice is limited, which in the circumstances is not surprising given the relatively small number of States directly affected by ice-covered coasts. Such practice as does exist can be divided into two categories: that concerning Arctic States; and that concerning Antarctic claimant States. In relation to Arctic States, practice is difficult to identify, as it would appear that States have been reluctant to espouse identifiable positions. The following discussion will consider maritime delimitation in the Arctic and then examine the practice of individual States.

4.1 Arctic Delimitations

An excellent example of suggestive, if vague, practice can be seen the maritime boundary between Denmark and Canada with respect to the waters between Greenland and the eastern Canadian Arctic.⁵³ The agreement was concluded in late 1973, and while the two States had an

48 See Article 7 of the *Protocol on Environmental Protection to the Antarctic Treaty*: reproduced at 30 *ILM*. 1455 (1991). This ban has been the subject of domestic legislative response. For example, for Australia see the *Antarctic Mining Prohibition Act 1991* (Cth).

49 The harvesting of an iceberg within a declared EEZ of an Antarctic claim would also raise questions under Article IV of the Antarctic Treaty and of sovereignty.

50 Exactly what the status of iceberg mining might be and questions of ownership of icebergs are dealt with by Zuccaro (although not in the context of the EEZ). Zuccaro, *supra* note 20, 415-420.

51 Mangone suggests that icebergs and “ice islands” should be treated as if they were ships, being registered in the State whose nationals are occupying it. Mangone, *supra* note 12, 382-384 and see also Boyd, *supra* note 8, 123-124 and Watts, *supra* note 22, 146-147.

52 For an interesting discussion of iceberg utilisation, see P. Schwerdtfeger, “Antarctic Icebergs as Potential Sources of Water and Energy” in Wolfrum, *supra* note 12, 377 and the following discussion. From this discussion, it appears far more likely that icebergs would be harvested out at sea, possibly outside the Antarctic Treaty area, to a large extent making the hypothetical on this point extremely unlikely to ever raise difficulties in practice. See also Zuccaro, *supra* note 20, 407; P.W. Quigg, *A Pole Apart* (New York: McGraw-Hill, 1983) 103-106; and Joyner, *supra* note 15, 202-208.

53 *Agreement between the Government of the Kingdom of Denmark and the Government of Canada relating to the delimitation of the Continental Shelf between Greenland and Canada*, done at Ottawa 17 December 1973, entered into force 13 March 1974, reprinted in United Nations, *The Law of the Sea: Maritime Boundary Agreements 1970-1984* (New York: United Nations, 1987) 1.

ongoing disagreement over the ownership of a tiny outcrop called Hans Island, the bulk of the agreement was uncontentious and subject to little international comment.

While most of the waters in issue in the agreement are affected by ice, most are clear to navigation periodically during the summer months. However, some are affected by multi-year ice that has formed on land, and in the form of glaciers extending beyond the geological littoral. These features are found in the Kane Basin, the Hall Basin, the Kennedy Channel and the Robeson Channel. The agreement itself does not refer to ice, and delimits the boundary through a set of points, with no information provided as to how these points were arrived at. However, in the case of one significant feature on the Greenland coast, the Petermann Fjord, the adjacent boundary points appear to take into account the glaciers that obstruct large sections of the fjord. This would seem to indicate support from Denmark and Canada that a glacier extending into the sea is a relevant factor in maritime boundary delimitation.

Other Arctic delimitations appear to be based upon factors than geography, which means they are of limited utility in drawing conclusions concerning ice. The position of the potential maritime boundary between Spitzbergen (Svalbard) and Russia is an excellent example. Norway holds sovereignty over Spitzbergen by virtue of the Spitzbergen Treaty,⁵⁴ which was concluded as part of the post war settlement immediately after World War I. While Norway is the sovereign power in Spitzbergen, the islands are to remain demilitarised and other State parties to the Treaty have a right to exploit Spitzbergen for their own benefit.⁵⁵ The limits of the operation of the Treaty provide a large box, which Norway asserted should be the basis for the determination of the path of any maritime boundary between Spitzbergen and other territories. Russia appears to prefer a sector line based on the use of a combination of sector theory and the Spitzbergen box, while Norway prefers a median line. Neither would appear to be keen to be influenced by the presence of apparently permanent ice in the extreme north of the archipelago or in Franz Josef Land.⁵⁶

The maritime boundary between the United States and Russia is another example of an Arctic boundary where geography played little part in the delimitation.⁵⁷ The boundary follows the international dateline, which was created well before the existence of the EEZ or even the continental shelf within international law. There are three small areas where jurisdiction is transferred between the parties, but it is apparent the location of ice, temporary or permanent, played no role in the delimitation.

4.2 Russian Practice

54 *Treaty concerning the Archipelago of Spitsbergen*, done at Paris 9 February 1920, entered into force 14 August 1925, 2 *L.N.T.S.* 8.

55 See D.R. Rothwell, *The Polar Regions and the Development of International Law* (Cambridge: Cambridge University Press, 1996) 344-345.

56 *Ibid.*, 177-179.

57 *Agreement between the United States of America and the Union of Soviet Socialist Republics on the Maritime Boundary*, done at Washington on 30 November 1990, entered into force by subsidiary agreement 1 August 1994, reprinted in 30 *I.L.M.* 733 (1990).

Russian practice with respect to its adjacent Arctic waters has been somewhat quixotic, making it difficult to discern any easily identifiable position with regard to the status of ice. Prior to World War I, Czarist Russia did assert jurisdiction based on ice-covered coasts where territorial sea baselines were calculated from the edge of the ice front, at least with respect to its eastern possessions:

Where the extent of the seashore radius is not defined by special enactments or treaties, the present rules cover the coastal sea to a distance of three geographic miles⁵⁸ counting the line from the lowest ebb-tide, or the extremity of the coastal standing ice.⁵⁹

Jessup notes that this provision applied only to Czarist Russia's Pacific possessions, presumably because of some reluctance to expose the law to the close consideration of European powers. That this reluctance was based solely upon the law's reference to standing ice as the territorial sea basepoint is doubtful. A more plausible explanation is the use of a 12 nautical mile territorial sea in 1911. It should not be forgotten that until resolved at UNCLOS III, the breadth of the territorial sea had derailed two international conferences,⁶⁰ and been detrimental to the efficacy of a third.⁶¹ This conclusion is buttressed by the fact that after the Russian Revolution, the Soviet Government of the USSR issued a proclamation in similar terms. This proclamation did attract international protest from Britain, Japan and the United States, but these protests concerned the breadth of the sea, not the use of ice.⁶²

In more recent times, Russian concerns have focussed upon the Northern Sea Route (the North East Passage). The USSR had excluded vessels from passing along the Northern Sea Route in the years following World War II and during the Cold War various attempts by U.S. Coast Guard vessels to pass along it were rebuffed by the Soviets.⁶³ These attempts at passage were to add weight to the notion that the straits in the extreme north of the USSR were international straits, thereby providing foreign vessels a right of innocent passage.

In 1985, the USSR proclaimed territorial sea baselines along the northern coast to support the claim the Northern Sea Route was exclusively Russian.⁶⁴ Whether these baselines were intended to support a claim that the waters of the Northern Sea Route were historic waters or not is not clear, but the conclusion is a reasonable one.⁶⁵

58 12.02 marine miles or 20.87 versts.

59 Article 1 of the Russian law of 29 May 1911, reprinted in P.C. Jessup, *The Law of Territorial Waters and Marine Jurisdiction* (New York: Jennings, 1927) 27-28.

60 The Hague Conference in 1930, and UNCLOS II in 1960 both achieved virtually nothing, after becoming stymied by disagreement over the breadth of the territorial sea.

61 UNCLOS I was able to conclude the Convention on the Territorial Sea and Contiguous Zone in 1958, but the efficacy of the Convention was limited by its failure to establish a breadth for the territorial sea.

62 Jessup, *supra* note 59, 28.

63 See J.A. Roach and R.W. Smith, *United States Responses to Excessive Maritime Claims* (The Hague: Martinus Nijhoff, 1996) 328-329 and Rothwell, *supra* note 55, 204.

64 Soviet Legislation on Straight Baselines, 15 January 1985, reprinted in W.E. Butler, *The USSR, Eastern Europe and the Development of the Law of the Sea* (London: Oceana, 1987) C3, 1-2 and 21-56.

65 See the discussion in R.D. Brubaker, "Straits in the Russian Arctic" (2001) 32 *Ocean Development and International Law* 263 at 266.

The baselines have caused difficulties for Russia in relation to United States concerns over freedom of navigation, although even these have diminished with the opening of the North Sea Route to foreign vessel traffic.⁶⁶ The baselines themselves follow the general direction of the Russian coast, although they do link to the mainland in a number of places some of the larger islands. These baselines had the impact of apparently closing the straits between the islands and the mainland. It is not obvious from the Russian decree that any general practice can be deduced that basepoints can or ought to be based upon permanent ice, or that it adopts the older decrees where ice was used.⁶⁷ Nor is there any indication in the 1998 legislation adopted by the State Duma dealing with internal maritime waters that ice covered coasts ought to be treated separately.⁶⁸

In terms of the actual basepoints, there are two which appear to make reference to ice-covered features. These relate to the Polyarny Glacier,⁶⁹ at the northernmost coordinates of the basepoints for Severnaya Zemlya. Points 218 and 219 indicate the western and eastern extremities of the glacier are to be used as basepoints, and between, the low-water line is to be used. This would seem to be the only explicit use of an ice feature as a territorial sea baseline in modern practice.

The basepoints using the glacier are the northernmost proclaimed by Russia, and evidence suggests that conditions for navigation in the vicinity of that part of Severaya Zemlya are not dissimilar in many respects to Antarctic conditions. The Northern Sea Route passes to the south of the basepoints, and in the 1960s American icebreakers unsuccessfully attempted to pass to the north of Severnaya Zemlya. In addition, in 1965 the U.S. Coast Guard cutter *Northwind* actually rounded the northern tip of the archipelago by virtue of what Butler refers to as “extremely favourable ice conditions”.⁷⁰

The baselines in the 1985 decree appear to have been used in the submission by the Russian Federation to the Commission on the Limits of the Continental Shelf in December 2001.⁷¹ The submission specifies points for the outer limits of the continental shelf and is accompanied by charts that utilise the baselines referred to above. As such, the submission merely confirms existing Russian practice.

4.3 *United States Practice*

The United States takes a relatively conservative position with respect to Alaskan baselines in the Arctic using the low water mark as the territorial sea baseline. Even though the Alaskan coast can be free of ice in the summer months, an issue with respect to the status of ice was considered, albeit obliquely by the United States Supreme Court in 1997. In the case in issue, *United States v Alaska*

66 On this point, see Rothwell, *supra* note 55, 205-206.

67 T. Scovazzi, “The Baseline of the Territorial Sea: The Practice of Arctic States” in Oude Elferink and D.R. Rothwell, *supra* note 13, 69 at 82-83.

68 Federal Act on the Internal Maritime Waters, Territorial Sea and Contiguous Zone of the Russian Federation, 17 July 1998, reprinted from UN website <www.un.org>.

69 A search for information concerning the current state of this glacier failed to locate a feature going by this name. A glacier was noted to exist very close to the coordinates in the decree and was named Arktichesky Glacier. The two features may be one and the same.

70 W.E. Butler, *Northeast Arctic Passage* (Alphen aan den Rijn: Sijthoff & Noordhoff, 1978) 122-123.

71 See <http://www.un.org/Depts/los/clcs_new/commission_submissions.htm>.

(“*Dinkum Sands Case*”),⁷² a dispute arose between the U.S. Federal and Alaskan Governments over whether a small feature off the coast of Alaska known as Dinkum Sands was an island or not. The status of the feature would have had an impact upon the breadth of the territorial sea and thus determined what waters were under state or Federal jurisdiction. The seabed affected was potentially oil-bearing, and therefore both governments were keen to retain control.⁷³

Dinkum Sands itself was a feature consisting largely of gravel and ice. The ice increased in size over the winter, ensuring the feature was clear of the sea, but in late summer, after melting, Dinkum Sands was sometimes awash. It was clear that the feature was naturally having gravel clear of high tide at some parts of the year, but not at others. Since it consisted partly of ice, the question as to whether it was land, and thus could be an island, was directly in issue.

The matter was remitted to a Special Master, who appears to have proceeded on the assumption that a natural feature made up partly of ice could be land. However, the fact it was awash at high tide meant that it could not be an island. The Special Master’s findings were placed before the United States Supreme Court which reached a similar conclusion. The U.S. Supreme Court did not rule as to whether the presence of ice within Dinkum Sands prevented it from being an island, only that its elevation was determinative.⁷⁴ The case itself leaves the question open within United States domestic law as to whether a feature comprised in least in part of ice can generate a territorial sea basepoint.

4.4 Canadian Practice

Canadian practice in relation to its Arctic possessions has varied over time. Some Canadian sources indicate that the Government had considered the adoption of the sector theory, that is jurisdiction over all land and sea to the Pole, but this is not the current position taken by Canada.⁷⁵ Contemporary practice in relation to territorial sea baselines in the Arctic by Canada dates from 1985, when baselines around the Arctic Archipelago were proclaimed.⁷⁶ This proclamation was in response to the voyage of the *USCGS Polar Sea* and was an attempt by Canada to restrict foreign vessels from passing through the Northwest Passage.⁷⁷

While the baselines themselves are not particularly remarkable, in that they do not appear to rely upon permanent ice to describe them, the attitude of the Canadian Government to the enclosure of the area within the baselines is instructive. Foreign Minister Clark in 1985 stated:

72 117 *S.Ct* 1888, 138 *L.Ed* (2d) 231.

73 In 1979, the value of bids on the relevant area was US\$557,900,000.00. R. Orford, “Background on the ‘Dinkum Sands’ Case” <<http://www.gov.state.ak.us/press/pr062097.html>> 19 June 1997.

74 *Dinkum Sands Case* 117 *S.Ct* 1888, 138 *L.Ed* (2d) 231 at para. 3 per O’Connor J, with whom Stevens, Kennedy, Souter, Ginsberg and Breyer JJ joined, and was joined on this point by Rehnquist CJ, Scalia and Thomas JJ.

75 See this discussion below.

76 *Territorial Sea Geographical Coordinates (Area 7) Order of 10 September 1985, Canada Gazette*, Part II, 2 October 1985.

77 Statement of Mr Joe Clark, Minister for External Affairs, Statement No.85/49 of 10 September 1985 reprinted in Scovazzi, *supra* note 64, 78. See also Rothwell, *supra* note 55, 185 and D. Pharand, “Canada’s Sovereignty over the Newly Enclosed Arctic waters” (1987), 25 *Canadian Yearbook of International Law* 325 at 328-335.

Canada's sovereignty over the Arctic is indivisible. It embraces land, sea and ice. It extends without interruption to the seaward-facing coasts of the Arctic islands. These islands are joined and not divided by the waters between them. They are bridged for most of the year by ice. From time immemorial Canada's Inuit people have used and occupied the ice as they have used and occupied the land.⁷⁸

This statement is suggestive that the character of the ice between the islands assists in making a claim to the entire area, and the reference to "time immemorial" is suggestive a claim being made based on historic waters. This use of historic waters may assist claims in the Antarctic and the issue of what is necessary to substantiate such a claim is considered below.

It is also worth noting that the Canadian claim was the subject of an explicit protest by the United States, essentially for navigational reasons, rather than in relation to the status of ice.⁷⁹

4.5 *Norwegian Practice*

Norway has three sets of territorial baselines in the Arctic. The first are along the mainland coast and are the genesis of modern territorial sea baselines through the *Anglo-Norwegian Fisheries Case*.⁸⁰ The baselines there enclose the famous fjords along one of the most complex indented coastlines in the world. While significant for the role they played in international law, in the context of the status of ice the mainland baselines are not significant. The fjords, while ice-covered in places during the winter, are ice free in the summer, and Norway has made no use of ice in the formulation of the territorial sea baselines.⁸¹

The second Norwegian baselines are around the small island of Jan Mayen off the coast of Greenland. The delimitation of the maritime boundary between Greenland and Jan Mayen was undertaken by the International Court of Justice in 1993.⁸² The baselines are not affected by permanent ice, and were not the subject of comment by the Court in the case.⁸³

The third Norwegian baselines are around Svalbard, the archipelago around the island of Spitzbergen. The archipelago is deeply indented with fjords in places, and the baselines enclose these waters in a typical fashion. The U.S. Geographer has noted that charts of Svalbard show some glaciers projecting into the sea, and that baselines intersect these features, and so part of the glaciers are seaward of the baselines.⁸⁴ This would seem to indicate that Norway was not prepared to recognise the use of permanent ice as a basepoint, however it is worth noting the U.S. Geographer indicated the accuracy of the charts considered was such as to "cast doubt on the conclusion".⁸⁵

78 Statement of Mr Joe Clark, Minister for External Affairs, Statement No.85/49 of 10 September 1985 reprinted in Scovazzi, *supra* note 64, 78.

79 See Scovazzi, *supra* note 64, 79.

80 [1951] *I.C.J. Reports* 116.

81 Scovazzi, *supra* note 67, 70-75.

82 *Jan Mayen Case*, [1993] *I.C.J. Reports* 38, at 93.

83 Scovazzi, *supra* note 67, 75.

84 United States Geographer, (1972) 39 *Limits in the Seas*.

85 *Ibid.*, 4.

4.6 *Greenland Practice*

Denmark proclaimed baselines for Greenland in 1976 and 1980. They are rather generous in their proportions, with some segments as long as 80 miles, however they do not appear to rely upon any ice as a territorial basepoint. That said, Scovazzi notes that the lines have never been subjected to detailed analysis as to their validity.⁸⁶

5. **Antarctic State Practice**

If Arctic State practice concerning ice is rare, then that concerning Antarctic regions is even more limited, however there are some examples. Most appear to be statements made by Antarctic claimants in the period prior to the adoption of the 1959 Antarctic Treaty.

Early practice by Britain and New Zealand indicates that these States were of the view that the ice shelves in Antarctica were to be treated as land. In a letter from the British Foreign Secretary, Sir Austen Chamberlain, to the Norwegian Ambassador in London, on behalf of the British and New Zealand Governments, a view was put as to the status of the Ross Ice Shelf. Sir Austen stated:

The question whether, in general, ice barriers can be properly regarded as land for the purpose of measuring territorial jurisdiction is one of some difficulty, but his Majesty's Government in Great Britain and New Zealand are of the opinion that, in the case of an ice barrier such as the Ross Barrier which is to all intents and purposes, a permanent extension of the land proper, there is good reason for treating the Barrier as if it were terra firma.⁸⁷

This attitude can be contrasted with the explicit rejection of sector theory by Great Britain in 1938.⁸⁸

This was consistent with the view adopted at an Imperial Conference which discussed Antarctic matters in November 1926. A Committee convened to advise the Imperial Conference discussed the status of ice and formed the view that while for most purposes land was the appropriate baseline for measuring the territorial sea, "an extension might be made in the case of ice barriers, which are to all intents and purposes a permanent extension of land proper".⁸⁹ Participation in the Conference included Britain, and the then Dominions, including Australia, Canada, New Zealand, South Africa, Ireland and Newfoundland.

An even more generous attitude appears to have been taken by Chile. In a letter to the British Foreign Secretary from the Chilean Ambassador in November 1940, Chile indicated its Antarctic territory consisted of:

...all mainland, islands, islets, reefs and pack-ice, known or to be discovered, together with adjacent territorial seas, between longitude 53 degrees west of Greenwich and longitude 90 degrees west of Greenwich.⁹⁰

86 Scovazzi, *supra* note 67, 76.

87 Bush, *supra* note 12, Vol.3, 59.

88 *Ibid.*, Vol.3, 295.

89 *Ibid.*, Vol.2, 103.

90 *Ibid.*, Vol.2, 315.

While the meaning of “pack-ice” may lose a little in the translation from Spanish, it is clear that some ice was regarded by Chile as capable of possessing “adjacent territorial seas”. This would seem, at least, to equate with a view that permanent ice features have the same status for the purposes of territorial claim as land, and therefore can generate their own territorial sea.

Australia has, except insofar as a view can be drawn from Imperial practice, avoided making any statement on the status of ice for the purpose of generating territorial sea baselines. A direct question on this point was asked of the Minister for Foreign Affairs in the Commonwealth Parliament in 1997 but the answer given was equivocal.⁹¹

One matter that needs clarification concerns Article VI of the Antarctic Treaty.⁹² Article VI provides that the Treaty area is to be south of 60° South including all ice shelves, but that nothing in the Treaty is to prejudice the rights of any State with regard to the high seas in those southern latitudes. Since the Treaty obviously deals with Antarctic lands, the reference to ice shelves appears to indicate that Article VI is limiting the Treaty Area to land and the ice shelves, the latter of which can be differentiated from the sea.⁹³ While it is appealing to think there is implicit recognition in the Antarctic Treaty for ice shelves to have a special status, this view does not sit well with American publicists as discussed above. As such, the better view is that nothing in Article VI is inconsistent with ice shelves having special status.

6. Sector Theory

One often cited international response to the acquisition of territory in the polar regions is the “sector theory”. This approach has its origins in the northern hemisphere and owed its support almost entirely to Canadian and Russian publicists. It essentially involved the claiming of land and sea areas in a “pie-shaped” wedge having its point at the pole, and following meridians down to a point at a particular parallel, usually the Arctic Circle. All of the waters in the wedge were regarded as holding special status and as part of the sovereignty of the Arctic State.

Exactly what the status of waters in an Arctic sector might be has never been clearly articulated by any Arctic States. At present, it is apparent that no Arctic State claims a sector of northern seas as subject to its sovereignty, but an argument may be made that the two largest Arctic States have utilised the sector theory to support their positions on the negotiation of maritime boundaries. In the Beaufort Sea, Canada has asserted the boundary between its EEZ and that of the United States ought to be along what amounts to the sector line.⁹⁴

91 *Hansard*, Australian House of Representatives, 8 November 1977.

92 Article VI of the Antarctic Treaty states:

The provisions of the present Treaty shall apply to the area south of 60° South Latitude, including all ice shelves, but nothing in the present Treaty shall prejudice or in any way affect the rights, or the exercise of the rights of any State under international law with regard to the high seas within that area.

93 Van der Essen, *supra* note 20, 233.

94 See generally Rothwell, *supra* note 55, 171-173 and 288-291.

It has occasionally been asserted that a form of sector theory has been applied to the Antarctic, and this view has received implicit support from Antarctic mapmakers who have traditionally drawn pie-shaped sectors starting from the South Pole and extending to 60 degrees South.⁹⁵ In fact, this assertion is misleading, as none of the Antarctic claimants asserted sovereignty over the waters out to 60 degrees South, and it might be argued that such an assertion would be inconsistent with their obligations under Article VI of the Antarctic Treaty.⁹⁶ One of the claimants, Norway, has deliberately left its claim undefined to avoid any attribution to it of the sector theory in respect of Dronning Maud Land. This is essentially because Norway is concerned that any support it gives sector theory in the south will be used against it in the northern hemisphere. Accordingly, were any Antarctic claimant to assert jurisdiction over maritime areas based on the sector principle, it could be expected that, in addition to objections of the States who do not maintain any Antarctic claims, Norway would also object.

While the formal claim of a sector may not be appropriate in the delimitation of Antarctic maritime boundaries, the use of the meridians as maritime boundaries may have some application. Such a method would avoid any consideration of the status of adjacent shelf ice or require the proclamation of territorial sea baselines. By claiming a wedge of land and sea, the claimant State would not need to indicate where its maritime jurisdiction began and ended. Ice could expand and recede without altering the coastal State's sector, nor its jurisdiction.

There are compelling reasons why the sector theory can be rejected as useful in dealing with ice-covered coasts. First, there is no consistent assertion of it by States in the international community, even by the two States that are labeled as its principal protagonists -- Russia and Canada. Second, there is no evidence that any Antarctic claimant has ever asserted sector-based jurisdiction, even though the depiction of their claims, and in the case of Argentina and Chile, the calculation of their eastern and western extremities, appear to be sector-like. Third, the consensus that exists between the five mutually recognising claimants would be lost were Australia to assert a sector claim, as for the reasons noted above, Norway would reject the claim. Fourth, the assertion of an Australian sector would jeopardise the Australian rejection of the Philippines "Treaty Limits", where the Philippines claims jurisdiction over all waters inside a large "box" based upon the description of the archipelago used by the United States and Spain in the peace treaty of 1898.⁹⁷

7. International Cases

There are a small number of international maritime boundary cases, so it is not surprising that there is a dearth of international cases dealing with ice-covered coasts. While some coasts which have

95 Some maps of the British Antarctic Territory (then the Falkland Islands Dependency of Graham Land) depict the boundaries indicated in the revised Letters Patent which established British dominion over the possession. This was a most irregularly shaped wedge.

96 Even before the advent of the Antarctic Treaty, Britain was not prepared to use its Antarctic sector as the basis of a claim over ocean areas. In separate correspondence in 1914, the Foreign Office advised the Royal Geographical Society and the editor of the *Sheffield Daily Independent* that the use of the sector was to compensate for "the present state of geographical knowledge" not being "in a position to define the exact territory claimed as British in the Antarctic". Reproduced in Bush, *supra* note 12, Vol.3, 263-264.

97 See generally, H.J. Buchholz, *Law of the Sea Zones in the Pacific Ocean* (Hamburg: Institute of Asian Affairs, 1987), pp. 45-47.

been the subject of international litigation are affected by ice during the winter, for example Newfoundland and St Pierre et Miquelon or parts of the Gulf of Maine, there is little in the way of assistance in the present circumstances. The ice in these regions is entirely seasonal, and is lost in the summer, making its use in delimitation of limited impact.

There are two cases that may be of relevance. The first is the *Anglo-Norwegian Fisheries Case*,⁹⁸ which established in international law that territorial sea straight baselines were a legitimate practice in certain circumstances. The second case is the *Jan Mayen Case*, where the International Court of Justice was obliged to consider the coasts of the small Norwegian island of Jan Mayen and the inhospitable coast of eastern Greenland.⁹⁹

While of relevance in the context of historic waters,¹⁰⁰ and of significance in the establishment of the use of territorial sea baselines, the *Anglo-Norwegian Fisheries Case* is of limited utility in relation to the status of ice. While the extreme northern portions of Norway are beset by ice in winter, it is apparent that Norway does not possess permanent ice along its mainland coast. As such, the International Court did not make comment upon the status of ice, nor was it raised by the parties as an issue.

In the *Jan Mayen Case*, the International Court of Justice was obliged to consider a delimitation between two far northern possessions of Norway and Denmark. While Jan Mayen is small, and essentially ice-free for a portion of the year, the eastern coast of Greenland that faces it is beset with ice year round. That said, the ice along the coast of Greenland is not of the same character as that in the Antarctic. The baselines used by Denmark and by the Court in the case were not constructed using points based on ice, but rather on promontories and small islets. The baselines asserted by Denmark do not appear to have been in dispute and were accepted by the Court with no specific comment on their legality.¹⁰¹

The Court did refer to the existence of ice and noted that it did need to be considered in the context of the delimitation. However, the ice was not considered for geographical reasons, but rather economic factors. It was accepted by the Court that the presence of pack ice rendered much of the Greenland coast, and even areas well out to sea, unable to be fished.¹⁰² This lack of use was relevant given the existence of the stocks which were being exploited. However, the Court made no use of this circumstance in its delimitation of the boundary, essentially because there was no evidence that the ice prevented exploitation in the winter, as the stock was apparently only in the region during the summer season.¹⁰³

98 [1951] *I.C.J. Reports* 1.

99 [1993] *I.C.J. Reports* 38.

100 See below.

101 It is difficult to conceive that the International Court would have brushed over the use of ice basepoints, given that it would have been an entirely novel circumstance.

102 The Danish pleadings note that “the northern segment of the eastern coast of Greenland is permanently covered by compact ice”. Pleadings of Denmark, *Jan Mayen Case*, 42. These were quoted by the Court without acknowledgment. [1993] *I.C.J. Reports* 38 at 44.

103 *Ibid.*, at 72.

It is also apparent from the pleadings that the coast of Greenland in issue in the case is largely ice covered all year round. Baselines were used by Denmark, but neither the judgment nor the pleadings make it clear whether permanent ice features are used as basepoints. The lack of contention on the issue is suggestive that only terrestrial features are used, as using ice may have been an avenue for Norwegian attack. However, given Norway accepted the basepoints used, it was not open to the Court to review their validity, as the Court's function was merely to delimit a boundary opposable between the two States.¹⁰⁴ Enquiry of the Danish and Norwegian Governments as to their attitudes to the Greenland baselines in the *Jan Mayen Case* might therefore be a useful activity.

8. Possible Approaches to Baselines and Ice-Covered Coasts

8.1 *Unstable Coasts and Article 7*

One problem in claiming that permanent ice can generate territorial sea baselines is the transitory nature of ice. Even though ice shelves and glaciers do not disappear from season to season, they do change in character and extent. Ice shelves and glaciers gradually move, or flow, and as noted above, periodically calve, as they reach outward. This sees them slowly advance over a period of years, or decades, and then have large sections break off, so the whole process can begin again.

In the ordinary course of events, such a dynamic change does not occur with land, where alterations in configuration may take millennia rather than decades. Nevertheless, the LOS Convention does deal with coastlines which are unstable and prone to change. Article 7(2) of the LOS Convention provides:

Where because of the presence of a delta and other natural conditions the coastline is highly unstable, the appropriate points may be selected along the furthest seaward extent of the low-water line and, notwithstanding regression of the low-water line, the straight baselines shall remain effective until changed by the coastal State in accordance with this Convention.

This provision potentially could be useful in dealing with an unstable ice coast, yet it must be viewed with caution. The United Nations Office for Ocean Affairs and the Law of the Sea noted in 1989 that Article 7(2) was essentially subordinate to Article 7(1), which would mean it could only apply where “the coastline is deeply indented or cut into, or if there is a fringe of islands along the coast in its immediate vicinity”.¹⁰⁵ Further, Article 7(2) was limited in its operations to deltas, which were defined as “a tract of alluvial land enclosed and traversed by the diverging mouths of a river”.¹⁰⁶ These would seem to exclude Antarctica, although it should be noted that the statements of the United Nations Office for Ocean Affairs and the Law of the Sea are not in any way legally

104 *Ibid.*, at 65.

105 United Nations Office for Ocean Affairs and the Law of the Sea, *Baselines: An Examination of the Relevant Provisions of the United Nations Convention on the Law of the Sea* (New York: United Nations, 1989) 23-25.

106 *Ibid.*, 47.

binding as regards interpretation of the LOS Convention. Rothwell documents some of the uncertainty of the operation of Article 7 and considers its possible application.¹⁰⁷

8.2 Riverine Baselines and Ice

If an argument cannot be sustained that the Antarctic ice shelves are land for the purposes of determining territorial sea baselines, then an alternative argument exists. If the ice sheet/shelf is a natural body of water flowing to the sea, albeit in a frozen state, perhaps it can be equated to a river. A river mouth can be closed under Article 9 of the LOS Convention without reference to any maximum length. Further, there is no restriction that the river's flow must be uninterrupted, so the provision can apply to rivers which freeze up in the winter time.

On a small scale glacier, and on a larger scale, portions of the ice sheet have the same composition as a river and flow slowly towards the sea. Their limits can be as easily indicated in geographical terms as a river in more temperate climes.

In reality, it would be difficult for a State to argue a shelf on an ice coast was essentially a river, and therefore ought to fall under Article 9. As noted above, there was little discussion of Arctic issues, and no discussion of Antarctic issues at UNCLOS III, which would mean that the *travaux préparatoires* would not assist such a conclusion being made. Given such material is available for use to assist in the clarification of treaties,¹⁰⁸ it is submitted that Article 9 would not be suitable for use to justify baselines along ice shelves.

8.3 Average of Ice Front as a Baseline

One solution which could simplify matters would be to determine the extent of the EEZ in the Antarctic by fixing its outer limit instead of trying to determine its inner limit. Specifying latitude lines at a distance of approximately 200 nautical miles from the edge of the ice would remove doubt as to the extent of the EEZ, as it directly affected shipping, fisheries or mining. The territorial sea represents a zone close to a State's coast which partly acts as a buffer between the State and the high seas. The State's high level of sovereign control is because of the territorial sea's proximity to the coast. It is submitted then that the appropriate point for the territorial sea to be measured from is the edge of the ice or land coast. If this coast moves, then so ought the territorial sea. The uncertainty caused by the movement of the coast is not necessarily the harbinger of great practical difficulties. The average extent of the ice coast over a given period of years could be used, as it appears in the case of most maps of Antarctica.

While useful from a practical standpoint, and the subject of some academic support from Green,¹⁰⁹ Auburn,¹¹⁰ Zuccaro¹¹¹ and Kaye,¹¹² there is no international practice or agreement upon which such

107 D.R. Rothwell, "Antarctic Baselines: Flexing the Law for Ice-Covered Coastlines" in Oude Elferink and D.R. Rothwell, *supra* note 13, 49 at 53-54 and Rothwell, *supra* note 55, 270.

108 Article 32, *Vienna Convention on the Law of Treaties*, done at Vienna 22 May 1969, entered into force 27 January 1980, *Australian T.S. 1974 No.2*.

109 J. Green, "Antarctic EEZ Baselines: An Alternative Formula" (1996), 11 *International Journal of Marine and Coastal Law* 333.

110 Auburn, *supra* note 7.

a mechanism could rest. It would be entirely novel, but given the unique geographical situation, not inappropriate. Once baselines were proclaimed, they could be used in the same fashion any baselines are used generally within the law of the sea.

9. Attitudes of International Publicists

While the references in the above discussions indicate the views of international publicists, it is perhaps appropriate to review in tabular form their attitudes to the status of ice. A majority of publicists favour the view that ice that possesses a permanent character should either be equated to land, or treated as *sui generis* and capable of generating territorial sea baselines. Of this latter category, many publicists prefer a method of determining the baselines by using an average of known sea fronts of the ice, or using the unstable coast provisions of Article 7 of the LOS Convention. There is no support for pack ice, or ice formations of a temporary nature, being capable of generating any maritime zones. At best, where such features are occupied, they might be construed as similar in status to a ship, but even in that circumstance there is no consensus.¹¹³ The Table included in the Appendix summarises the views of individuals.

Were a common position to be distilled, it would be that *glaces firma* should be treated as land, or a *sui generis* situation where the ice, while not land, did generate territorial sea basepoints. Notably those who reject the notion that ice can generate territorial sea basepoints are Americans, while the positions of support are non-Americans. There would not seem to be a consensus on how such basepoints should be calculated, although there is a preference for the use of the actual ice front, or its average position, largely for ease of calculation.

10. Historic Waters in International Law

Article 10 of the LOS Convention applies to bays and establishes detailed rules when a bay may be enclosed by a territorial sea straight baseline. Article 10(6) provides a general exception to these rules stating:

The foregoing provisions do not apply to so-called “historic” bays, or in any case where the system of straight baselines provided for in Article 7 is applied.

Given the difficulties in finding an acceptable method of applying the Law of the Sea Convention to the Antarctic continent in the context of baselines, the mechanism of an historic waters claim has the substantial advantage that existing rules have no application. As such, an entirely novel regime could be adopted without having to do more than assert historic rights in accordance with international law.

As noted above, historic waters, which are most often considered in the context of the smaller subset of historic bays, are recognized in international law as a legitimate exception to the rules applicable to territorial sea baselines. They require certain criteria to be met: first a

111 Zuccaro, *supra* note 20.

112 S.B. Kaye, *Australia's Maritime Boundaries* (Wollongong: Centre for Maritime Policy, 1995) 210-211.

113 On the jurisdictional issues surrounding various Arctic “ice islands” which were temporarily occupied, see generally Mangone, *supra* note 12, 382-384 and see also Boyd, *supra* note 8, 123-124 and Watts, *supra* note 22, 146-147.

littoral State would have to make and maintain a long-standing assertion of sovereignty over the waters in question, and second the international community would have to acquiesced to such claim. While these criteria are broadly settled, what bays or other waters may qualify is highly contentious.¹¹⁴

10.1 Application of Historic Waters to Ice-Covered Coasts

In applying the regime of historic waters to an ice-covered coast, there are several considerations to note. First, it can be assumed that such a claim would be made in the alternative to a claim based upon permanent ice being equated to land. The ice must be treated as a form of historic waters, as if it were to be treated as land there would be no more compelling need to claim historic waters around an ice coast than any other coast elsewhere. If anything, such a claim would be made more difficult by the lack of human activity along ice-covered coasts.

Second, the ice itself, if it is given the same status as the sea generally, must be permanent. This is because the nature of the claim will depend, paradoxically, on natural rather than human activity. An historic bay possesses its status because a coastal State has taken steps to exclude foreign vessels or activities, and this exclusion has been acquiesced to by third States. Along an Antarctic coast, such efforts by claimant States are rare, because of the dearth of human activity, and the relatively tiny presence of the claimant State. Rather, the agency that excludes human activity from the ice covered waters is the ice itself. No ship has ever navigated the waters of the Ross, Ronne or Amery ice shelves. Human activity in those areas can only take place on the same basis as it does in the terrestrial environment. Effectively, the ice has functioned in the same way as an extremely efficient naval or water police force.

Third, the historic nature of the claim might be made out by the longevity of the ice. Ice that only existed on a seasonal basis would be unsuitable to found a claim to historic waters, as such ice is navigable for part of the year, and types of vessel exist that pass through such waters. No icebreaker, no matter how powerful, has the capacity to plough through an ice shelf hundreds of metres thick and thousands of years old.

There are difficulties in the application of historic waters to an ice-covered coast. First, there appear to be no clear claims by Antarctic States to such waters in this fashion. It is necessary for a coastal State asserting possession of historic waters to make the claim public and open to the scrutiny of other States. The lack of clarity in the claims made have the effect of preventing a legitimate assertion of historic rights.

The situation is not as poor as it might seem. Normally, if a claim to historic waters is made, it is based upon efforts and evidence of efforts to exclude the vessels of other States. For permanent ice,

114 For some further discussion see International Law Commission, "The Juridical Regime of Historic Waters, including Historic Waters" [1962] *Yearbook of the I.L.C.* Vol. II, 6; M.P. Strohl, *The International Law of Bays*, (The Hague: Nijhoff, 1962); L.J. Bouchez, *The Regime of Bays in International Law* (Leyden: Sijthoff, 1964); D. Pharand, "Historic Waters in International Law with Special Reference to the Arctic" (1971), 21 *University of Toronto Law Journal* 1; G. Westerman, *The Juridical Bay*, (Oxford: Clarendon Press, 1987); and L.F.E. Goldie, "Historic Bays in International Law - An Impressionic Overview" (1984), 11 *Syracuse Journal of International Law and Commerce* 211.

the historic exclusion is one *par excellence*, as no one has ever penetrated the great ice shelves other than by terrestrial means. As such, were a claim to be made, past activities would not appear to prejudice it. Even if not based on natural considerations, it is clear that both Canada and Russia have employed the doctrine to assist in substantiating their baselines in the Arctic.¹¹⁵

Another difficulty relates to likely reaction to an historic waters claim. The United States, in addition to refusing to recognise any Antarctic claimant's title, has maintained a programme of review of all maritime claims published around the world. While not directly interested in the areas Australia has claimed as historic bays on the South Australian coast, the United States felt obliged to protest the validity of these claims.¹¹⁶ This was probably to ensure possible acquiescence to the Australian claims was not used against them in respect of other more strategically important areas, such as the Gulf of Sidra. Accordingly, the United States would almost certainly protest any historic waters claim along an ice-covered coast on the basis that not to do so might have unfortunate consequences, particularly given their attitude to Russian and Canadian practice with regard to the North East and North West Passages. United States protest might well encourage other States to make similar protests, which would in turn diminish the likely validity of the historic waters claim.

11. Impact of the Antarctic Treaty

Currently, all the States active in the Antarctic, or who maintain claims to territory in the Antarctic or sub-Antarctic regions, are parties to the Antarctic Treaty. The Treaty itself was negotiated after the success of the International Geophysical Year in 1957-58, when the States active in the Antarctic had engaged in scientific research and exploration in a spirit of co-operation that greatly contrasted with the attitudes prevalent during the Cold War, then at its height. The Treaty hoped to continue this spirit of co-operative research for the future.¹¹⁷

A significant obstacle that the negotiators of the Treaty faced was the position of those countries who had claimed parts of Antarctica. There were (and still are) seven States claiming territory in Antarctica,¹¹⁸ and three of these States claimed overlapping parts of the continent.¹¹⁹ In addition,

115 See Scovazzi, *supra* note 64, *passim*.

116 The U.S. protest is reproduced at (1994), 15 *Australian Yearbook of International Law* 485.

117 Auburn notes that Article IV, the "cornerstone of the Treaty", had its origins in the "Escudero proposal of 1948 and the IGY gentlemen's agreement". Auburn, *supra* note 7, 104. For a background to the proposal suggested by Professor Julio Escudero Guzman, see Bush, *supra* note 12, Vol.2 383-384. See also G.D. Triggs, *International Law and Australian Sovereignty in Antarctica* (Sydney: Legal Books, 1986) 134-136; Sahurie, *supra* note 20, 301-302; and also Watts, *supra* note 22, 125-126.

118 The claimants are (with the year the claim was advanced and its extent): Australia (1933; 45°E-136°E & 142°E-160°E south of 60°S); New Zealand (1923; 160°E-150°W south of 60°S); France (1924; 136°E-142°E south of 60°S); Norway (1939; 20°W-45°E northern and southern limits undefined); United Kingdom (1908 & 1917; 20°W-80°W south of 60°S); Argentina (1943; 25°W-74°W south of 60°S); and Chile (1940; 53°W-90°W no northern limit). Drawn from P.J. Beck, "The Antarctic Resource Conventions Implemented: Consequences for the Sovereignty Issues" in A. Jorgensen-Dahl & W. Østreg (eds), *The Antarctic Treaty System in World Politics* (London, 1991) 229 at 231. It should be noted that the precise extent of the Argentine claim and the northward reach of the British claim have changed since their respective claims were first advanced.

119 The claims of Argentina, Chile and the United Kingdom overlap. Both the British and Chilean sectors include a small sliver of territory not claimed by the other two States, while the Argentine sector lies entirely within the British Antarctic Territory.

while not recognising any claims, both the United States and Soviet Union have taken steps to be able to claim parts of Antarctica in the future, should they wish to do so.¹²⁰ The United States, for example, considered a claim to what remains the only unclaimed piece of Antarctica, and to all or part of the Antarctic Peninsula,¹²¹ a region already the subject of British, Argentine and Chilean claims. Attempts to internationalise the Antarctic, or create a condominium, had received little support from claimant States and attempts to have the International Court of Justice determine ownership of even part of the continent were unsuccessful.¹²² To reach a solution, negotiators needed to placate claimants that no activity pursued in their sector by other States would diminish their claim, whilst assuring non- and rival claimants that nothing they did in Antarctica would accord recognition to another State's claim.

A solution was reached and is embodied in Article IV of the Antarctic Treaty. It is also found in the related international agreements and arrangements dealing with the Antarctic that have developed over the last thirty or so years, and are generally referred to as the Antarctic Treaty System ("ATS").¹²³ The text of Article IV is crucial in considering potential maritime zones generated by Antarctic lands.

1. Nothing contained in the present Treaty shall be interpreted as:
 - (a) A renunciation by any Contracting Party of previously asserted rights of or claims to territorial sovereignty in Antarctica;
 - (b) A renunciation or diminution by any Contracting Party of any basis of claim to territorial sovereignty in Antarctica which it may have whether as a result of its activities or those of its nationals in Antarctica or otherwise;
 - (c) Prejudicing the position of any Contracting Party as regards its recognition or non-recognition of any other State's right of or claim or basis of claim to territorial sovereignty in Antarctica.
2. No acts or activities taking place while the present Treaty is in force shall constitute a basis for asserting, supporting or denying a claim to territorial sovereignty in Antarctica or create any rights of sovereignty in Antarctica. No new claim, *or enlargement of an existing claim*, to territorial sovereignty in Antarctica shall be asserted while the present Treaty is in force. (emphasis added)

120 Bush, *supra* note 12, Vol.1 58. For a general discussion of Russian/Soviet activity in the Antarctic, see B.A. Boczek, "The Soviet Union and the Antarctic Regime" (1984), 78 *American Journal of International Law* 834 and also C. Spencer, "The Evolution of Antarctic Interests" in S. Harris (ed.), *Australia's Antarctic Policy Options* (Canberra: Australian National University, 1984) 113 at 125-126.

121 See Bush, *supra* note 12, Vol.3 468-469 and the map and outline of potential claims pp.420-428; Auburn, *supra* note 7, 66-6; and C. Macquiera, "Antarctica Prior to the Antarctic Treaty: A Political and Legal Perspective" in Polar Research Board, *Antarctic Treaty System: An Assessment* (Washington DC: National Academy Press, 1986) 49 at 50.

122 *Antarctica Cases (United Kingdom v Argentina; United Kingdom v Chile)* [1956] *I.C.J. Reports* 12. The Court ruled that it was unable to deal with the dispute without the consent of the respondent States.

123 In addition to Article IV itself, the compromise it embodies is found in the following: Article I, *Agreed Measures for the Conservation of Antarctic Fauna and Flora*, reprinted in Bush, *supra* note 12, Vol.1 146; Article 1(1), *Convention for the Conservation of Antarctic Seals*, done in London, 1 June 1972, reprinted in Bush, *supra* note 12, Vol.1 248; and Article IV, *Convention on the Conservation of Antarctic Marine Living Resources*, done at Canberra 20 May 1980, entered into force 7 April 1982; reprinted in 19 *I.L.M.* 841 (1980).

The first part of Article IV effectively neutralises any Antarctic Treaty State's actions in respect of recognition (or non-recognition) of claims. It permits States to carry out research and staff bases in disputed territory, without jeopardising their own claims or implicitly giving recognition to others.

The second part of Article IV is crucial however to any potential offshore jurisdiction. This part has the effect of "freezing" claims while the Treaty is in force. It nullifies the value of any acts performed by a claimant State in its territory in support of its sovereignty after 23 June 1961¹²⁴ when the Treaty commenced, and expressly prohibits new claims or the enlargement of existing claims. Questions have been raised as to whether the proclamation of an EEZ, or the extension of the territorial sea, amounts to an "enlargement of an existing claim".¹²⁵

There are a number of approaches to this last question. First, if "enlargement of an existing claim" is to be taken at its most literal, then a claim must remain as it did in 1961. As such, if the claimant State had only proclaimed a 3 mile territorial sea as at 23 June 1961, then 3 miles is the greatest width possible.¹²⁶ Since no claimant State (with the possible exception of Chile, which had declared a 200 nautical mile territorial sea around all its territories, including its Antarctic lands in 1947¹²⁷) had declared an EEZ in 1961, as the concept did not exist, then no territory on the Southern continent can generate an EEZ, because to do so would be a new claim or an enlargement of an existing claim.¹²⁸ The USSR has taken this view of the effect of Article IV(2),¹²⁹ as has, at least at one point in time, New Zealand with regard to its own Ross Dependency.¹³⁰

In the context of Antarctic baselines, or claims of historic waters, the issue concerning Article IV is placed in issue. While a proclamation of an EEZ represents an assertion of nothing more than sovereign rights, the proclamation of baselines, or the declaration of historic waters does mean that areas are placed under the direct and unfettered sovereignty of the coastal State. This might therefore fall afoul of Article IV as it could be seen to be an enlargement of an existing claim.

The response to this argument is essentially the same as that raised for the EEZ. The assertion of rights under international law should not fix that law in 1961, but permit additional rights to accrue

124 Bush, *supra* note 12, Vol.1, 106.

125 On this point see Kaye, *supra* note 112, 194-199.

126 This is the view of Watts. He indicates that while a new EEZ or continental shelf may be proclaimed off Antarctica, no extension to the territorial sea can be made by virtue of Article IV. This is because the EEZ and shelf regimes are merely "a collection of jurisdictions" and do not amount to sovereignty in the way the territorial sea does. A.D. Watts, "The Antarctic Treaty as a Conflict Resolution Mechanism" in Polar Research Board, *supra* note 121, 65 at 69.

127 This is the "Santiago Declaration". It applied to all Chilean territory, including territories claimed by Chile in the Antarctic. F. Orrego Vicuña, *The Exclusive Economic Zone* (Cambridge: Cambridge University Press, 1989) 3 and D.J. Attard, *The Exclusive Economic Zone in International Law* (Oxford: Clarendon Press, 1987) 5.

128 Orrego Vicuña and Infante, *supra* note 27 at 344 and J. Crawford and D.R. Rothwell, "Legal Issues Confronting Australia's Antarctica" (1992), 13 *Australian Yearbook of International Law* 53 at 81-82.

129 See the text of a Soviet reply made on 18 July 1978 to a British inquiry reproduced in Bush, *supra* note 12, Vol.1, 260.

130 Such appears to be the view of the New Zealand Minister for Foreign Affairs in a statement to the New Zealand Parliament made on 23 August 1977, reproduced in Bush, *supra* note 12, Vol.3, 96.

as they become available. The intention of Article IV was to prevent the claiming of additional land, not immediately adjacent ice.¹³¹ Indeed, this is supported by Article VI, which sets the limit of the Antarctic Treaty as all the land and ice shelves south of 60 degrees South. This suggests both that ice shelves are special in character, and presumably can fall within the jurisdiction of the claimant States.

12. Conclusions

A number of conclusions can be drawn from the preceding material. First, there would seem to be a consensus that ice in Antarctica resting upon the earth, without sea water in between, may be treated as land. With the exception of some discussion by Oxman,¹³² no publicist seeks to argue that the ice sheet of the continent is not susceptible to claim. Nothing in international practice suggests that international law has any difficulty in accommodating the notion that ice resting upon land that is itself below sea level should be treated as any different to terrestrial features that have a mean altitude below sea level that are themselves remote from the sea. This would indicate that the use of a grounding line as a territorial sea baseline has international support, if it were to be adopted.

However, a majority of international publicists, and to a limited extent international practice,¹³³ also supports the more expansive notion that the edge of ice would be an effective territorial sea baseline. Such a baseline would have the advantage of being the easily ascertainable, being readily calculated from remote sensing imagery.

It is important to note that what international support does exist for using the edge of ice does not support all types of ice in all situations. While publicists are not always as clear as they might be in describing ice phenomena, it would seem there is a complete consensus that ice formed in the ocean, as a result of the freezing of the sea, would not be suitable for the drawing of baselines. What support there is seems to coalesce around the ice being produced upon land, and through natural forces, the ice has extended outwards. This ice is typically of great age, in the order of thousands of years, and will be attached to features which, under any formulation, could be regarded as land. Should this ice break-away, the preferred view appears to be, it loses its status as generating maritime zones, even if it should subsequently ground itself on the sea floor.

Using the edge of the ice in ice shelves would also seem to be consistent with the Law of the Sea Convention. Article 5 of the Convention sets the low water mark as the appropriate point for territorial sea baselines in the absence of using any other method. It was clearly not within the contemplation of the negotiators that baselines could be calculated from a point that could be

131 For example, the 1908 and 1917 Letters Patent for the British Antarctic Territory, 1933 Letters Patent for the AAT and the 1923 Letters Patent for the Ross Dependency each claim all land within the sectors indicated.

132 Oxman has doubts over whether any portion of the continent can be claimed by virtue of Article 121 of the Law of the Sea Convention, as it would not be capable of human habitation. Oxman, *supra* note 33, 228. There is no support elsewhere for this argument, nor does it appear consistent with international practice.

133 Most notably the *Dinkum Sands Case*, *supra* notes 72-74; Russian baselines in the extreme north around Severnaya Zemlya, *supra* note 69; and the statements by the United Kingdom on behalf of itself and New Zealand, *supra* note 87.

potentially hundreds of kilometres from the sea, which would certainly be the case in some areas were a more restrictive baseline were used. Certainly, there is nothing in the Convention which is inconsistent with the employment of ice shelves in setting territorial sea baselines.

The movement of the ice shelves over time, including their retraction or collapse, and slow advances should not preclude them from being used as basepoints. Article 7 clearly envisages that coasts which are subject to fluctuation and change can be accommodated with baselines, and it is also clear that any coast regardless of its perceived permanence changes from time to time.

Whether basepoints are specified from time to time, and retained in the intervening periods regardless of the extent limits of the ice, or whether the day to day position of the ice is used is a matter which could be the subject of some debate. The preference in the Convention for the production of charts and/or coordinates for the United Nations of State parties' territorial sea baselines would seem to indicate setting basepoints from time to time is the preferable option. This would also have the advantage of giving certainty as to the extent of the territorial sea, EEZ and continental shelf on any given day, rather than having to adduce evidence of the extent of the ice edge on any given day. The basepoints could be changed periodically to conform with the physical conditions, or possibly an average could be selected, and remain in place permanently. Any waters landward of these baselines, whether under the ice, or exposed, would be internal waters.

Use of the ice shelves to indicate the edge of the territorial sea would also not fall afoul of the Antarctic Treaty. Article IV prohibits new claims from being made or existing claims being enlarged. The same arguments used by claimants to defend the extension of the territorial sea from 3 to 12 miles or to proclaim an EEZ off their territories are equally applicable here. In addition, the reference to the Treaty Area in Article VI including ice shelves would seem to support the position that using the shelves in this fashion is not a new claim.

It is worth noting that any action by any Antarctic claimant with respect to its territorial sea baselines in Antarctica will result in protests from some States. It is likely that in addition to protesting the proclamation of baselines, the United States will also protest their extent. Given the restrictive view the United States has taken over many years of efforts by States to extend their territorial reach over ocean areas, this is to be expected. Other non-claimants may also protest, but these protests may be directed more at what are perceived as efforts to buttress individual States' claims to Antarctic territory rather than any fundamental difficulty in the use of ice in this fashion. For example, it would almost inevitable that Russia would protest the assertion of territorial sea baselines around the Ross Dependency, yet such a protest would be unlikely to go to the legal merits of the baselines themselves, given Russian practice.

In conclusion, what is apparent is the Law of the Sea Convention is ill-suited to resolving the issue of permanent ice. The failure to resolve these issues for reasons of convenience of negotiation during UNCLOS III has caused little difficulty to the present, since ice-covered regions are remote from most human activity, and an overwhelming proportion of these coasts are in the Antarctic, which has seen limited activity in terms of maritime jurisdiction. However, as the deadline for the submission of extended continental shelf data draws closer, the claimant States will be obliged to consider their maritime practice around their Antarctic territories and the issue of territorial sea baselines will become a live one. While a preference for the use of the ice edge is apparent in

international practice and commentary, how the issue may be definitively resolved remains to be seen.

Appendix

Table

Publicist	Status of Ice	Notations
Auburn	Baseline capable	Average of ice front
Bernhardt	Same as land	
Boyd	Baseline capable	Average of ice front
Green	Baseline capable	Ice grounding line
Joyner	<i>Sui generis</i>	Not for generating maritime zones although note recent literature ¹
Kaye	<i>Sui generis</i>	Article 7 unstable coasts or average of ice front
Mangone	Baseline capable	Generating TS and CZ not EEZ or CS
McConnell	Same as land	
Pharand	Same as land	
Prescott	Same as land	
Rothwell	<i>Sui generis</i>	Article 7
Sahurie	<i>Sui generis</i>	Recognises “wide support” for ice generating zones but does not concur
Theutenberg	Sea	
Watts	Same as land	
Zuccaro	Baseline capable	Average of ice front