

The Future of Baselines as the Sea Level Rises: Guidance from Climate Change Law

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Structured Abstract

Article type: Research paper

Purpose—As the future legal treatment of states' baselines is put into question by the rise in the global mean sea level, scholars have considered the issue from the perspective of the law of the sea, but not from the perspective of climate change law. This article seeks to examine the role that climate change law can play in determining the future of baselines.

Design, methodology—The article examines the issue as it has been considered to date by summarizing the literature and assessing the arguments for and against keeping current baselines. It then describes the primary climate change conventions and their relevance to the issue.

Findings—The article demonstrates that consideration of climate change law injects vital new information into the debate on the future legal treatment of baselines. It finds that the legal obligation created by climate change law for states to take actions that mitigate the effects of climate change precludes states from acting on the premise that sea level changes are driven by natural forces alone—a premise that prevailed when UNCLOS was negotiated and which underlies arguments based on UNCLOS alone that baselines are ambulatory.

Practical implications—The information in the article introduces the relevance

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of climate change law into the scholarly and diplomatic debate on the future legal treatment of baselines.

Originality, value—The subject of this article is unique and not available in other published work. It provides insights that can prove essential in the debate on the future of baselines.

Keywords: baselines, climate change law, sea level rise, UNCLOS

I. Introduction

The anticipated submergence of low-lying territory in many countries as a result of the rising sea level will be an unprecedented event in the history of sovereign states. One of the challenges it generates for international law concerns what should happen to the baselines from which territorial waters, contiguous zones and exclusive economic zones are measured. The outcome will determine future spaces of maritime sovereignty and sovereign rights around the world, ultimately affecting the interests of all states.¹ Examination of the issue by two specialized committees of the International Law Association (ILA) yielded different views about how to proceed.

As a dynamic event, the sea level rise will progressively disrupt the logic that underlies existing international rules for setting baselines. As a global event, a multilateral response is justified. In this regard, there are several paths in international law by which a unified practice among states can be achieved: (1) by multilateral agreement on new norms, an approach suggested by the work of the ILA committees; (2) by the emergence of new norms through the unilateral and grouped actions of individual states, an approach that may be influenced by decisions that some states have already taken²; and (3) by the adjudication of contentious issues that produce legal precedents.

A multilateral response could involve any or all aspects of the situation—baselines, maritime zones or sovereign rights. It could involve their nature, the norms that apply to them or both. The range of options is therefore quite broad. With respect to baselines, there are two possible orientations: changing their locations to preserve their compliance with existing legal criteria for baseline determination, or changing the criteria to allow the baselines to legally stay where they are. Deciding that baselines should be ambulatory to reflect evolving physical realities would shrink the legal dimensions of many states' land territory and shift their maritime zones inward, and may cause low-lying island states to cease to exist unless special provisions for them are made.³ On the other hand, keeping the baselines in place would create inequalities in states' relationships with maritime areas—the extent of submerged land would vary by state, leaving the baselines of some further out to sea than the baselines of others. Nonetheless, either option can serve as a conceptual core around which a future territorial order is developed.

To date, there has been no consensus among scholars about which course of action would be more appropriate under international law. In reviewing the literature, it is observed that the future of baselines has consistently been considered,

quite naturally, from the perspective of the law of the sea. However, the UN Convention on the Law of the Sea (UNCLOS),⁴ which elaborates the rules for establishing baseline locations, neither anticipates the rising sea level nor offers unambiguous guidance for situations that might put baseline locations into question once they are set.

It may, therefore, be useful to consider the legal treatment of baselines from an additional perspective. The body of international climate change law that has developed after UNCLOS was concluded in 1982 seems particularly appropriate. It is directly relevant to sea level rise because it creates the obligation for states to curtail a primary cause of it: emissions of “greenhouse gases” that are responsible for increasing temperatures globally. Climate change law consists of a series of multilateral agreements of which the most notable are the UN Framework Convention on Climate Change (UNFCCC) of 1992,⁵ the Kyoto Protocol to the UNFCCC of 1997⁶ and the Paris Agreement of the Conference of the Parties to the UNFCCC of 2015.⁷

Prior to the Paris Agreement, climate change law was considered by some scholars to hold little prospect for mobilizing states to act on issues relating to the sea. The UNFCCC regime had become “so mired down as to seem incapable of effective action” on such matters, according to David Freestone, who wrote: “I do not see it as a forum for overt policy formation or for the crystallization of customary international law rules on the regime of islands, on the evolution of coastal baselines, or on the very existence of states inundated by climate change induced sea level rise.”⁸

Indeed, there has been no discernible effort to seriously consider climate change law in the discussion on baselines since the Paris Agreement. Nonetheless, the obligation it creates will affect the points where the land of coastal and island states come into contact with the sea—precisely the points designated by UNCLOS in its rules for determining baseline locations. Thus, climate change law not only has a legitimate role but arguably an essential one in shaping the future legal treatment of baselines. Using it as a source of guidance also allows us to place more firmly into the discussion a fundamental principle of international law that was arguably considered without sufficient emphasis while UNCLOS has been the sole basis for considering the fate of baselines: that of the stability of state boundaries.

II. Current Rules for Establishing Baselines

A state’s territory has multiple components, but land is the fundamental one. It comprises the geographic reference from which the state extends its authority into adjacent aspects—water, air and subsoil. Although the supremacy of land developed into an underlying tenet of international law in the past few centuries, it was not always explicit or clear until modern times.⁹ Today it is unquestioned. The International Court of Justice affirmed it in the *North Sea Continental Shelf Cases* (1969) by asserting that “the land is the legal source of the power which a State may exercise over territorial extensions to seaward.”¹⁰ The writings of modern legal scholars are equally unambiguous in declaring that “(t)he land dominates the sea ... by the inter-

mediary of the coastal front,”¹¹ or that “all maritime entitlements derive from the land.”¹² Texts of contemporary legal instruments, including UNCLOS, treat the dominant status of land as being so evident that it does not require stating.¹³

The seaward rights of states exist in internationally agreed zones, measured outward from baselines where the land meets the sea. In these zones, states may exercise varying degrees of sovereign authority. The first zone, extending up to 12 nautical miles outward, contains the territorial sea where the state with adjacent land has sovereignty while ships from other states have the right of innocent passage.¹⁴ The next band outward is the contiguous zone, with a limit of 24 nautical miles from the baseline; in this zone a state may enforce its customs, fiscal, immigration and sanitary laws and regulations.¹⁵ Finally, there is the exclusive economic zone (EEZ), which may go out as far as 200 nautical miles from the baseline. A state may also have exclusive economic rights in the area that is 200–350 nautical miles out from its baseline or up to 100 nautical miles beyond the isobath marking a depth of 2,500 meters if the continental shelf, as a “natural prolongation” of the state’s land territory, extends that far from the land. In the EEZ, a state has sovereign rights over natural resources in the water, on the seabed or in the subsoil, as well as rights to engage in other economic activities,¹⁶ although special rules apply to the portion that is further than 200 nautical miles outward.¹⁷

In describing these zones and the associated rights in detail, UNCLOS also establishes the criteria for determining the baselines from which they are measured. A “normal baseline” is “the low-water line along the coast as marked on large-scale charts officially recognized by the coastal State.”¹⁸—put another way, “the line of intersection of the sea and the coast at low tide.”¹⁹ The low-water line shown on charts can reflect various datum measures, of which common ones are the lowest astronomical tide,²⁰ mean low-water springs,²¹ mean lower low water²² and mean sea level.²³ Baselines along coastlines where there are various natural and constructed features are subject to special rules; features accommodated this way include coral reefs,²⁴ deeply indented coastlines and coasts fringed by islands (where straight baselines may be drawn),²⁵ mouths of rivers,²⁶ bays,²⁷ constructed port facilities,²⁸ and areas of land that are above water at low tide but submerged at high tide.²⁹ Specific baseline rules also apply to archipelagic states.³⁰

III. Views of Scholars and the ILA Committees

In the first decades after UNCLOS was concluded, it was assumed by numerous scholars that as the sea level rose, baselines would eventually be forced to change on the basis of its provisions,³¹ even if this was not always considered a desirable occurrence in view of the multitude of implications it would have for states and the global maritime economy. Clive Schofield, for example, argued in 2010 that:

there is a growing need for a departure from the traditional norm of ambulatory normal baselines and consequently shifting maritime jurisdictional limits in the interests of providing marine users with stability, clarity and certainty.³²

The weight of state practice also fostered the suggestion that baselines are ambulatory, according to Julie Lisztwan, who adds that even states which have taken the position that official published charts should prevail over physical changes when determining baselines would not always hold that view firmly (the United Kingdom, while negotiating its maritime boundary with Belgium, abandoned the use of a point used in setting its baseline when the feature eroded and became submerged while the negotiations were underway).³³ Lisztwan further notes that the weight of legal authority appears to favor baselines having an ambulatory nature; the International Law Commission, for example, indicated during the drafting of the 1958 Convention on the Territorial Sea and Contiguous Zone that deviations arising between published baselines and actual coastlines can be grounds for legally challenging the baselines.³⁴

The ILA committees that have more recently considered baselines and their rules in relation to future situations have been venues for examining the issue in a concentrated and comprehensive manner. With their members including numerous scholars whose writings on baselines and the rising sea level had constituted much of the prior literature on the subject, their work is extremely valuable. The first was the Committee on Baselines under the International Law of the Sea, created in 2008 in the context of widespread public acceptance of the scientific community's conclusion that sea level would rise as a result of climate change. Among its objectives was to assess whether the law pertaining to normal baselines was in need of clarification or development.³⁵ In 2012 the committee decided that normal baselines should be considered in law as ambulatory:

The Committee concludes that the existing law of the normal baseline applies in situations of significant coastal change caused by both territorial gain and territorial loss. Coastal states may protect and preserve territory through physical reinforcement, but not through the legal fiction of a charted line that is unrepresentative of the actual low-water line.³⁶

[...]

The Committee concludes that the normal baseline is ambulatory, moving seaward to reflect changes to the coast caused by accretion, land rise, and the construction of human made structures associated with harbour systems, coastal protection and land reclamation projects, and also landward to reflect changes caused by erosion and sea level rise. Under extreme circumstances the latter category of change could result in total territorial loss and the consequent total loss of baselines and of the maritime zones measured from those baselines. The existing law of the normal baseline does not offer an adequate solution to this potentially serious problem.³⁷

The committee took the view that “the loss of a State’s territory to rising sea levels is not primarily a baseline or law of the sea issue” but a broader issue entailing numerous concerns of international law that warranted a dedicated examination by a separate committee. This led the ILA to create in 2012 the Committee on International Law and Sea Level Rise, which did not blindly accept the Baselines Committee’s conclusion. During a 2016 working session of the new committee, co-rapporteur Freestone “said first and foremost the Committee will not second guess the findings

of the Baselines Committee but it is considering advantages of ambulatory or fixed baselines or of fixed outer limits of maritime zones as well as how such lines might be fixed *de lege ferenda*.³⁸

The Committee on Sea Level Rise took the approach “that coastal States maintain [...] their existing baselines, established in accordance with the LOSC,³⁹ in their current position, [...] notwithstanding physical changes in coastline and basepoints brought about by sea level rise.”⁴⁰ It justified this on grounds that “the interests of the international community would at this stage not be best served by a proposal undermining existing negotiated and established maritime boundaries.”⁴¹ It took the view that its proposals should “seek to minimize proposed changes in settled law of the sea” as well as “facilitate orderly relations between States and, ultimately, the avoidance of conflict.”⁴² The ILA, on the basis of the committee’s report, adopted a resolution in 2018 in which it

ENDORSES the proposal of the Committee that, on the grounds of legal certainty and stability, provided that the baselines and the outer limits of maritime zones of a coastal or an archipelagic State have been properly determined in accordance with the 1982 Law of the Sea Convention, these baselines and limits should not be required to be recalculated should sea level change affect the geographical reality of the coastline.⁴³

As the committee weighed its position on the future legal treatment of baselines, multiple arguments were presented both in favor of and against keeping the existing baselines intact. The arguments in support of retaining the current baselines generally reflected the convenience of avoiding certain procedures that altered baselines would require, the broader legal convenience of keeping the existing regime, or a sense that states should not pay a disproportionate legal price relative to their role in the cause of climate change:

— The coastal States’ charts that define their baselines and their maritime zones would remain in force and not require the reassessment and recharting that might be required by the effects of ongoing sea level change; alternatively, other appropriate means of defining baselines could be employed such as the use of geographical coordinates rather than the use of nautical charts, something that is already evident from State practice;

— Coastal States would retain their existing entitlements to maritime zones of the widths prescribed by the LOSC, notwithstanding the loss of territory and/or basepoints;

— Perverse incentives to artificially preserve baselines and basepoints that might otherwise become invalid under the current law of the sea regime would be removed;

— The current exclusive authority (sovereignty) of the coastal State over its territory would be maintained, recognizing that the mix of the land and internal waters within that area has shifted;

— The status quo regarding the allocation of national maritime zones and com-

mon spaces under the law of the sea that has occurred on the basis of the existing law—assuming no sea level rise—would be maintained;

- Continuation of existing obligations under international law with respect to particular ocean areas would be safeguarded;
- Coastal and island States would be shielded from these adverse impacts of climate change, to which few contributed.⁴⁴

By contrast, the arguments against keeping current baselines unchanged were grounded mainly in legal reasoning that implied the continued adequacy of the UNCLOS baseline rules relative to the ability of affected states to adapt to the consequences of applying them:

- If a coastal State were to maintain a chart showing a legal baseline which no longer reflects the position of the actual low water mark, then this would be a legal fiction and, according to the conclusions of the Baselines Committee that, as a matter of international law, the normal baseline is ambulatory, a breach of that rule;

- Coastal States may find themselves with offshore areas of territorial sea or even EEZs where the physical features which generated those maritime zones have submerged or because of rising sea level have ceased to retain the characteristics required by the LOSC to be fully-entitled “islands” under Article 121(1);

- Coastal States would still need to update their navigational charts, even though the charts representing the legal baseline might remain the same; otherwise the legal fiction might pose risks to safety of navigation. The ongoing updating of charts is, however, an existing obligation for the purposes of ensuring safety of navigation, as IHO guidelines suggest charts should always show the limits of the territorial sea and the EEZ, based on the previously drawn baseline;

- It could be argued that by maintaining existing baselines coastal States were preventing high seas areas from expanding, and preventing territorial sea areas from becoming EEZ, and this might be seen as contrary to a global public interest, in that these new high seas areas would be subject to high seas freedoms (some of which apply within the EEZs too).⁴⁵

These arguments reveal a certain imbalance in their character. Those supporting the view which became the committee’s recommendation—that current baselines should not be altered—focused on issues other than the future viability of the UNCLOS baseline rules. Without the identification of legal deficiencies in their application going forward, the integrity of the rules might be deemed to be preserved. Given that laws generally are not revised in the absence of a demonstrable need, this can be viewed as a weakness. Additionally, the argument that certain states merit favored treatment due to their physical situations or past actions is not easily aligned with the principle that states are equal under international law regardless of their circumstances or their actions relative to the law, as the states that may have contributed more substantially to climate change were not necessarily violating any legal norms.

Of the arguments on both sides that were significant enough to warrant inclusion in the committee’s report, what is notable is that none derived from climate

change law. Yet the agreements that comprise climate change law collectively provide a legal rationale for the committee's recommendation to keep the existing baselines intact.

IV. The Climate Change Agreements

The term "climate change" in international law generally reflects the definition contained in the UNFCCC:

a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.⁴⁶

Climate change caused by human activity is evidenced by a rise in the earth's temperatures—the phenomenon known as "global warming." The activity in question consists of emissions of "greenhouse gases," which the UNFCCC defines as "gaseous constituents of the atmosphere, both natural and anthropogenic [human-produced], that absorb and re-emit infrared radiation."⁴⁷ Among the principal greenhouse gases are carbon dioxide, methane and nitrous oxide.⁴⁸ According to the Intergovernmental Panel on Climate Change (IPCC), the increase in carbon dioxide emissions has been due primarily to the use of fossil fuels in transportation, electricity generation and industry, while the increased methane and nitrous oxide emissions derive mainly from agricultural activity.⁴⁹

Temperatures recorded around the world since the late 19th century provide strong and abundant evidence of global warming,⁵⁰ with climate models unable to explain the trend without taking into account human activity.⁵¹ The IPCC has concluded that "(m)ost of the observed increase in global average temperature since the mid-20th century is very likely due to the observed increase in anthropogenic GHG [greenhouse gas] concentrations."⁵²

The rise in the global mean sea level is a consequence of two factors that directly result from global warming: thermal expansion of the water, in which the volume of the world's seawater becomes greater as its temperature rises⁵³; and the melting of land-based ice (the ice sheets that cover areas such as Greenland and Antarctica, as well as glaciers) that add water to the seas.⁵⁴ Scientists disagree on the relative contribution of each factor to the rising sea level but concur that both are involved.⁵⁵ Agreement also exists that the sea level rise is "one of the more certain impacts of human-induced climate change."⁵⁶ According to the IPCC, the acceleration of the rise is evidenced by sea level data that "indicate a transition in the late 19th century to the early 20th century from relatively low mean rates of rise over the previous two millennia to higher rates of rise," with the acceleration likely to have continued since then.⁵⁷ Satellite data show a further acceleration in the sea level rise since 1993.⁵⁸

The UNFCCC stipulated that parties to the convention "should take precautionary measures to anticipate, prevent or minimize the causes of climate change

and mitigate its adverse effects.”⁵⁹ Article 4 specified the actions to be taken in this regard:

Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks⁶⁰ of all greenhouse gases not controlled by the Montreal Protocol,⁶¹ and measures to facilitate adequate adaptation to climate change⁶²;

Promote and cooperate in the development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol in all relevant sectors, including the energy, transport, industry, agriculture, forestry and waste management sectors⁶³;

Each of these Parties shall adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs. These policies and measures will demonstrate that developed countries are taking the lead in modifying longer-term trends in anthropogenic emissions consistent with the objective of the Convention, recognizing that the return by the end of the present decade to earlier levels of anthropogenic emissions of carbon dioxide and other greenhouse gases not controlled by the Montreal Protocol would contribute to such modification [...].⁶⁴

Although the UNFCCC commitments were non-binding, the Kyoto Protocol created binding targets that obliged developed countries to reduce greenhouse gas emissions during 2008–2012 to levels that would cause the global average emission level to be 5 percent below the level of 1990.

Individual States’ commitments to reductions are differentiated with a view to meeting the 5 per cent overall target: the European Community and all its member States are committed to 8 per cent reductions, the United States to 7 per cent and Japan and Canada to 6 per cent. New Zealand, the Russian Federation and Ukraine will stabilize emissions at 1990 levels, whilst some States negotiated an actual increase in emissions.⁶⁵

This was to be followed by further binding commitments for reductions during 2013–2020 as specified by the Doha Amendment to the protocol,⁶⁶ although as of this writing (May 2019) the Doha Amendment had not entered into force due to an insufficient number of instruments of acceptance.⁶⁷ To some extent this became a moot issue as the Paris Agreement of 2015 mandated stronger and faster reductions in greenhouse gases; it created obligations for all states to establish national processes that would contribute to limiting the global temperature rise to less than 2°C above pre-industrial levels by the end of this century and to take action toward further limiting the rise to less than 1.5°C.⁶⁸

Importantly, the Kyoto Protocol and the Paris Agreement require reductions in the actual emissions of greenhouse gases rather than reductions in their rates of increase. Thus, they are meant to restore a circumstance that had existed in the past, obliging states to limit greenhouse gas emissions to levels that correspond to an ear-

lier climatic situation. However, this situation is neither stated nor described. Similarly, there is no identification of a desirable global mean sea level.

These are not the only gaps. The UNFCCC mandates that the “adverse effects” of climate change should be mitigated, and while it does not define what constitutes an “adverse effect” it is evident from the attention being given to the rising sea level that it counts as such. Also, by not defining “mitigate,” the agreements leave the term to cover a range of actions from slowing the rate at which the sea level rises to causing the sea level to decline. In view of this haziness, it is vital to know whether a sea level decline can result from the obligations created by climate change law.

Scientific studies have determined that if greenhouse gas emissions are halted or if their concentration in the atmosphere is stabilized, the global mean surface air temperature would stabilize or decline slowly but the sea level would keep rising for a time because it does not react in lockstep with the timing and magnitude of emissions.⁶⁹ The IPCC anticipates that the “(s)ea level rise will continue beyond 2100 even if global warming is limited to 1.5°C [above pre-industrial levels] in the 21st century.”⁷⁰ Nonetheless, the thermal expansion of sea water as a key factor in the sea level rise “is in principle reversible.”⁷¹ A stabilization or decline in air temperatures would also stabilize or reverse the melting of polar ice caps and glaciers, the other factor in the sea level rise. The speed of the process may be influenced by actions other than reducing greenhouse gas emissions alone, notably geoengineering—“the deliberate large-scale intervention in the earth’s natural systems to counteract climate change”—which can involve techniques to manage solar radiation or to remove carbon dioxide from the atmosphere.⁷² Geoengineering options deemed by scientists to be capable of reducing the sea level include aerosol injections of sulfur dioxide into the stratosphere and the more costly placement of a network of mirrors in space.⁷³ In one scientific modeling exercise, “an immediate reduction in insolation [solar radiation] produces dramatic lowering of sea level for several decades.”⁷⁴

V. Applying Climate Change Law to Baselines

Considered in a broad sense, the international agreements to mitigate the adverse effects of climate change are founded on a recognition that these effects can be slowed or halted or reversed. The agreements serve as declarations of this recognition by giving it legal substance: they create international obligations for states to act toward achieving specified mitigation objectives. In doing this, it can be argued, they preclude states from acting on the premise that the adverse effects of climate change cannot be mitigated. The agreements also serve as recognition by states that without deliberate action to alter the human causes of climate change, its adverse effects—including sea level rise—would continue to worsen indefinitely.

At the time UNCLOS was negotiated, sea level changes that would be significant enough to affect baseline locations were envisioned as events that (1) occur through entirely natural causes; (2) occur very gradually, often measured in geologic time;

and (3) could entail either rising or falling water levels.⁷⁵ It can be posited that the prevailing knowledge about sea level variations—that they were natural but extremely slow—allowed UNCLOS to be elaborated without addressing whether baselines should be ambulatory or fixed; resolving this would have been essential when the baseline rules were drafted if a changing sea level had been viewed as an active factor in their functioning. The argument that baselines are ambulatory thus emerged in the context of sea level changes on a global scale being perceived as vague future events: baselines would be adjusted either landward or seaward in line with the earth’s long-term physical evolution.⁷⁶ Despite a sense that ambulatory baselines would yield “an unsatisfactory result” in the event of an extreme sea level change,⁷⁷ the notion became dominant in interpretations of UNCLOS.⁷⁸

In the years since UNCLOS was elaborated, more has been learned about the causes and dynamics of sea level variations. This has spurred climate change law to develop on the basis of knowledge that the current sea level rise (1) has human activity as its primary cause; (2) is occurring more quickly and with a greater magnitude than would be possible from natural forces; and (3) cannot be slowed, halted or reversed without deliberate human intervention. Understanding the pivotal role of human involvement gives sea level variations a previously unknown degree of predictability—and controllability. Climate change law recognizes that sea level rise can be managed, and the obligations it creates for states are the agreed means. This removes a contextual pillar from the ambulatory baseline argument: the slow, naturally occurring rises and falls in the sea level that the UNCLOS negotiators had envisaged.⁷⁹ As Davor Vidas remarks, UNCLOS “was tailored to the geographical circumstances of its own time, not the ones yet to come.”⁸⁰ Climate change law signals that a naturally occurring fall in the sea level is no longer envisaged, which means that ambulatory baselines would, in practice, apply only to a continual rise—unless there is human intervention. This in itself does not render the notion of ambulatory baselines incompatible with international law, but, as we shall see below, a managed reversal of the rise can bring the ambulatory baseline notion into collision with one of its key principles: that of the stability of state boundaries.

This is because the concept of ambulatory baselines implies the necessity of legal thresholds to establish when baseline locations should be altered, to ensure a just and orderly process that occurs with some uniformity⁸¹ and to avoid potential conflicts⁸² as states are inclined to use UNCLOS baseline rules as a tool for maximizing their territorial claims.⁸³ Climate change law has rendered such legal trigger points problematic: with the sea level rise, legal thresholds could require states to move their baselines landward while the states create circumstances that can oblige them to move the same baselines seaward. Avoiding this conundrum by limiting how frequently the same baseline may be altered⁸⁴ would undercut the very notion of ambulatory baselines by embedding within it the legitimate presence of baselines that are fixed for periods during which sea level changes of baseline-altering magnitudes may occur. Conversely, declining to limit the frequency of baseline changes could lead to the same baseline being altered at short enough intervals to conflict with the principle of stable state boundaries.

This principle is among the most important in international law because of its contribution to the maintenance of international peace and security.⁸⁵ It stipulates that states' territorial dimensions, once agreed with other states, are not changeable unless further agreements or exceptional circumstances occur. In the case of coastal and island states, their dimensions are determined partly or completely by maritime boundaries established through baselines. "Once created in accordance with international law, a boundary is protected and assumes finality and permanence,"⁸⁶ writes Malcolm N. Shaw, who refers to the principle as "an overarching postulate of the international legal system" that shields states from disruptive challenges to their territorial integrity.⁸⁷ The International Court of Justice has affirmed that an established boundary cannot fulfill the objective of achieving stability and finality "if the line so established can, at any moment, and on the basis of a continuously available process, be called in question [...]."⁸⁸

The global outcome of states' compliance with climate change law will not be known for some time, whether that be decades, a century or several centuries. However, the prospect that the sea level will recede and submerged land will reappear well within the lifetime of states is something that can be anticipated as the result of the obligations it creates. This can create an exception to the compatibility of ambulatory baselines with international law: baseline alterations would arguably violate the stable boundaries principle if they occur in response to physical changes in the land/sea interface that can be reasonably presumed to be temporary due to the mitigation of the adverse effects of climate change. The ambulatory baselines argument might be supported by the view that UNCLOS entails a sort of advance agreement on maritime boundary changes, but this can be challenged on grounds of vagueness with respect to specific boundaries. Meanwhile, climate change law discourages the presumption that a higher sea level will have the permanence necessary to justify new baseline boundaries, thereby reinforcing the position of the ILA Committee on Sea Level Rise that existing baselines should stay intact.

Climate change law was not created with the express intent to supersede UNCLOS, but it suggests that states have replaced the premise that sea level may rise or fall through natural causes with one that considers the rising sea level as a human-induced process that natural forces alone cannot alter. This makes the universality with which climate change law has been embraced by states particularly relevant to this discussion, as states do not assume new binding legal obligations lightly—they do so after assessing and accepting the need for them. As of May 14, 2019, the Paris Agreement had 197 signatories, of which 185 had ratified the agreement.⁸⁹ This makes it one of the most broadly endorsed international agreements in history,⁹⁰ building on the high acceptance of preceding climate change accords.⁹¹ By way of comparison, the number of states approving the Paris Agreement is substantially greater than the number that have approved instruments which establish various *jus cogens* norms, such as the Convention against Genocide (151 parties)⁹² or the Convention against Torture (166 parties).⁹³ More important for this discussion is the comparison with UNCLOS, which had 157 signatories and 168 parties.⁹⁴

While UNCLOS may have spawned the debate about whether baselines should

be ambulatory or fixed, the law of the sea is not the sole aspect of international law that can be tapped in resolving it. This becomes visible when climate change law is taken into account. The Paris Agreement and other instruments of climate change law do not specifically address baselines, but they can be transformative in terms of guidance. In this respect, they inject vital new information to consider—the state obligations described herein, their object and purpose, and the scientific knowledge underpinning them—that can strengthen both the legal and logical arguments in support of fixed baselines.

Notes

1. Determinants of the locations of maritime zones and the high seas affect legal rights pertaining to all states, not just coastal states (navigation, fishing, etc.), as well as derivative state interests (transportation, trade, etc.). See, e.g., Ellen Hey, William T. Burke, Doris Ponzoni and Kazuo Sumi, *The Regulation of Driftnet Fishing on the High Seas: Legal Issues*, Legislative Study 47 (Rome: Food and Agriculture Organization, 1991), p. 6; Roda Verheyen, *Climate Change Damage and International Law: Prevention Duties and State Responsibility* (Leiden: Martinus Nijhoff, 2005), p. 195.
2. The Republic of the Marshall Islands reiterated its declaration of maritime zones in 2016, and in 2018 eight Pacific island states in the group called Parties to the Nauru Agreement signed the Delap Commitment on Securing Our Common Wealth of Oceans, which included an agreement “(t)o pursue legal recognition of the defined baselines established under the United Nations Convention on the Law of the Sea to remain in perpetuity irrespective of the impacts of sea level rise.” See International Law Association, “Report of the Committee on International Law and Sea Level Rise,” 2018, pp. 16–17, http://www.ila-hq.org/images/ILA/DraftReports/DraftReport_SeaLevelRise.pdf, accessed September 11, 2018.
3. See, e.g., Valentina Baiamonte and Chiara Redaelli, “Small Island Developing States and Climate Change: An Overview of Legal and Diplomatic Strategies,” *Journal of Public and International Affairs* 28 (2017), pp. 6–26.
4. United Nations Convention on the Law of the Sea (1982), 1833 UNTS 3.
5. United Nations Framework Convention on Climate Change (1992), 1771 UNTS 107.
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