

Territorial Water Conflicts

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"In space, no one can hear you think."

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1 Territorial Water Conflicts

1.1 Defining the Battleground: Concepts and Stakes

The world's oceans, covering over seventy percent of our planet, represent not only vast expanses of water but also critical arenas of national ambition, economic aspiration, and geopolitical friction. Beneath the seemingly uniform blue surface lies a complex, invisible cartography of claims and jurisdictions – a patchwork of maritime zones where the sovereign rights of coastal states intersect, overlap, and frequently clash. Understanding why these liquid territories become battlegrounds requires first grasping the fundamental concepts of territorial waters and Exclusive Economic Zones (EEZs), the high-stakes resources they contain, and the intricate historical and legal frameworks that define them. These contested maritime spaces are not merely lines on a map; they are domains where national security, economic prosperity, and environmental stewardship collide, setting the stage for conflicts ranging from diplomatic spats to near-confrontations and shaping the destiny of nations.

1.1 Historical Evolution of Maritime Claims The struggle to define control over the seas stretches back centuries, evolving from rudimentary concepts of dominion to the sophisticated, yet still contested, legal regime of today. For much of history, powerful maritime nations asserted sweeping claims over vast oceanic areas. The Roman jurists spoke of *mare clausum* (closed sea), while medieval monarchs like King John of England claimed the “Sovereignty of the British Seas.” A pivotal shift began in the 17th century with the iconic debate between Dutch jurist Hugo Grotius and English scholar John Selden. Grotius, arguing in his seminal 1609 work *Mare Liberum* (The Free Sea), championed the principle that the oceans were international territory, free for navigation and fishing by all nations beyond a narrow coastal strip. This doctrine was fiercely contested by Selden in his 1635 rebuttal, *Mare Clausum* (The Closed Sea), who argued for expansive national control to protect England's security and fisheries. This foundational clash between freedom of the seas and sovereign control continues to resonate. Practical limitations on naval power led to the emergence of the “cannon shot rule” in the 18th century, effectively defining territorial waters as the distance a shore-based cannon could fire – generally accepted as three nautical miles. This pragmatic standard endured for nearly two centuries. However, the 20th century witnessed a dramatic acceleration in the enclosure of the oceans. Technological advancements in fishing, resource extraction, and naval power projection, coupled with growing nationalist sentiment, fueled coastal states' desires to extend their jurisdiction. The Truman Proclamations of 1945 were a watershed moment. President Harry S. Truman unilaterally declared U.S. jurisdiction over the natural resources of the continental shelf and established conservation zones for fisheries beyond the territorial sea. This bold move triggered a cascade of similar claims globally. Nations began asserting varying, and often overlapping, breadths for their territorial seas (from 3 to 200 nautical miles) and continental shelves, creating a chaotic tapestry of competing jurisdictions. This escalating “creeping jurisdiction” underscored the urgent need for a comprehensive international legal framework, a challenge finally addressed decades later with the culmination of the United Nations Convention on the Law of the Sea (UNCLOS).

1.2 The UNCLOS Framework: Rights and Obligations After decades of complex negotiation involving

over 160 nations, the Third United Nations Conference on the Law of the Sea concluded in 1982, producing the “Constitution for the Oceans” – UNCLOS. This monumental treaty, which entered into force in 1994, provides the universally recognized legal blueprint for maritime zones and coastal state rights, fundamentally shaping modern disputes. UNCLOS meticulously defines distinct maritime zones radiating from a coastal state’s baselines: * **Territorial Sea (up to 12 nautical miles):** Within this zone, the coastal state exercises full sovereignty, equivalent to its land territory, subject to the right of innocent passage for foreign vessels. This includes control over the airspace above and the seabed/subsoil below. * **Contiguous Zone (up to 24 nautical miles):** Beyond the territorial sea, the coastal state may exercise limited control necessary to prevent or punish infringements of its customs, fiscal, immigration, or sanitary laws and regulations within its territory or territorial sea. * **Exclusive Economic Zone (EEZ) (up to 200 nautical miles):** This zone represents the most significant expansion of coastal state rights under UNCLOS. Within its EEZ, the coastal state possesses sovereign rights for exploring, exploiting, conserving, and managing both living (fish, marine mammals) and non-living (oil, gas, minerals) resources of the waters superjacent to the seabed, the seabed itself, and its subsoil. Crucially, it also has jurisdiction regarding marine scientific research and the protection and preservation of the marine environment. However, these rights coexist with the freedoms of navigation, overflight, and laying submarine cables and pipelines for *all* states. * **Continental Shelf:** The coastal state has inherent sovereign rights over the natural resources of its continental shelf, which extends at least 200 nautical miles from the baseline, and potentially further (up to 350 nautical miles or 100 nautical miles beyond the 2,500-meter isobath) based on geological criteria defined in UNCLOS Article 76.

This framework attempts a delicate balancing act. Coastal states gain extensive rights over valuable resources within their EEZs and continental shelves. Simultaneously, UNCLOS preserves critical freedoms vital for global trade and naval mobility. However, this balance is inherently precarious. The rights granted – particularly the exclusive access to resources within the EEZ – are powerful motivators for states to maximize their claims. Conversely, the freedoms reserved, especially military activities and intelligence gathering within another state’s EEZ, are jealously guarded by major maritime powers. Furthermore, coastal states bear significant responsibilities under UNCLOS for sustainably managing resources and protecting the marine environment within their zones, obligations that can be complex and costly to fulfill, yet also provide grounds for asserting jurisdiction against foreign activities deemed harmful.

1.3 Why Waters Become Contested: High Stakes Resources The intense competition over maritime zones stems directly from the immense strategic, economic, and environmental value they hold. Control or influence over these waters translates into tangible power and security. **Strategically**, maritime zones encompass vital Sea Lanes of Communication (SLOCs) – the arteries of global trade. Chokepoints like the Strait of Hormuz, Malacca Strait, or the Suez Canal fall within or are influenced by the jurisdictional claims of littoral states. Dominance over these areas grants leverage over energy supplies and commerce, making them focal points for naval presence and geopolitical maneuvering. National security concerns are paramount; states fiercely guard approaches to their coastlines and seek to prevent adversaries from establishing military footholds or conducting surveillance within their claimed waters.

Economically, the resources contained within EEZs and continental shelves are staggering. Fisheries

1.2 The Legal Labyrinth: Principles and Challenges in Delimitation

While the immense strategic and economic stakes outlined in Section 1 provide the fundamental *why* behind territorial water conflicts, the actual *how* of translating coastline geography into exclusive maritime domains is an intricate legal and technical challenge. Establishing where one nation's rights end and another's begin, or where the freedoms of the high seas commence, requires navigating a complex labyrinth of principles defined by the United Nations Convention on the Law of the Sea (UNCLOS) and refined through decades of state practice and jurisprudence. This process of maritime boundary delimitation, far from being a simple exercise in cartography, is fraught with interpretative ambiguities, competing methodologies, and geographical realities that often defy neat solutions. These inherent difficulties in application, rather than a lack of governing law, frequently lie at the heart of enduring disputes and escalating tensions between coastal states.

2.1 Baselines: The Foundation of Claims Every maritime claim begins with the baseline. This fundamental reference line, defined in UNCLOS Articles 5-14, marks the starting point from which the breadth of the territorial sea, contiguous zone, EEZ, and continental shelf is measured. The default, or “normal,” baseline is the low-water line along the coast as marked on large-scale charts officially recognized by the coastal state. However, coastlines are rarely smooth; they feature deeply indented curves, fringing islands, deltas, and unstable shorelines. To accommodate such complexities, UNCLOS permits the use of “straight baselines” connecting appropriate points along the coast or across the mouths of rivers, bays, or groups of islands meeting specific criteria (e.g., close interdependence, longstanding economic interests). The justification is to avoid absurdly complex boundaries following every minor coastal irregularity. Yet, this flexibility is a notorious source of controversy. States have sometimes drawn straight baselines excessively, converting vast expanses of open sea into internal waters, thereby extending their maritime zones seaward from these artificially constructed lines. Norway's innovative, though initially contested, use of straight baselines along its fjord-indented coast in the 1930s set an early precedent. More contentious examples include China's 1996 declaration of straight baselines around the Paracel Islands in the South China Sea, enclosing a huge area, and Cambodia's baselines along its relatively smooth coast, deemed excessive by neighboring Vietnam. Furthermore, the stability of baselines themselves is under threat from climate change. Rising sea levels erode coastlines and submerge low-tide elevations, potentially shifting the low-water line landward and shrinking the maritime zones measured from it, raising profound questions about the permanence of established boundaries.

2.2 Core Principles: Equidistance, Circumstances, and Equity Once baselines are established, the task of drawing boundaries between adjacent or opposite states commences. UNCLOS provides guiding principles, but their application is more art than science. For delimiting the territorial sea between adjacent or opposite coasts, Article 15 prescribes the “equidistance/special circumstances” rule. This generally means drawing a median line where every point is equidistant from the nearest points on the baselines of the two states, unless historic title or other “special circumstances” necessitate a different line. The concept seems straightforward, but defining “special circumstances” – such as the precise configuration of the coast, navigational channels, or historical fishing patterns – is inherently subjective and open to dispute. For the vastly more significant EEZ and continental shelf boundaries, Articles 74 and 75 stipulate that delimitation should

be effected by agreement to achieve an “equitable solution.” While the equidistance method is often used as a starting point, it is not mandatory. International courts and tribunals have developed a nuanced approach, emphasizing that the goal is equity based on relevant circumstances, not necessarily equality. Factors considered include: * **Geography:** The overall configuration and length of the relevant coastlines (the principle of proportionality), concavity/convexity, and the presence of coastal projections. * **Geology/Geomorphology:** The natural prolongation of the continental shelf landmass, though its primacy has diminished since the 1985 *Libya/Malta* case which emphasized distance (200 nm EEZ) over geology within that zone. * **Conduct of the Parties:** Prior agreements, established fishing practices, or oil concessions might indicate an agreed or accepted de facto boundary. * **Security and Navigation:** Avoiding boundaries that significantly impede access to ports or create navigational hazards. Landmark cases like the 1969 *North Sea Continental Shelf* judgments established the fundamental role of equitable principles, while the 2009 *Romania v. Ukraine* Black Sea delimitation refined the modern three-stage approach: (1) draw a provisional equidistance line; (2) consider if relevant circumstances call for adjustment to achieve an equitable result; (3) verify the adjusted line does not create disproportionate effects relative to coastal lengths. This process demands careful weighing of diverse, often competing, factors, ensuring no single rule mechanically applies to every unique geographical situation, but also guaranteeing significant legal uncertainty.

2.3 The Perennial Problem: Islands, Rocks, and Low-Tide Elevations Perhaps no aspect of maritime delimitation generates more controversy than the treatment of islands. UNCLOS Article 121 defines an island as “a naturally formed area of land, surrounded by water, which is above water at high tide.” Critically, such islands generate their own full suite of maritime zones – territorial sea, contiguous zone, EEZ, and continental shelf – just like mainland territory. However, the treaty carves out a crucial exception: “Rocks which cannot sustain human habitation or economic life of their own shall have no exclusive economic zone or continental shelf.” They only generate a 12 nm territorial sea. Low-tide elevations (LTEs), areas submerged at high tide but exposed at low tide, only generate a maritime zone if they lie within the territorial sea of the mainland or an island. The practical application of these distinctions is fraught with difficulty and strategic significance. What constitutes a “rock” versus an “island”? Does the presence of imported soil, desalination plants, and temporary shelters transform a barren outcrop into something capable of “sustaining human habitation”? The stakes are enormous: a small, potentially uninhabitable feature deemed an “island” can generate an EEZ extending over 125,000 square nautical miles of ocean space and seabed resources. This ambiguity fuels intense disputes. In the South China Sea, numerous states have engaged in large-scale land reclamation and infrastructure construction on features like Subi Reef and Mischief Reef precisely to bolster claims that they are “islands” entitled to vast maritime zones, despite the 2016 *Philippines v. China* arbitration tribunal ruling that many high-tide features in the Spratlys are legally only “rocks” and that artificial islands do not generate maritime zones. In delimitation between states, the impact of islands is equally contentious. Should an island generate a full effect, potentially creating a significant bulge in the boundary? Should it be given only partial effect, or be “enclaved” (granted only a small territorial sea circle) if it lies far offshore or would otherwise cause an inequitable cut-off of the other state’s maritime area? The treatment of tiny Serpents’ Island significantly influenced the *Romania v. Ukraine* boundary in the Black Sea, demonstrating how minute land features can dramatically alter the division of vast marine resources.

2.4 Overlapping Claims and Unresolved Boundaries The practical consequence of complex coastlines, ambiguous baselines, contested interpretations of delimitation principles, and disputes over insular features is a global map riddled with overlapping claims and unresolved maritime boundaries. It is estimated that well over half of the world's potential maritime boundaries remain formally unsettled. This absence of agreed lines is the primary source of conflict. In areas rich in resources, such as the Eastern Mediterranean gas fields, the lack of delimitation between Cyprus, Turkey, Lebanon, Israel, and

1.3 Adjudication and Diplomacy: Pathways to Resolution

The intricate legal labyrinth of maritime delimitation, with its inherent ambiguities concerning baselines, relevant circumstances, and the vexed status of insular features, inevitably leads to overlapping claims and unresolved boundaries across the globe. This absence of clear lines, particularly in resource-rich areas, creates fertile ground for friction and potential conflict. Faced with these persistent flashpoints, states navigate a complex array of pathways seeking resolution, ranging from binding legal adjudication to nuanced diplomatic engagement, often against a backdrop where raw power politics remains an undeniable, and sometimes decisive, factor.

3.1 Compulsory Procedures under UNCLOS Part XV Recognizing that disputes were inevitable, the architects of UNCLOS embedded a sophisticated dispute settlement system within Part XV of the Convention, often described as one of its most significant innovations. This system operates on a tiered basis. States are first obliged to settle disputes through peaceful means of their own choice (negotiation, mediation, etc.). Failing that, and unless the parties agree otherwise, Part XV generally provides for compulsory procedures entailing binding decisions. This compulsory mechanism is serviced by four potential forums, chosen by the applicant state unless parties agree otherwise: the International Tribunal for the Law of the Sea (ITLOS) in Hamburg, established specifically by UNCLOS; the venerable International Court of Justice (ICJ) in The Hague; arbitration conducted under Annex VII of UNCLOS (the default forum if no other choice is made); or special arbitration under Annex VIII for disputes concerning specific technical areas like fisheries or marine pollution. While hailed as a major step forward, this system is not without significant limitations. Crucially, Article 298 allows states to issue optional declarations excluding certain sensitive categories of disputes from compulsory binding procedures. These exceptions commonly include disputes concerning maritime boundary delimitations themselves, military activities, and law enforcement actions regarding marine scientific research or fisheries within the EEZ. Major coastal states like China, Russia, the UK, France, and others have lodged such exceptions. Consequently, while Part XV provides a powerful tool, its compulsory nature can be circumvented, particularly concerning the most contentious delimitation disputes. China's invocation of its Article 298 declaration to reject the jurisdiction of the Annex VII tribunal in the *Philippines v. China* case starkly illustrates this limitation, demonstrating how the system's universality is constrained by state sovereignty.

3.2 Landmark Cases: Precedent and Impact Despite these limitations, international courts and tribunals have delivered landmark rulings that have profoundly shaped the jurisprudence of maritime delimitation, providing essential guidance and precedent even when states choose alternative resolution paths. The foun-

dational *North Sea Continental Shelf* cases (1969) at the ICJ firmly established that delimitation must be governed by equitable principles, rejecting the notion of strict equidistance as mandatory customary law. This emphasis on achieving an equitable solution based on relevant circumstances became the cornerstone of subsequent jurisprudence. The *Libya/Malta* case (1985) further refined this, significantly diminishing the role of geological “natural prolongation” for delimitation within 200 nautical miles, prioritizing distance from the coast as the primary criterion in that zone. The *Qatar v. Bahrain* case (2001) tackled the complex issue of insular features and low-tide elevations head-on, affirming that LTEs cannot be used as basepoints unless within the territorial sea and establishing critical rules for drawing baselines around island groups. The *Romania v. Ukraine* case (2009) in the Black Sea provided the clearest articulation of the now-standard three-stage methodology for EEZ/continental shelf delimitation: constructing a provisional equidistance line, considering relevant circumstances requiring adjustment for equity, and performing a disproportionality test. Perhaps the most politically charged recent ruling was the *South China Sea Arbitration (Philippines v. China)* (2016) under Annex VII. While China refused to participate, the tribunal proceeded. Its sweeping findings clarified crucial points: rejecting China’s “nine-dash line” historic rights claim within the EEZ of others; ruling that numerous high-tide features in the Spratlys (including Itu Aba, occupied by Taiwan) are legally “rocks” entitled only to a 12nm territorial sea, not EEZs; declaring that artificial islands built on reefs generate no maritime zones; and finding China’s actions (land reclamation, interference with fishing/oil exploration) violated UNCLOS obligations regarding marine environment protection and aggravating disputes. While China dismissed the ruling, its detailed legal reasoning sets a powerful precedent influencing global state practice and the legal discourse surrounding maritime claims.

3.3 Diplomatic Channels: Negotiation, Mediation, Conciliation Despite the existence of compulsory procedures, the preferred and most common method for resolving maritime disputes remains direct negotiation between the states concerned. This preference stems from the desire for control over the outcome, the flexibility to craft mutually acceptable solutions beyond pure legal entitlements (e.g., resource sharing), and the avoidance of the perceived loss of face or sovereignty that can accompany an adverse judicial ruling. Countless maritime boundaries have been settled quietly through bilateral negotiation, often following years or decades of technical discussions and confidence-building measures. When bilateral talks stall, states may turn to third-party facilitated diplomacy. **Mediation** involves a neutral third party (a state, international organization, or individual) assisting the disputants in reaching a voluntary settlement by facilitating dialogue, proposing options, and helping bridge differences. Norway, for instance, has frequently acted as a mediator, notably assisting Guatemala and Belize in resolving their long-standing territorial and maritime dispute in 2008. **Conciliation**, a more formal but non-binding process outlined in UNCLOS Annex V, involves a commission established by the parties (or appointed by the UN Secretary-General if they cannot agree) tasked with examining the dispute and proposing terms of settlement. While the recommendation is not binding, it carries significant moral and political weight. A prominent example is the Conciliation Commission between Timor-Leste and Australia (2016-2018). Established after Timor-Leste initiated compulsory conciliation under UNCLOS – despite Australia’s Article 298 exception, as conciliation is distinct from binding arbitration – the Commission successfully facilitated negotiations leading to the landmark 2018 Maritime Boundaries Treaty and a groundbreaking agreement on the development of the Greater Sunrise gas field. This case

demonstrated conciliation's potential to break deadlocks even in highly sensitive disputes involving significant resource wealth and power imbalances. Furthermore, provisional arrangements of a practical nature, such as Joint Development Agreements (JDAs) for resources in disputed areas (discussed further in Section 5), are themselves products of diplomacy, allowing cooperation pending final boundary resolution, as seen historically in the Timor Gap between Australia and Indonesia.

3.4 The Persistence of Power Politics and Non-Compliance However, the pathways of law and diplomacy often run aground on the hard rocks of power politics and national interest. The most glaring limitation of the legal system is non-compliance. States may simply refuse to participate in proceedings, as China did in the South China Sea arbitration, denying the tribunal's legitimacy from the outset. More consequ

1.4 The Resource Crucible: Fisheries Conflicts

The persistent friction between the rule of maritime law and the realities of power politics, coupled with the widespread absence of agreed boundaries, creates fertile ground for conflict. Nowhere is this volatile mix more apparent than in the realm of fisheries. Competition over dwindling stocks of fish and other marine life transforms contested maritime zones into arenas of intense, often dangerous, confrontation. Unlike the abstract potential of seabed hydrocarbons, fisheries represent an immediate, vital resource – a source of protein, livelihoods, and national income for millions. When overlapping claims coincide with depleted stocks and desperate fishing communities, the stage is set for the “Resource Crucible” of fisheries conflicts, where the legal labyrinth of delimitation collides head-on with the biological reality of overexploited oceans.

Overfishing and the Tragedy of the Commons forms the fundamental backdrop to these disputes. Fish stocks, particularly those that are highly migratory or straddle EEZ boundaries and the high seas, epitomize the classic economic problem of the commons. No single entity owns the resource, creating powerful incentives for individual actors (fishers, companies, states) to extract as much as possible before others do, leading inexorably to depletion. UNCLOS attempted to address this by granting coastal states sovereign rights to manage fisheries within their 200-nautical-mile EEZs and mandating cooperation for straddling and highly migratory stocks. However, the effectiveness of this regime is undermined by several factors. Many coastal states lack the capacity or political will for effective management within their own waters, leading to overfishing. Simultaneously, vessels from distant-water fishing nations (DWFNs), facing depleted stocks elsewhere, aggressively target resources in the EEZs of less powerful coastal states or exploit gaps in management on the high seas adjacent to EEZs. This dynamic fuels intense resentment and suspicion. The infamous “Cod Wars” between Iceland and the UK (1958-1976) were fundamentally rooted in Iceland's unilateral extension of its fisheries jurisdiction to protect collapsing cod stocks from British trawlers, presaging the EEZ concept. Similarly, tensions flared between Canada and Spain in the 1990s over turbot stocks straddling Canada's EEZ and the high seas off Newfoundland. The scramble for dwindling stocks like bluefin tuna, Patagonian toothfish (Chilean sea bass), and squid frequently brings fishing fleets into disputed or ambiguous maritime zones, transforming competition into outright conflict. Compounding this is the pervasive problem of Illegal, Unreported, and Unregulated (IUU) fishing. IUU vessels, often operating under flags of convenience with minimal oversight, deliberately target waters where enforcement is weak, boundaries are disputed, or regu-

lations are poorly implemented. They plunder stocks, undermine conservation efforts, and deprive coastal states of revenue, acting as a constant flashpoint. The presence of such vessels in contested waters provides a ready pretext for enforcement actions that can quickly escalate.

Enforcement Clashes: Patrols, Arrests, and Confrontations are the visible, often violent, manifestation of these underlying pressures. The absence of a settled maritime boundary, or disagreements over permissible fishing activities even within recognized EEZs, turns coast guard and naval patrols into the front line of resource defense. What begins as routine monitoring can rapidly spiral into high-stakes confrontations. States invest significantly in patrol vessels, aerial surveillance, and sometimes naval assets specifically to protect their claimed fishing grounds. When a vessel is detected operating in disputed waters or suspected of IUU fishing, enforcement actions typically involve hailing, boarding, inspection, and potentially arrest of the vessel and crew. These actions are inherently risky and politically charged. The 1995 “Turbot War” saw Canadian authorities arrest a Spanish trawler, the *Estai*, on the high seas just outside Canada’s declared EEZ conservation zone, triggering a major diplomatic crisis involving NATO allies. Canadian patrol vessels and Spanish frigates faced off in tense standoffs. In South America, Argentina has repeatedly clashed with vessels flagged to Taiwan and China, primarily squid jiggers, operating near or within its claimed EEZ around the Falkland Islands/Malvinas, a territory also claimed by the UK. These encounters frequently involve dangerous maneuvers, warning shots, ramming, and, in several tragic instances, vessel sinkings. In March 2016, an Argentine coast guard vessel sank a Chinese squid jigger within Argentina’s claimed EEZ after a prolonged chase and alleged collision attempts, highlighting the lethal potential. Similarly, North Korean fishers, desperate due to stock declines in their own waters and stringent sanctions, frequently clash violently with South Korean and Japanese coast guards, sometimes resulting in deaths. The use of force in fisheries enforcement is a murky area under international law, governed by principles of necessity and proportionality, but the heat of confrontation often tests these limits. Fishermen themselves, seeing their livelihoods threatened, can become aggressive actors, ramming patrol boats or forming flotillas to resist enforcement, as seen in the long-running and sometimes violent disputes between Senegalese artisanal fishers and foreign industrial trawlers. The “Lobster War” between France and Brazil (1961-1963), sparked by French vessels fishing off Brazil, even saw naval deployments and threats of force, demonstrating how fisheries disputes can escalate to the brink of major conflict.

Regional Fisheries Management Organizations (RFMOs) represent the primary international mechanism designed to mitigate these conflicts and manage shared fish stocks sustainably. Established by treaties between states with a “real interest” in the fisheries of a specific ocean region (e.g., tuna in the Pacific, cod in the Northeast Atlantic), RFMOs aim to provide a forum for scientific assessment, quota setting, regulation of fishing methods, and coordination of monitoring and enforcement. In theory, they offer a way to overcome the tragedy of the commons by fostering cooperation among coastal states and DWFNs. Key bodies include the International Commission for the Conservation of Atlantic Tunas (ICCAT), the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), the North East Atlantic Fisheries Commission (NEAFC), and numerous others covering most high seas areas and straddling stocks. RFMOs set total allowable catches (TACs), allocate quotas among members, establish seasons and gear restrictions, and increasingly implement vessel monitoring systems (VMS) and port state measures to combat IUU fish-

ing. However, their effectiveness in *preventing* conflict is often hamstrung by political tensions mirroring the underlying maritime disputes. Allocation negotiations within RFMOs are notoriously contentious, pitting coastal states against DWFNs and developed against developing nations. States may use their RFMO membership or obstructionism as an extension of broader geopolitical rivalries. Agreeing on robust scientific advice can be difficult, and quotas are frequently set higher than recommended levels due to political pressure. Enforcement remains a

1.5 Black Gold Beneath Blue Waters: Hydrocarbon Disputes

While the clash over fisheries arises from the pursuit of living, moving resources across fluid jurisdictional boundaries, the quest for hydrocarbons – oil and natural gas – represents a fundamentally different, yet equally potent, driver of maritime conflict. Unlike schools of fish traversing vast distances, these reserves of “black gold” lie fixed within the geological structures of the seabed and subsoil. Their immense value, concentrated in specific, immovable locations beneath often contested waters, transforms the delineation of maritime boundaries from an abstract legal exercise into a high-stakes competition for control over subterranean wealth. The discovery of substantial offshore reserves within or near overlapping Exclusive Economic Zones (EEZs) or continental shelf claims can instantly escalate dormant disputes into active confrontations, fueled by the promise of energy security, economic windfalls, and national prestige.

Mapping the Subsurface: Geology and Claim Overlaps lies at the heart of many hydrocarbon-driven conflicts. The formation of oil and gas reservoirs is governed by complex geological processes, primarily occurring within sedimentary basins extending from the continental margin. Crucially, these geological basins pay no heed to the invisible lines humans draw on maps to demarcate maritime jurisdiction. A single, rich hydrocarbon province frequently spans the potential EEZ or continental shelf claims of multiple coastal states. The most volatile disputes erupt precisely where promising geological structures coincide with areas of unresolved maritime boundaries or mutually exclusive claims. The Eastern Mediterranean serves as a prime example. The discovery of the massive Leviathan (Israel), Tamar (Israel), Zohr (Egypt), and Aphrodite (Cyprus) gas fields within the last two decades transformed a region already fraught with historical tensions and complex maritime delimitation issues involving Cyprus, Turkey, Greece, Israel, Lebanon, and Egypt. The Levant Basin Province, holding these riches, straddles multiple claimed continental shelves and EEZs. Similarly, in the South China Sea, the belief (bolstered by limited exploration data) in substantial hydrocarbon potential beneath the contested Spratly and Paracel Islands archipelagoes fuels the intensity of overlapping claims by China, Vietnam, the Philippines, Malaysia, and Brunei. The Falkland Islands/Malvinas dispute between Argentina and the United Kingdom is intrinsically linked to the potential oil and gas reserves surrounding the islands, with exploration activities regularly sparking diplomatic protests. The technical challenge of delimitation becomes exponentially more difficult when valuable, fixed resources are known or suspected to lie directly beneath the area of overlapping claims, creating a powerful disincentive for compromise and turning geological surveys into acts laden with political significance.

Exploration as Provocation: Seismic Surveys and Drilling Rigs becomes inevitable when states seek to confirm and exploit potential subsurface wealth. However, in disputed waters, these essential activities

are rarely seen as purely commercial or scientific; they are potent political statements and assertions of sovereignty. The deployment of a seismic survey vessel, trailing arrays of airguns to map subsurface structures through acoustic pulses, is often the first overt step. While ostensibly gathering data, its presence in a contested zone is a clear signal of a state's intent to pursue resources based on its jurisdictional claim. This frequently triggers immediate diplomatic protests and, alarmingly often, the dispatch of rival coast guard or naval vessels to monitor, harass, or expel the survey ship. The 2014 standoff between China and Vietnam exemplifies this dynamic. China's deployment of the massive deepwater drilling rig, HD-981, accompanied by a large flotilla of coast guard and fishing vessels, approximately 120 nautical miles off the coast of Vietnam (within Vietnam's claimed EEZ but also within China's expansive "nine-dash line" claim), sparked weeks of dangerous confrontations. Vietnamese vessels attempted to block the rig's operations, resulting in ramming incidents and water cannon use, significantly escalating bilateral tensions. Similarly, exploration activities near the Falklands/Malvinas by UK-licensed companies consistently draw fierce condemnation and threats from Argentina, which views any such activity as illegal exploitation of its sovereign resources. Turkey's dispatch of the drill ships *Fatih* and *Yavuz*, accompanied by naval escorts, to conduct exploratory drilling within areas claimed by Cyprus as part of its EEZ has been a major point of friction with the Republic of Cyprus, Greece, and the EU, leading to sanctions. Even exploratory drilling by Cyprus near the Aphrodite field, while within its undisputed EEZ, draws protests and counter-drilling threats from Turkey, which backs the breakaway Turkish Republic of Northern Cyprus and claims parts of the Cypriot continental shelf. The presence of a semi-submersible drilling rig or a survey vessel thus becomes a highly visible, provocative assertion of control, transforming the contested seascape into a stage for demonstrating resolve and capability, with the ever-present risk of miscalculation leading to kinetic incidents.

Joint Development Agreements: Successes and Stalemates represent the primary diplomatic pathway for managing hydrocarbon resources in areas where maritime boundaries remain unresolved, yet the pressure to develop the resources is intense. A JDA is a treaty-based framework where claimant states agree to temporarily set aside their competing sovereignty claims to jointly explore and exploit hydrocarbon resources within a defined zone of overlapping interest. The core principle is functional cooperation: sharing the benefits (revenue, energy supply) without prejudice to the ultimate delimitation of the boundary. Several notable successes demonstrate their potential. The 1958 Agreement between Saudi Arabia and Kuwait concerning the Partition of the Neutral Zone and its submerged resources established a model that functioned for decades, allowing shared exploitation of onshore and offshore fields. The groundbreaking 1993 Timor Gap Treaty between Australia and Indonesia established a complex three-zone JDA over the hydrocarbon-rich Timor Sea, facilitating development during a period of unresolved boundaries and disputed sovereignty (though its fairness was later challenged by independent Timor-Leste). More recently, the 2018 agreement between Senegal and Guinea-Bissau established a Cooperation Zone for the exploitation of shared resources, born out of a specific ICJ ruling that mandated cooperation pending final delimitation. The 2018 Treaty between Australia and Timor-Leste, following the UNCLOS Conciliation Commission, not only established their permanent maritime boundary but also included a groundbreaking Special Regime for the development of the Greater Sunrise gas field, featuring revenue sharing and a potential pipeline to Timor-Leste. However, JDAs are notoriously difficult to negotiate and sustain. The political hurdles are immense, requiring states

to compromise on deeply held sovereignty claims and navigate domestic opposition often framed as capitulation. Technical challenges include agreeing on the precise zone, the governing structure, fiscal terms, operator selection, and dispute resolution mechanisms. Crucially, successful JDAs require a baseline level of political trust and a mutual desire for resource development that outweighs the sovereignty dispute – conditions often absent in the world’s most intractable conflicts. The Eastern Mediterranean, despite its vast potential, remains largely devoid of functioning JDAs due to the Cyprus conflict and the deep antagonism between Greece and Turkey. Attempts to negotiate JDAs in the South China Sea, such as a 2005 Joint Marine Seismic Undertaking (JMSU) involving China, Vietnam, and the Philippines, have foundered on mistrust, concerns over sovereignty implications, and domestic backlash. Similarly, proposals for JDAs in areas like the Guyana-Venezuela maritime boundary dispute remain unrealized aspirations. The very act of proposing or rejecting a JDA becomes a political maneuver; agreeing to one can be seen as weakening one’s sovereignty claim, while rejecting it may

1.6 Strategic Passages and Naval Presence: Geopolitics at Sea

The intense competition over subsea hydrocarbons, while driven by the promise of subterranean wealth, represents only one facet of the strategic value embedded within contested maritime zones. Beyond the lure of oil and gas reserves, control over the very arteries of global commerce – the vital sea lanes and strategic chokepoints – and the ability to project naval power within these domains elevate territorial water disputes into the highest echelons of geopolitical rivalry. Here, the calculus shifts from resource exploitation to national security imperatives, freedom of navigation for trade and military mobility, and the assertion of regional or global influence. When overlapping maritime claims encompass these critical waterways, or when states seek to assert military dominance over disputed features and surrounding waters, the potential for friction and escalation intensifies dramatically, transforming blue waters into arenas of great power competition and regional power plays.

The lifeblood of the global economy pulses through narrow Sea Lanes of Communication (SLOCs) and constricted chokepoints. These maritime highways carry over 80% of the volume of global trade, including the vast majority of the world’s seaborne oil and liquefied natural gas (LNG). Control, or even the ability to threaten disruption, of these chokepoints grants disproportionate geopolitical leverage. The Strait of Hormuz, a mere 21 nautical miles wide at its narrowest point, serves as the world’s most critical oil chokepoint, with an estimated 20-30% of global seaborne oil passing through it daily. Iran’s geographical position allows it to pose a constant threat of closure, demonstrated during the “Tanker War” phase of the Iran-Iraq conflict (1984-1988) and through recurring naval drills and veiled threats, instantly impacting global oil prices. Similarly, the Strait of Malacca, the primary shipping channel between the Indian and Pacific Oceans, is a mere 1.7 nautical miles wide at its narrowest point in the Phillip Channel. Over 90,000 vessels transit annually, carrying vital energy supplies to Northeast Asian powerhouses like China, Japan, and South Korea. Any disruption here, whether from piracy, terrorism, or state action, would have catastrophic global economic consequences. The Bab-el-Mandeb strait, linking the Red Sea (and Suez Canal) to the Gulf of Aden, sees significant oil flows and has witnessed heightened tensions due to the conflict in Yemen and

Houthi rebel attacks on shipping. Even less trafficked chokepoints hold immense strategic weight. The Turkish Straits (Bosporus and Dardanelles), governed by the Montreux Convention, are Russia's only year-round warm-water access to the Mediterranean and global oceans, a factor deeply influencing its Black Sea strategy, particularly concerning Crimea and the Sea of Azov. For littoral states bordering these passages, their national security is inextricably linked to ensuring the free flow of commerce through these waters while preventing adversaries from gaining control or establishing a stranglehold. Consequently, disputes over maritime boundaries in areas adjacent to or encompassing these chokepoints – such as Iran's claims vis-à-vis Gulf Arab states impacting Hormuz approaches, or the complex sovereignty issues surrounding the Spratly Islands near key South China Sea routes – are infused with an urgency far exceeding mere resource claims. The security of SLOCs is not merely an economic concern; it is an existential imperative for trade-dependent nations and a core driver of naval strategies worldwide.

Asserting naval power and defending perceived rights of passage within contested or ambiguously defined maritime zones is a constant source of friction. This is most visibly manifested in **Freedom of Navigation Operations (FONOPs)**, primarily conducted by the United States Navy, but increasingly emulated by other major maritime powers like the UK, France, Australia, and India. The stated purpose of FONOPs is to challenge excessive maritime claims inconsistent with UNCLOS, thereby preserving the customary international law principle of freedom of the seas and preventing the emergence of restrictions through state acquiescence. These operations involve naval vessels or aircraft deliberately transiting through areas claimed by coastal states in ways that exercise rights UNCLOS guarantees to all states. Common FONOP targets include: * **Excessive Straight Baselines:** Sailing within waters claimed as internal due to unlawfully drawn straight baselines (e.g., operations challenging such claims by Vietnam, Cambodia, and China). * **Restrictions on Innocent Passage:** Conducting transit passage through international straits claimed as territorial seas requiring prior notification or authorization (e.g., transits through the Strait of Hormuz challenging Iranian requirements). * **Military Activities in EEZs:** Conducting military exercises, surveillance, or intelligence gathering within another state's EEZ without prior consent, challenging interpretations that such activities require coastal state permission (e.g., frequent US operations within China's claimed EEZ around the Paracels and Spratlys, and similar challenges to Indian claims). * **Air Defense Identification Zones (ADIZ):** Flying military aircraft without adhering to identification procedures demanded by unilaterally declared ADIZs that overlap international airspace or EEZs (e.g., challenges to China's East China Sea ADIZ).

While framed as upholding international law, FONOPs are inherently provocative to the coastal states whose claims are being challenged. They are perceived as violations of sovereignty or security interests, often leading to dangerous intercepts by coast guard or naval vessels, diplomatic protests, and accusations of destabilization. China, in particular, vociferously condemns US FONOPs near its artificial islands in the South China Sea, viewing them as deliberate infringements on its sovereignty and security, frequently shadowing and challenging the US vessels in maneuvers that risk collision. This tension underscores the fundamental legal ambiguity regarding permissible military activities in a foreign EEZ. While UNCLOS explicitly preserves high seas freedoms of navigation and overflight within the EEZ, it also grants the coastal state jurisdiction over marine scientific research and mandates “due regard” to coastal state rights and duties. States like China, India, and Brazil interpret “due regard” as imposing significant limitations on foreign mil-

itary activities, including surveillance, within their EEZs, arguing such actions threaten their security and resource rights. The US and its allies maintain that military activities, including surveillance and exercises, are traditional high seas freedoms preserved under UNCLOS Article 58 and require neither prior notification nor consent. This unresolved legal disagreement transforms routine naval presence and surveillance operations within EEZs – activities critical for intelligence gathering and strategic awareness – into persistent flashpoints for confrontation.

The strategic imperative to secure influence over vital waterways and project power directly fuels the militarization of disputed offshore features. Rather than merely claiming rocks or reefs, states invest heavily in transforming them into fortified forward operating bases. This process, most dramatically evident in the South China Sea, involves extensive land reclamation (dredging sand to enlarge tiny islets), constructing hardened infrastructure (runways capable of handling military transport and fighter aircraft, deep-water ports for warships, radar installations, missile batteries, hangars, barracks, and sophisticated communications systems), and deploying troops and weaponry. China's transformation of seven reefs in the Spratly Islands into formidable artificial island fortresses, complete with anti-ship and anti-aircraft missile systems, electronic warfare capabilities, and significant air and naval basing capacity, exemplifies this strategy. These outposts serve multiple strategic purposes: enhancing power projection capabilities deep into contested waters, solidifying physical control over claimed features, extending radar and surveillance coverage, enabling sustained coast guard and naval presence to enforce claims and deter others, and creating "facts on the ground" (or water) to strengthen sovereignty arguments. The militarization is not confined to one actor. Vietnam has fortified several Spratly Islands

1.7 Regional Flashpoints I: Asia-Pacific Tensions

The militarization of disputed features, most visibly transforming barren reefs into armed bastions as witnessed in the South China Sea, starkly illustrates how maritime sovereignty clashes transcend resource competition, becoming inseparable from broader geopolitical strategies and national prestige. Nowhere is this volatile interplay more complex and potentially explosive than across the vast expanse of the Asia-Pacific. This region, characterized by dynamic economic growth, unresolved historical grievances, burgeoning naval capabilities, and overlapping claims across semi-enclosed seas, hosts the planet's most intricate and dangerous territorial water conflicts. The stakes involve not just fish, oil, or gas, but fundamental questions of regional dominance, historical narratives, and the balance of power in the 21st century, with the specter of great power confrontation ever-present.

The South China Sea: A Multifaceted Quagmire stands as the archetype of modern maritime complexity. At its heart lies China's assertion of "indisputable sovereignty" over nearly the entire sea, encapsulated in the ambiguous "nine-dash line" (later modified to ten dashes on some official maps), a claim stretching hundreds of nautical miles south from Hainan Island and encompassing vital shipping lanes and resource-rich seabed. This sweeping assertion directly conflicts with the UNCLOS-defined Exclusive Economic Zones (EEZs) and continental shelves of Vietnam, the Philippines, Malaysia, Brunei, and Taiwan. The disputes crystallize around specific, strategically located features: the Paracel Islands, occupied by China since a bloody clash

with South Vietnam in 1974 but also claimed by Vietnam and Taiwan; the Spratly Islands, where China, Vietnam, the Philippines, Malaysia, Taiwan, and Brunei all maintain a physical presence on various islets, rocks, and reefs; and Scarborough Shoal (known as Huangyan Island in China, Panatag Shoal in the Philippines), a rich fishing ground seized by China in 2012 after a tense standoff with the Philippines. The legal landscape was profoundly shaped by the landmark 2016 ruling in *Philippines v. China* by an UNCLOS Annex VII arbitral tribunal. While China refused to participate, invoking its Article 298 optional exception, the tribunal delivered a sweeping rebuke. It found China's nine-dash line claim to historic rights incompatible with UNCLOS; determined that none of the high-tide features in the Spratlys qualified as islands entitled to EEZs (classifying them as mere "rocks" generating only a 12nm territorial sea); stated that China's massive land reclamation projects caused severe environmental harm; and declared China's actions at Scarborough Shoal (blockading Philippine fishermen) unlawful. China dismissed the ruling as "null and void," leaving the legal findings intact but unenforced. Instead, Beijing pursued relentless consolidation: dredging thousands of acres of land atop seven reefs in the Spratlys, constructing extensive military infrastructure including airfields capable of deploying combat aircraft, deep-water ports for warships, radar domes, and missile installations. This "island fortress" strategy aims to project power across the sea, solidify control, and normalize its presence. Meanwhile, rival claimants, particularly Vietnam, engage in their own, albeit less extensive, fortification efforts. Freedom of Navigation Operations (FONOPs) by the US and allies challenge China's claims and militarization, often resulting in dangerous shadowing and radio challenges by Chinese vessels. Beneath the surface, the scramble for hydrocarbons persists, with exploration attempts frequently sparking standoffs (like the 2014 HD-981 rig incident involving China and Vietnam). Fisheries remain a constant flashpoint, with incidents involving vessel seizures, ramming, and the deployment of massive Chinese maritime militia fleets to assert dominance. The South China Sea is thus a volatile cocktail of contested history, legal ambiguity, strategic posturing, resource competition, and military brinkmanship, with the potential to ignite regional conflagration.

The East China Sea: Senkaku/Diaoyu Dispute presents a seemingly simpler geography but no less intense confrontation. At its core lie eight uninhabited islets and rocks, administered by Japan as the Senkaku Islands but claimed by China and Taiwan as the Diaoyu Islands. While small and barren, their location is geopolitically significant: situated roughly 170 nm southwest of Okinawa and approximately 200 nm northeast of Taiwan, they lie adjacent to vital shipping lanes and potential hydrocarbon riches. The dispute's roots stretch back to the late 19th century and Japan's imperial expansion, with both sides invoking historical records and treaties to support their sovereignty claims. However, the modern dispute flared dramatically in the late 1960s when a UN survey suggested potentially substantial oil and gas reserves beneath the surrounding seabed. Diplomatic relations between Tokyo and Beijing remain perpetually strained over the islands. The primary arena for confrontation is not the islands themselves, but the surrounding waters and airspace. Both nations deploy coast guard vessels in a near-constant game of cat-and-mouse, patrolling aggressively to assert administrative control and deter the other. These encounters involve dangerous maneuvering, water cannon use, and attempts to block access. Chinese government ships regularly intrude into the territorial sea around the islands, prompting Japanese protests and counter-patrols. The situation escalated in 2012 when the Japanese government purchased three of the islands from a private owner, triggering massive anti-

Japanese protests across China and a significant increase in Chinese maritime and aerial incursions. Beijing unilaterally declared an Air Defense Identification Zone (ADIZ) over a vast swathe of the East China Sea in 2013, covering the disputed islets and demanding prior notification from aircraft, a move condemned by Japan, the US, and others who promptly violated it with military flights. The risk of an unintended collision or escalation is high, compounded by the proximity of Japanese-administered waters and airspace to sensitive Chinese military installations and the ever-present strategic shadow of Taiwan. Unlike the multi-lateral complexity of the South China Sea, the Senkaku/Diaoyu dispute is a tense bilateral standoff, fueled by deep-seated nationalism, mutual suspicion, and the strategic imperative for both powers to demonstrate resolve.

The Sea of Japan/East Sea: Dokdo/Takeshima and Beyond introduces another layer of historical animosity into the regional maritime equation. The dispute centers on a small group of islets known as Dokdo in South Korea and Takeshima in Japan, located approximately halfway between the Korean peninsula and the Japanese mainland. South Korea has maintained a continuous physical presence on the islets since 1954, stationing a small coast guard detachment and building basic infrastructure. Japan claims the islets as inherent territory based on 17th-century records, periodically lodging diplomatic protests and including the claim in official documents and school textbooks. While the islets themselves are tiny and generate only a modest territorial sea (as they are likely classified as rocks under UNCLOS), their symbolic weight is immense, deeply intertwined with the legacy of Japan's harsh colonial rule over Korea (1910-1945). South Korean administrations view any perceived weakening of control over Dokdo as a national betrayal, while Japan's periodic reassertion of its claim triggers fierce resentment in Korea. This historical baggage permeates all aspects of bilateral relations, complicating efforts to resolve the dispute or even discuss it rationally. Incidents involving Japanese patrol aircraft flying near the islets or South Korean naval drills nearby invariably spark diplomatic spats and public outrage. Beyond Dokdo/Takeshima, unresolved maritime boundaries in the broader Sea of Japan/East Sea and the Yellow Sea also simmer beneath the surface. Disagreements over the delimitation of EEZs, particularly concerning fisheries management, occasionally flare, though the Dokdo dispute remains the most potent symbol of unresolved historical grievances translating into contemporary maritime friction. The inability to resolve this seemingly minor

1.8 Regional Flashpoints II: Mediterranean, Atlantic, and Beyond

While the Asia-Pacific region presents the most intricate web of maritime tensions, fueled by historical grievances and great power ambitions, significant territorial water conflicts simmer across other critical global theaters. From the hydrocarbon-rich Eastern Mediterranean to the opening Arctic frontier and the volatile chokepoints of the Middle East, these disputes showcase diverse drivers and contexts, yet share the common threads of high-stakes resources, unresolved boundaries, and geopolitical maneuvering that characterize contemporary ocean governance challenges.

The Eastern Mediterranean has been dramatically transformed from a region of historical rivalries into a modern arena of intense hydrocarbon competition. The discovery of vast natural gas reserves beneath its seabed over the past two decades – including the Leviathan and Tamar fields off Israel, the Zohr

field off Egypt, and the Aphrodite field south of Cyprus – ignited a complex scramble for maritime space. These riches lie within overlapping and fiercely contested claims to Exclusive Economic Zones (EEZs) and continental shelves involving Cyprus, Greece, Turkey, Israel, Lebanon, and Egypt. The division of Cyprus since 1974 profoundly complicates matters. The internationally recognized Republic of Cyprus (RoC) asserts sovereignty over the entire island's maritime zones and has signed EEZ delimitation agreements with Egypt, Lebanon, and Israel. Turkey, however, which recognizes only the Turkish Republic of Northern Cyprus (TRNC), vehemently rejects these agreements. Ankara claims significant portions of the RoC's claimed EEZ, arguing Cyprus cannot delimit maritime zones without Turkish Cypriot consent and that areas south of Cyprus lie on Turkey's continental shelf. This has led to repeated high-stakes confrontations. Turkey has dispatched its powerful drilling ships, the *Fatih* and *Yavuz*, escorted by naval vessels, to conduct exploratory drilling within areas claimed by the RoC as its EEZ, notably west and south of Cyprus. These actions triggered sanctions from the European Union and fierce protests from Greece, a staunch RoC ally. Greece and Turkey also grapple with long-standing Aegean Sea disputes involving the breadth of territorial waters, airspace, and the status of numerous islands and islets, further poisoning the atmosphere for cooperation. Meanwhile, bilateral EEZ delimitation between Lebanon and Israel remains unresolved due to their state of war, with disputes over a small maritime triangle potentially holding significant gas reserves. While tentative steps towards regional cooperation emerged, such as the EastMed Gas Forum (excluding Turkey), Ankara's assertive drilling campaigns and naval deployments, coupled with Greek military modernization and French naval support for Athens, have significantly heightened tensions, turning the Eastern Mediterranean into a potential powder keg where energy aspirations collide with unresolved sovereignty issues and deep-seated mistrust.

Shifting northwest, the North Atlantic and the emerging Arctic present a different, though no less significant, set of maritime frictions, blending historical fisheries disputes with new challenges born of a changing climate. The legacy of the “Cod Wars” between Iceland and the United Kingdom (1958-1976), where Iceland unilaterally extended its fisheries jurisdiction to protect dwindling stocks, fundamentally reshaped international law, paving the way for the EEZ concept. While direct confrontations have subsided, fisheries management in the North Atlantic, particularly concerning shared stocks like mackerel and herring managed by bodies like the North East Atlantic Fisheries Commission (NEAFC), remains a source of diplomatic tension, often entangled with broader geopolitical currents like Brexit's impact on UK-EU fishing rights. However, the most profound transformation is occurring further north. The **accelerating retreat of Arctic sea ice**, a stark consequence of climate change, is rapidly opening new sea routes and resource frontiers, intensifying geopolitical competition. The fabled Northwest Passage (claimed by Canada as internal waters but viewed by the US and others as an international strait) and Russia's heavily promoted Northern Sea Route (NSR) offer dramatically shorter shipping lanes between Asia, Europe, and North America. Simultaneously, vast, previously inaccessible reserves of oil, gas, and minerals are becoming increasingly viable targets. While UNCLOS provides the primary legal framework, and the Arctic coastal states (Russia, Canada, US, Denmark via Greenland, Norway) have largely settled their bilateral boundaries through the Commission on the Limits of the Continental Shelf (CLCS) process, significant uncertainties and points of friction remain. Russia's expansive continental shelf submission to the CLCS, seeking vast areas of the Arc-

tic Ocean seabed extending to the North Pole, overlaps with Danish/Greenlandic claims and is contested. Russia has also heavily militarized its Arctic coastline, reopening Cold War-era bases and deploying advanced systems like the Bastion anti-ship missile, citing security needs for the NSR but raising concerns among NATO members. The legal status of the NSR itself is contested; Russia demands notification, fees, and icebreaker escorts for transit, asserting extensive regulatory control based on Article 234 (Ice-Covered Areas) of UNCLOS, while the US and others insist it constitutes an international strait with transit passage rights. The increasing accessibility also heightens risks of environmental disasters in a fragile ecosystem and potential search-and-rescue challenges across vast, remote areas. As commercial and military traffic grows, so too does the potential for incidents and disputes over jurisdiction, freedom of navigation, and resource access in this newly accessible ocean, testing the cooperative spirit embodied in forums like the Arctic Council.

Finally, the strategically vital waters of the Persian Gulf and the Red Sea chokepoints are perpetually strained by historical boundary disputes and contemporary security threats. The long-standing **Shatt al-Arab boundary dispute** between Iran and Iraq, concerning the confluence of the Tigris and Euphrates rivers forming the border before emptying into the Gulf, epitomizes the region's complex maritime friction. While a 1975 treaty established the thalweg (deepest channel) as the boundary, Saddam Hussein abrogated it before invading Iran in 1980, partly over this issue. Although the Algiers Agreement was nominally reinstated after the devastating war, the precise boundary remains sensitive, intertwined with oil exports and national pride. Iran's broader maritime posture in the Persian Gulf also fuels tensions. Tehran frequently asserts claims concerning islands (Abu Musa and the Tunbs, occupied by Iran but claimed by the UAE) and their surrounding waters, and engages in periodic confrontations over perceived encroachments into its claimed EEZ. More significantly, Iran's geographical dominance over the Strait of Hormuz grants it immense strategic leverage. Threats to close the strait or harass commercial shipping, demonstrated during the "Tanker War" of the 1980s and recurring incidents like the seizure of the British-flagged *Stena Impero* in 2019, serve as potent tools of statecraft, instantly impacting global energy markets and drawing in major naval powers to ensure freedom of navigation. Moving westward, the southern entrance to the Red Sea, the **Bab-el-Mandeb strait**, has become a critical flashpoint. This narrow passage, essential for shipping accessing the Suez Canal and hence global trade, is threatened by the conflict in Yemen. Houthi rebels, controlling significant Yemeni coastline, have repeatedly targeted commercial vessels with missiles and drones, citing retaliation against Israel but impacting global shipping. These attacks, coupled with piracy concerns (though diminished from earlier peaks), necessitate significant international naval patrols (e.g., Combined Maritime Forces) and underscore how non-state actors and regional conflicts can transform vital maritime chokepoints into zones of instability, further complicating the already fraught landscape of territorial water security in the Middle East.

This survey of flashpoints beyond the Asia-Pacific reveals the pervasive nature of maritime disputes, driven by the immutable value of

1.9 The Environmental Dimension: Conflict and Conservation

The pervasive nature of maritime disputes, stretching from the strategic chokepoints of the Middle East to the newly accessible Arctic, underscores that the struggle for control over ocean spaces is rarely confined to a single driver. Yet, intertwined with the geopolitical rivalries, resource scrambles, and unresolved boundaries lies a dimension increasingly recognized as both a casualty and a catalyst of conflict: the marine environment itself. Environmental degradation, conservation imperatives, and the physical impacts of militarization are not merely secondary concerns in territorial water disputes; they actively shape their dynamics, exacerbate tensions, and create novel flashpoints, revealing the profound interconnection between ecological health and geopolitical stability in the world's contested seas.

Marine Pollution as a Source of Tension arises when environmental harm crosses invisible maritime boundaries, transforming accidents or negligence into international incidents fraught with blame and demands for reparation. Disputes over liability and compensation for transboundary pollution, particularly catastrophic oil spills, highlight the jurisdictional complexities in disputed or adjacent waters. The 2010 *Deepwater Horizon* disaster, while occurring within the undisputed US EEZ, spewed millions of barrels of oil into the Gulf of Mexico, impacting Mexican and Cuban waters and coastlines, necessitating complex international coordination and raising hypothetical questions about scenarios where the spill originated in a contested zone. More directly, the release of treated radioactive water from Japan's Fukushima Daiichi nuclear plant into the Pacific Ocean, beginning in 2023, sparked fierce protests and threats of legal action from neighboring states like China and South Korea, particularly fishing communities fearing economic and health impacts, despite International Atomic Energy Agency (IAEA) assurances of safety. The tension stems not only from environmental fears but also from historical mistrust and pre-existing maritime disputes. Pollution from land-based sources – industrial effluent, agricultural runoff, plastic waste – flowing across maritime boundaries via currents poses a chronic, less visible but equally insidious, source of friction. Coastal states downcurrent may suffer degraded fisheries and ecosystems yet lack recourse against the polluting state upstream, especially where maritime boundaries are contested. Disputes over the dumping of dredge spoil or industrial waste within a state's claimed EEZ, if impacting shared fish stocks or sensitive ecosystems traversing boundaries, can further poison diplomatic relations. The challenge of attributing harm and enforcing liability becomes exponentially harder in areas of overlapping jurisdiction, where states dispute the very authority to regulate or demand remediation. The UNCLOS obligation to protect the marine environment (Article 192) and prevent transboundary harm exists, but its enforcement mechanisms are weak in contested spaces, often leaving pollution as a simmering source of resentment rather than a resolved issue.

Protecting Sensitive Ecosystems in Disputed Areas presents a unique and frustrating paradox: the regions most in need of coordinated conservation are often precisely those where geopolitical rivalry makes cooperation impossible. Coral reefs, seamounts, spawning grounds for migratory fish, and unique deep-sea habitats frequently straddle or lie within areas of overlapping maritime claims. Establishing Marine Protected Areas (MPAs) or implementing effective fisheries management regimes requires clear jurisdiction and cooperative governance – commodities scarce in disputed waters. The South China Sea offers a stark illustration. Recognized as a global biodiversity hotspot, its coral reefs are among the world's most diverse. However,

competing sovereignty claims over islands and reefs have paralyzed regional efforts to establish a comprehensive network of MPAs or implement unified fishing bans. Instead, unilateral declarations of protected zones by one claimant are viewed with suspicion by others, seen as disguised attempts to bolster sovereignty claims rather than genuine conservation. China's establishment of seasonal fishing bans encompassing areas claimed by others, while ostensibly for conservation, is widely perceived as an assertion of administrative control. The Spratly Islands, claimed by multiple states, suffer from overfishing driven by competition and the lack of enforceable quotas, destructive fishing practices (like cyanide and blast fishing), and direct habitat destruction from island-building. The very act of transforming reefs into military outposts, involving massive dredging and landfill, annihilates the complex ecosystems that once thrived there. Similar challenges plague other contested regions. In the Arctic, melting ice opens new fishing grounds, but disagreements between coastal states (Russia, Canada, US, Denmark/Norway) and distant-water fishing nations over management regimes for Central Arctic Ocean fisheries required a specific international agreement (2018) to prevent unregulated fishing, demonstrating the foresight needed but often lacking elsewhere. The dispute over fisheries regulation around Svalbard (governed by Norway but subject to a unique treaty granting equal access to signatories) highlights how sovereignty disagreements directly impede conservation, as other states challenge Norway's strict environmental regulations within the Fisheries Protection Zone. Protecting vulnerable marine ecosystems thus becomes entangled in the web of territorial disputes, leaving them exposed to degradation precisely because their location places them beyond effective, cooperative management.

Environmental Damage from Conflict and Militarization is often the most direct and brutal consequence of territorial water disputes. Armed conflict at sea inevitably inflicts harm, ranging from oil spills resulting from sunken vessels or damaged infrastructure to the physical destruction of habitats by munitions and the toxic legacy of unexploded ordnance littering the seabed. The deliberate targeting of oil infrastructure during the Iran-Iraq "Tanker War" (1984-1988) caused massive spills in the Persian Gulf, devastating coastal ecosystems and fisheries for years. More recently, the decaying FSO *Safer* oil tanker moored off war-torn Yemen's coast presented a catastrophic environmental threat to the Red Sea, a risk only partially mitigated by a last-minute UN-coordinated operation in 2023. However, environmental damage is not solely a product of kinetic warfare. The **militarization of disputed features**, particularly large-scale land reclamation and construction, constitutes ecologically destructive state policy. China's transformation of seven reefs in the Spratly Islands involved dredging millions of tons of seabed, pulverizing living coral reefs that took millennia to form, and smothering vast surrounding areas with sediment plumes. Scientific assessments estimate the destruction of thousands of acres of pristine reef habitat, devastating biodiversity hotspots, critical fish nurseries, and natural coastal barriers. Similar, though less extensive, construction activities by Vietnam, the Philippines, and Taiwan on other features add to the cumulative damage. Military presence itself generates pollution: sewage, waste, fuel spills, noise pollution from sonar and construction disrupting marine mammals, and the physical footprint of bases and runways obliterating natural environments. Furthermore, conflict and militarization disrupt conservation monitoring and research, leaving scientists unable to access contested areas to assess damage or implement protection measures. The long-term consequences – loss of biodiversity, reduced fisheries productivity, weakened coastal resilience – ultimately harm all claimant states and the global commons. This deliberate environmental destruction has led to increasing discussion

of whether such actions, particularly when systematic and large-scale as in the South China Sea, could potentially constitute “ecocide” – the severe and widespread or long-term damage to the environment – raising profound questions about accountability under emerging norms of international environmental law. While ecocide is not yet a widely recognized international crime *per se*, the scale of environmental harm directly resulting from sovereignty disputes highlights a brutal reality: the struggle for control over the oceans often comes at the direct, irreversible expense of the marine ecosystems states purport to claim. This physical destruction, intertwined with pollution and conservation paralysis, ensures the environmental dimension is not merely a consequence of conflict, but an intrinsic, destabilizing element within the complex equation of territorial water disputes.

The intricate dance between environmental imperatives and geopolitical contests over maritime space reveals a fundamental tension: the ocean’s ecological systems operate without regard for human-drawn boundaries, yet their fate is inextricably linked to the rivalries playing out above them. As climate change further stresses marine environments and competition for resources intensifies, the potential for environmental factors to both spark new conflicts and complicate existing ones will only grow, underscoring the urgent need

1.10 Non-State Actors and Emerging Threats

The intricate interplay between environmental degradation and geopolitical contestation over maritime spaces, as explored in Section 9, underscores a fundamental reality: the ocean is a shared stage where multiple actors, not just sovereign states, play critical and often destabilizing roles. While the destructive footprint of militarization highlights state-driven environmental harm, the vast, often poorly governed expanses of the world’s oceans also provide fertile ground for non-state actors whose activities complicate territorial water conflicts, undermine state authority, and create novel security threats. Understanding these emerging dimensions is crucial to grasping the full spectrum of challenges facing maritime governance today.

Piracy and Armed Robbery at Sea remains a persistent scourge, transforming territorial waters and EEZs into zones of lawlessness and violence. Far from the romanticized image of centuries past, modern piracy is a ruthless criminal enterprise driven by opportunity, poverty, and weak governance. Its resurgence in key hotspots directly impacts territorial water conflicts by exploiting jurisdictional ambiguities and overwhelming the limited enforcement capacities of coastal states. The Gulf of Aden and waters off Somalia became synonymous with piracy in the late 2000s, as the collapse of the Somali state created a vacuum exploited by armed groups. Somali pirates, operating from ungoverned coastal areas, ventured hundreds of nautical miles to seize commercial vessels for ransom, disrupting vital shipping lanes like the Bab-el-Mandeb and triggering unprecedented international naval coalitions (e.g., Combined Task Force 151). While successful suppression efforts dramatically reduced Somali piracy by the mid-2010s, the underlying drivers – instability, lack of economic opportunity, and weak coastal state capacity – persist. The epicenter has decisively shifted to the **Gulf of Guinea**. Stretching from Senegal to Angola, this region now accounts for the vast majority of global pirate attacks, characterized by violent armed robbery, kidnappings for ransom of crew members, and oil theft directly from vessels (“petro-piracy”). Incidents frequently occur within the territorial waters and EEZs of coastal states like Nigeria, Benin, Togo, Ghana, and Ivory Coast, often close to anchor-

ages or oil infrastructure. The kidnapping of crew from the MV *Mozart* in 2021, over 200 nautical miles off Nigeria, demonstrated the audacity and reach of these groups. Piracy here thrives on complex criminal networks operating across porous maritime borders, corrupt officials, and the sheer difficulty of policing vast, congested waters. Crucially, piracy complicates territorial water disputes in several ways: it consumes scarce coast guard resources that could otherwise patrol disputed boundaries or protect fisheries; it creates safe havens in the territorial waters of weak states, potentially dragging those states into conflict if neighbors pursue pirates across boundaries; and it necessitates international naval patrols, whose presence in EEZs can itself become a point of contention, as seen with sensitivities surrounding foreign military activities in West African EEZs. The reliance on **private maritime security companies (PMSCs)** employing armed guards on merchant vessels, while effective in deterrence, introduces another layer of complexity regarding legal jurisdiction and the use of force at sea. Furthermore, piracy can exacerbate existing regional tensions; for instance, accusations of insufficient action or even complicity by neighboring states can poison diplomatic relations. The enduring challenge lies in building robust regional maritime domain awareness and prosecution capabilities, overcoming jurisdictional hurdles, and addressing the root causes on land – tasks made infinitely harder in regions already grappling with interstate maritime disputes and limited resources.

Maritime Terrorism and Trafficking exploits the same vulnerabilities as piracy but pursues distinct, often more politically motivated or criminally sophisticated objectives, posing direct threats to ports, shipping, critical offshore infrastructure, and regional stability. Maritime terrorism involves the use of violence or intimidation at sea to achieve political goals. While large-scale attacks are less frequent than piracy, their potential impact is catastrophic. The 2000 attack on the USS *Cole* in Aden harbor by Al-Qaeda, killing 17 sailors, and the 2008 Mumbai attacks launched by sea by the Pakistan-based Lashkar-e-Taiba, which killed over 160 people, remain chilling precedents. More recently, the Houthi rebels in Yemen have dramatically weaponized maritime chokepoints. Using sophisticated anti-ship ballistic missiles and drones, they have targeted commercial vessels transiting the Bab-el-Mandeb strait and the southern Red Sea since late 2023, ostensibly in solidarity with Gaza but effectively holding global shipping hostage and triggering major international naval deployments (Operation Prosperity Guardian). These attacks, occurring in proximity to disputed waters and involving complex questions of state sponsorship and the law of naval warfare, blur the lines between non-state terrorism and state-sponsored aggression, significantly heightening regional tensions and the risk of broader conflict. Simultaneously, the maritime domain is the principal conduit for **illicit trafficking** on a global scale. Drug cartels exploit vast maritime corridors, particularly across the Eastern Pacific and Caribbean, using semi-submersibles, fishing vessels, and even containers on legitimate ships to transport cocaine, methamphetamine, and heroin. The Mediterranean serves as a key route for smuggling migrants and refugees from North Africa and the Middle East towards Europe, a tragic and often deadly traffic frequently involving exploitation by criminal gangs. Arms trafficking by sea fuels conflicts worldwide, while illegal wildlife trafficking (e.g., shark fins, sea cucumbers, ivory) decimates marine ecosystems. These activities thrive in areas where maritime boundaries are disputed or enforcement is weak, as criminals deliberately exploit jurisdictional gaps. Drug runners navigate through the overlapping EEZ claims of Central and South American states, knowing coordination between navies and coast guards is often problematic. Migrant smugglers operate from the territorial waters of failed or complicit states like Libya, launching

boats into the contested search-and-rescue zones of the Mediterranean, placing a humanitarian and security burden on European nations and creating friction over disembarkation rights. Furthermore, the illicit profits from trafficking can finance insurgencies or corrupt state institutions in regions already plagued by maritime disputes, creating vicious cycles of instability. Protecting offshore oil and gas platforms, undersea cables, and port facilities from potential terrorist sabotage or criminal interference adds another layer of security complexity to already contested maritime zones.

Corporations and Resource Extraction represent a different category of non-state actor, one deeply intertwined with state power yet possessing significant agency that can fuel or mitigate conflicts. Multinational oil and gas corporations and large-scale industrial fishing conglomerates are central players in the exploitation of the very resources – hydrocarbons and fish – that drive many territorial water disputes. Their actions, driven by profit motives and shareholder pressure, can significantly influence state behavior and the dynamics of conflict. Oil majors like Shell, TotalEnergies, ExxonMobil, BP, and CNOOC possess the capital, technology, and expertise necessary to explore and develop offshore reserves. When operating in **disputed maritime zones**, their presence becomes inherently political. States eager to assert sovereignty and unlock resource wealth often grant exploration licenses or production contracts in areas claimed by neighboring states, effectively using corporations as instruments of their claim. This transforms seismic surveys and drilling rigs into geopolitical pawns, as seen repeatedly in the Eastern Mediterranean (e.g., Cyprus licensing blocks overlapping Turkish claims, Turkey granting licenses to Turkish Petroleum in RoC-claimed blocks) and near the Falklands/Malvinas (UK licensing sparking Argentine protests). Companies accepting such contracts knowingly enter a high-risk political environment, facing potential expulsion, asset seizure, or reputational damage if the dispute escalates. Their lobbying power can also influence state policy, encouraging governments to take a harder line in boundary negotiations or resist compromise to protect investments. Conversely, corporations can act as catalysts for cooperation through **Joint Development Agreements (JDAs)**, providing the technical and financial means to exploit shared resources where political agreements exist, as in the Senegal-Guinea-Bissau

1.11 Climate Change: The Rising Tide of Instability

The destabilizing influence of non-state actors and corporate interests in contested maritime spaces, as detailed in Section 10, unfolds against an even more profound and pervasive background threat: anthropogenic climate change. Far from being a distant environmental concern, the planetary crisis driven by greenhouse gas emissions is actively reshaping the physical and legal geography of the oceans, acting as a potent threat multiplier in existing territorial water conflicts and generating entirely new vectors for instability. Rising sea levels, melting polar ice, and shifting ocean chemistry are fundamentally altering coastlines, redefining access to resources and strategic passages, and introducing unprecedented legal uncertainties into the already fraught arena of maritime jurisdiction. The impacts are not gradual hypotheticals; they are measurable, accelerating, and actively transforming geopolitical realities on the ocean frontier.

Sea Level Rise: Shrinking Territories, Shifting Baselines poses the most immediate existential threat to low-lying coastal states and islands, while simultaneously destabilizing the very foundations of maritime

claims. For small island developing states (SIDS) like Kiribati, Tuvalu, the Marshall Islands, and the Maldives, where much of the landmass barely rises a few meters above current sea levels, inundation is not merely a risk but an unfolding reality. Coastal erosion, saltwater intrusion into freshwater lenses, and increasingly destructive storm surges linked to warming oceans are progressively rendering inhabited areas uninhabitable, forcing communities to consider relocation – a process Kiribati has termed “migration with dignity.” The existential crisis transcends the loss of terrestrial territory; it threatens the vast maritime zones that constitute the economic lifeblood and sovereign identity of these nations. Under UNCLOS, maritime entitlements – the territorial sea, contiguous zone, EEZ, and continental shelf – are measured from baselines, primarily the low-water line along the coast. As sea levels rise, these baselines naturally recede landward, potentially shrinking the maritime jurisdiction of *all* coastal states. However, the impact is catastrophic for SIDS, whose entire EEZ, often hundreds of times larger than their land area and critical for fisheries revenue and potential seabed resources, could legally diminish or disappear entirely if their land territory is submerged or reduced to uninhabitable rocks. This prospect has spurred a fierce legal and diplomatic campaign. States like Kiribati and Tuvalu are pioneering efforts to “freeze” their maritime boundaries based on current baselines, arguing for the stability of maritime entitlements irrespective of future physical changes. Tuvalu’s recent groundbreaking declaration, embedded within a bilateral maritime boundary treaty with Australia, explicitly seeks to preserve its maritime zones even if its land territory significantly diminishes, testing the interpretation of UNCLOS. Simultaneously, the very definition of baselines faces pressure. Rising seas threaten to submerge low-tide elevations (LTEs) that currently serve as basepoints for some states, potentially altering boundary calculations. Furthermore, unstable deltas and rapidly eroding coastlines, as seen dramatically in Louisiana or Bangladesh, complicate the establishment of stable baselines, raising questions about the long-term viability of maritime boundaries drawn from shifting sands. The legal uncertainty is profound: does the principle of stability of boundaries, a cornerstone of international law, apply to the ambulatory baselines from which maritime zones are derived? The answers will determine the fate of nations and reshape the map of ocean jurisdiction.

Simultaneously, the dramatic Melting Arctic: A New Ocean of Competition is unfolding at the planet’s northern extreme, transforming a once inaccessible frozen frontier into a zone of intense geopolitical rivalry and resource scramble. The retreat of summer sea ice, occurring at a pace exceeding most scientific projections, is opening two historically impassable sea routes: the Northwest Passage (NWP) through Canada’s Arctic archipelago and the Northern Sea Route (NSR) along Russia’s Siberian coast. The NSR, in particular, offers a potential revolution in global shipping, cutting the distance between East Asia and Western Europe by nearly 40% compared to the Suez Canal route. Russia, viewing the NSR as a vital national interest and economic corridor, has invested heavily in icebreaker fleets, port infrastructure, and navigational aids, while also asserting extensive regulatory control. Moscow demands mandatory notification, fees, icebreaker pilotage, and restricts navigation based on stringent interpretations of UNCLOS Article 234 (Ice-Covered Areas), treating the route essentially as internal waters. This stance is fiercely contested by the United States and several allies, who argue the straits constituting the NSR meet the criteria for international straits with transit passage rights under UNCLOS Part III, meaning ships and aircraft should be able to pass freely without prior authorization or restrictive conditions. US Coast Guard icebreakers have conducted FONOPs to

challenge these claims. Alongside the shipping race, the receding ice unveils access to potentially vast, untapped reserves of oil, natural gas, and minerals, as well as valuable fisheries expanding northward. While the Arctic coastal states (Russia, Canada, US, Denmark via Greenland, Norway) have largely settled their bilateral maritime boundaries through submissions to the Commission on the Limits of the Continental Shelf (CLCS) – with Russia notably resubmitting an expansive claim including the North Pole – the central Arctic Ocean beyond national EEZs presents a new challenge. The 2018 Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean, signed by major fishing nations and Arctic states, demonstrates proactive but fragile cooperation. However, Russia’s extensive militarization of its Arctic coastline, deploying advanced anti-ship and air defense systems and reopening Soviet-era bases, signals a strategy of dominance fueled by both the perceived threat to the NSR and the desire to secure exclusive access to resources. The potential for incidents between naval patrols, competing resource exploration activities, and the inherent difficulties of search and rescue or environmental response in this harsh, remote environment create a volatile mix where climate change has directly birthed a new arena for 21st-century great power competition.

Furthermore, Ocean Acidification and Fisheries Displacement, less visually dramatic than vanishing islands or melting ice caps, are driving insidious changes beneath the waves that directly threaten food security and ignite new resource conflicts. As the oceans absorb roughly 30% of anthropogenic CO₂ emissions, the resulting chemical reaction increases seawater acidity. This process, ocean acidification, impedes the ability of marine organisms like corals, shellfish, plankton, and some fish larvae to build their calcium carbonate shells and skeletons. The cascading effects disrupt marine food webs, potentially leading to reduced growth, reproduction, and survival for numerous commercially vital species. Simultaneously, rising sea temperatures are causing fish stocks to migrate poleward in search of cooler waters, shifting away from their traditional grounds. This phenomenon, termed “fisheries displacement,” has profound implications for maritime jurisdiction. Stocks that once resided predominantly within the EEZ of one state may move into the EEZ of a neighbor or onto the high seas, while stocks straddling EEZ boundaries or migrating between EEZs and the high seas alter their distribution patterns. The consequences are already visible. The North Atlantic has witnessed the “Mackerel Wars,” where shifts in mackerel distribution led Icelandic and Faroese vessels to claim larger shares outside traditional EU/Norwegian management areas, triggering years of acrimonious quota disputes within the North East Atlantic Fisheries Commission (NEAFC). Similarly, Pacific salmon are experiencing range shifts impacting allocations between the US, Canada, and Russia. As stocks move, coastal states find their established fishing rights and economies undermined, while new entrants seek access based on the presence of fish

1.12 Navigating the Future: Challenges and Prospects

The profound disruptions wrought by climate change – shrinking islands, melting ice, acidifying oceans, and migrating fish stocks – amplify the already volatile mix of drivers fueling territorial water conflicts worldwide. As explored in Section 11, these environmental transformations are not merely future threats but present realities, fundamentally altering coastlines, redefining resource access, and introducing unprece-

dented legal ambiguities. Navigating this turbulent future demands a clear-eyed assessment of the persistent obstacles, the transformative potential of emerging technologies, the pathways towards constructive cooperation, and the ever-present, paramount imperative of peaceful resolution. The challenges are immense, rooted in the enduring tension between sovereign ambition and collective governance, yet the consequences of failure – escalating conflict in an era of climate crisis – are too grave to contemplate.

The persistent challenge of reconciling the rule of international law, particularly the United Nations Convention on the Law of the Sea (UNCLOS), with the realities of power politics and national interest remains the bedrock obstacle. While UNCLOS provides an indispensable legal framework, its effectiveness hinges crucially on state compliance and the willingness of powerful actors to submit to its dispute settlement mechanisms or negotiated outcomes perceived as contrary to their strategic goals. The starkest example remains China’s comprehensive rejection of the 2016 *Philippines v. China* arbitral award concerning the South China Sea. Beijing’s dismissal of the tribunal’s jurisdiction, its refusal to participate, and its subsequent militarization of disputed features despite the ruling’s clear legal findings demonstrate the limits of compulsory procedures when faced with determined non-compliance backed by significant military and economic power. This defiance is not isolated. Major maritime powers, including the United States, leverage their influence, sometimes operating in legal gray zones or employing coercive tactics short of armed conflict. The proliferation of “gray zone” strategies – employing coast guard and maritime militia vessels for aggressive patrols, land reclamation to create facts on the ground, economic coercion, and strategic disinformation campaigns – allows states to assert claims and pressure adversaries while deliberately operating below the threshold that would trigger a traditional military response or robust international condemnation. Russia’s assertive actions in the Sea of Azov, restricting Ukraine’s access following the annexation of Crimea, exemplify this approach. Furthermore, the inherent ambiguities within UNCLOS itself, such as the permissible scope of military activities in another state’s EEZ or the precise definition of an island versus a rock, provide fertile ground for competing interpretations that powerful states can exploit to justify their actions. The result is a global maritime order where the legal scaffolding exists but is persistently strained by the assertion of national interest, often leaving weaker states feeling the framework offers insufficient protection against coercion, as witnessed in the Eastern Mediterranean where Turkish drilling in Cypriot-claimed blocks proceeds despite EU sanctions and international censure. This enduring tension between *de jure* principles and *de facto* power dynamics ensures that maritime disputes will remain potent sources of friction.

Simultaneously, rapid technological advancements are profoundly reshaping the nature of maritime competition, surveillance, and resource exploitation, introducing both new risks and potential tools for management. The ability to monitor vast ocean spaces has undergone a revolution. Networks of satellites equipped with synthetic aperture radar (SAR), optical imaging, and radio frequency detection provide near-real-time tracking of vessel movements, enabling states to monitor fishing fleets, naval deployments, and suspicious activities within their own claimed zones and deep into disputed areas or the high seas. Initiatives like the Pacific Islands Forum Fisheries Agency’s (FFA) satellite-based vessel monitoring system exemplify how technology can empower smaller states to combat illegal fishing. Unmanned systems – aerial drones (UAVs), unmanned surface vessels (USVs), and autonomous underwater vehicles (AUVs) –

offer persistent, lower-cost surveillance capabilities, reducing the risks associated with manned patrols in tense environments. However, this enhanced transparency is a double-edged sword. While it can deter illicit activities and provide evidence for disputes, it also enables more precise coercion and escalatory actions. Knowing the exact location of a rival survey vessel or fishing fleet allows for targeted harassment. Advanced seabed mapping technologies, crucial for defining continental shelf extents under UNCLOS Article 76 and identifying resource potential, also become tools for strategic advantage when deployed in contested zones, as seen with China's extensive surveys across the South China Sea. The impending era of **commercial deep-sea mining**, targeting polymetallic nodules, cobalt-rich crusts, and seafloor massive sulphides in areas beyond national jurisdiction (the Area) governed by the International Seabed Authority (ISA), presents a new frontier for potential conflict. While regulated, competition for lucrative exploration contracts, disputes over environmental standards, and the sheer technological and financial barriers favoring powerful states and corporations could spark tensions reminiscent of historical resource scrambles. Furthermore, the growing **cyber vulnerability** of maritime infrastructure adds a critical dimension. Port management systems, offshore oil and gas platforms, navigation aids, and even shipboard systems are increasingly networked and reliant on digital controls. Successful cyberattacks could cripple shipping, disrupt resource extraction, cause environmental disasters, or manipulate vessel tracking data, creating chaos and potentially triggering kinetic responses in already tense regions. The 2017 NotPetya malware attack, which severely disrupted Maersk's global port operations, offered a stark preview of this threat. Securing the maritime domain now demands robust cybersecurity alongside traditional naval power, adding a complex layer to national security strategies in contested waters.

Despite these formidable challenges, pathways exist for mitigating conflict and fostering cooperation, requiring political will, innovative governance, and leveraging scientific diplomacy. Strengthening **regional cooperation mechanisms** is paramount. Existing bodies like Regional Fisheries Management Organizations (RFMOs) need enhanced mandates, resources, and political backing to effectively manage shared stocks amidst climate-driven shifts and prevent fisheries disputes from escalating. Confidence-building measures, such as hotlines between naval commands, joint patrols in sensitive areas (even if focused on non-traditional security threats like piracy or pollution), and standardized protocols for maritime encounters (like the Code for Unplanned Encounters at Sea - CUES), can reduce the risk of miscalculation. **Innovative provisional arrangements** remain crucial tools for managing resources in areas where final boundary delimitation is politically intractable. Joint Development Agreements (JDAs), while difficult to negotiate, offer a proven model for sharing hydrocarbon resources pending resolution, as successfully demonstrated in the Timor Sea between Australia and Timor-Leste following the UNCLOS conciliation. Expanding this concept to encompass broader "joint management zones" could include shared fisheries management, cooperative environmental protection, and collaborative scientific research within disputed areas. The innovative treaty between Seychelles and Mauritius establishing a joint management zone for the vast Mascarene Plateau region, setting aside sovereignty claims to focus on shared stewardship, offers a promising template. **Science diplomacy** plays an increasingly vital role. Technical commissions, such as those established under UNCLOS for continental shelf submissions, provide neutral forums where scientists from claimant states can collaborate on data collection and analysis, building trust and establishing shared facts that can inform even-

tual political or legal settlements. Joint scientific surveys of fish stocks or shared hydrocarbon reservoirs, even in contested areas, can provide objective baselines for management decisions, as attempted tentatively in the South China Sea before political pressures intervened. Adapting governance frameworks to the realities of climate change is also critical. Supporting initiatives to “freeze” maritime boundaries for vulnerable island states and developing international norms to address baseline ambulation and disappearing statehood are urgent tasks for the international community to ensure equity and stability.

Ultimately, the imperative for peaceful resolution transcends legal mechanisms, technological solutions, or resource-sharing formulas; it is a fundamental necessity for global stability and ecological survival. The catastrophic risks of maritime conflict escalation in the 21st century are undeniable. Naval confrontations in congested chokepoints like the Strait of Hormuz or the South China Sea could instantly disrupt global supply chains and energy flows, triggering economic shockwaves. The involvement of nuclear-armed powers in disputes like the East China Sea Senkaku/Diaoy