Fish Wars: Climate and Fisheries Conflict in the South China Sea

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Nicoline Petersen



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The Climate-Security Nexus in Contested Waters

Climate change is no longer exclusively an environmental crisis or an ecological concern confined to scientific policy circles; it has evolved into a profound, multi-dimensional security challenge that is fundamentally reshaping global geopolitical affairs (Mendenhall et al., 2020; World Meteorological Organization [WMO], 2026). The thermal expansion of oceans, shifts in global precipitation regimes, rapid ocean acidification, and the escalating frequency of catastrophic, extreme weather events are increasingly recognized by defense strategists and international legal scholars as critical mechanisms that exacerbate pre-existing political vulnerabilities, erode institutional stability, and intensify competition over finite natural resources (WMO, 2026).

Within international security literature, climate change is frequently conceptualized as a "threat multiplier"—a systemic phenomenon that amplifies socio-economic stress, destabilizes fragile governance structures, and lowers the threshold for militarized interstate friction (Mendenhall et al., 2020). Nowhere is this threat multiplier effect more visible or dangerous than in the semi-enclosed basin of the South China Sea. In this maritime region, rapidly warming sea surface temperatures, catastrophic coral reef degradation, and declining wild fish stocks are intersecting directly with deep-seated sovereign territorial disputes, transforming ecological degradation into a core driver of regional naval militarization and strategic instability.

The South China Sea supports the foundational food security, coastal employment, and nutritional livelihoods of hundreds of millions of people across Southeast Asia and southern China, ranking among the planet's most bio-diverse and productive marine ecosystems (Pomeroy et al., 2016, as cited in Mendenhall et al., 2020). However, this crucial biological engine is facing unprecedented, simultaneous pressure from ecological collapse and geopolitical confrontation. The convergence of climate-driven shifts in fish stock distributions and decades of unsustainable, subsidized industrial overfishing has created a highly volatile environment. In this space, the competition over access to dwindling marine resources is intensifying, and the probability of militarized fisheries conflicts is rising exponentially (Mendenhall et al., 2020).

The South China Sea therefore provides a primary global case study of how rapid environmental change strains existing international law, tests the limits of sovereign maritime boundary regimes under the United Nations Convention on the Law of the Sea (UNCLOS), and reshapes regional security dynamics in a warming world.

Climate Change, Oceanographic Transformation, and the Race for Fish

The physical impacts of global anthropogenic climate change—including thermal ocean warming, marine heatwaves, sea-level rise, and ocean acidification—are altering marine ecosystems on a planetary scale (Mendenhall et al., 2020; Pecl et al., 2017). Ocean warming, driven by global atmospheric heat absorption, is inducing a massive, systemic redistribution of marine biodiversity (Pecl et al., 2017). As sea surface temperatures exceed the thermal tolerance thresholds of key pelagic and demersal species, marine organisms are undergoing poleward pole-ward shifts or moving deeper into cooler water columns to maintain physiological homeostasis (Pecl et al., 2017).

These thermal migration patterns alter the spatial availability of commercially vital fish stocks. Tropical enclosed basins, such as the South China Sea, are particularly vulnerable to these ecological shifts. Marine

species are forced to migrate out of historical exclusive economic zones (EEZs) and artisanal fishing grounds, crossing international boundaries and entering contested waters where sovereignty remains aggressively disputed (Mendenhall et al., 2020; Pecl et al., 2017).

In the South China Sea, these climate-driven ecological dislocations intersect with longstanding, multi-party territorial disputes. Overlapping, irreconcilable maritime claims involving China, the Philippines, Vietnam, Malaysia, Brunei, and Taiwan create a fragile political landscape where the movement of pelagic fish populations quickly translates into interstate friction (Mendenhall et al., 2020). Climate change does not create these underlying territorial claims, but it significantly alters the resource environment in which they play out.

These environmental stresses are further compounded by Illegal, Unreported, and Unregulated (IUU) fishing activities. According to the Stimson Center's regional risk assessments, the South China Sea remains one of the world's most high-risk environments for IUU fishing, driven by weak regional governance, massive state-backed fuel subsidies, market demand, and severe enforcement gaps (Stimson Center, 2025).

As nearshore fisheries collapse due to decades of over-extraction, artisanal fishers and commercial industrial trawlers are forced to venture hundreds of nautical miles from their home coasts. Equipped with larger vessels and navigational technology, these fleets routinely cross contested Exclusive Economic Zones (EEZs) and approach disputed maritime features—such as Scarborough Shoal, the Spratly Islands, and the Paracel Islands—to maintain commercially viable catch rates (Mendenhall et al., 2020; Spijkers et al., 2019).

This dynamic creates a dangerous "race-for-fish." Spijkers et al. (2019) emphasize that maritime resource conflicts are rarely triggered by a single environmental shock. Instead, they arise from the continuous, compounding interaction of ecological change, political friction, economic necessity, and sovereign competition over dwindling stocks. In regions where coastal communities rely on marine protein for basic nutrition and employment, ecological degradation directly degrades national security and international stability.

The Securitization of Fisheries and Gray-Zone Tactics

In a warming world characterized by resource scarcity, fishing grounds are increasingly evaluated through a strategic geopolitical lens rather than purely as economic or ecological domains (Mendenhall et al., 2020). Across the Indo-Pacific, fisheries disputes have undergone rapid securitization—a process wherein state actors reframe resource access and fishing activity from routine economic and regulatory matters into existential security concerns requiring state enforcement, paramilitary deployment, and military power (Mendenhall et al., 2020; Spijkers et al., 2019).

Coastal states across the South China Sea increasingly deploy state power to assert exclusive rights over marine living resources. This includes sending expanded coast guard fleets, maritime law enforcement agencies, and naval assets to escort domestic fishing fleets, forcibly expel foreign fishers, arrest rival crews, and assert sovereign rights over disputed waters (Mendenhall et al., 2020).

The People's Republic of China (PRC) has operationalized this strategy at scale, pioneering a three-tiered maritime architecture that blends civilian, paramilitary, and naval power to project sovereignty across its sweeping "nine-dash line" claims (PCA, 2016). This architecture integrates:

1. **The Commercial Civilian Fishing Fleet**: Acts as a frontline presence to establish historical operational footprint and capture marine resources.
2. **The People's Armed Forces Maritime Militia (PAFMM)**: Uses state-subsidized, heavy-hulled commercial fishing vessels equipped with military-grade communications to swarming maritime features, block rival state access, and execute gray-zone operations below the threshold of open armed conflict.
3. **The China Coast Guard (CCG) and People's Liberation Army Navy (PLAN)**: Operates as a heavily armed backstop, employing water cannons, long-range acoustic devices, ramming maneuvers, and military surveillance to intimidate rival claimants and protect Chinese vessels.

This gray-zone strategy intentionally blurs the legal line between civilian economic enterprise and state-directed military force, posing severe challenges to international law (PCA, 2016; Spijkers et al., 2019). By using civilian fishing fleets as proxy instruments of territorial expansion, state actors create severe operational ambiguity.

When a nation's coast guard responds to an illegal fishing incursion within its recognized exclusive economic zone, it risks encountering heavily armed maritime militia or coast guard vessels operating under broad engagement rules. This integration of fisheries and naval power dramatically increases the risk of operational miscalculation, where a routine fisheries enforcement action can escalate into a diplomatic standoff or armed military confrontation (Spijkers et al., 2019). Fishing vessels are no longer merely economic units; they have been converted into physical assertions of sovereignty and instruments of state power.

Scarborough Shoal: Flashpoint of Fisheries, Sovereignty, and Power Projection

Scarborough Shoal (known as *Bajo de Masinloc* in the Philippines and *Huangyan Dao* in China) represents one of the most volatile flashpoints in the South China Sea. Situated approximately 120 nautical miles west of the Philippine island of Luzon—well within the Philippines' 200-nautical-mile Exclusive Economic Zone—and over 470 nautical miles from China's

nearest coastline on Hainan Island, Scarborough Shoal is a high-value geographic feature (PCA, 2016; Dang & Trang, 2025).

The shoal consists of a triangular chain of reefs and rocks surrounding a rich, sheltered lagoon. It provides critical spawning grounds and nursery habitats for commercially vital pelagic and reef fish species across the broader regional ecosystem (PCA, 2016; Dang & Trang, 2025). For generations, artisanal fishers from the Philippines, Vietnam, and China utilized the lagoon as both a safe refuge from high-seas storms and an abundant traditional fishing ground (PCA, 2016).

However, in April 2012, Scarborough Shoal became the site of a tense standoff when Philippine Navy assets attempted to arrest Chinese fishers who had harvested endangered giant clams, corals, and sharks inside the lagoon. In response, China dispatched coast guard and maritime surveillance vessels to block Philippine law enforcement, leading to a prolonged confrontation.

Following a negotiated withdrawal brokered by international third parties, Chinese maritime forces maintained effective physical control around the shoal (PCA, 2016). Since 2012, Beijing has maintained a continuous presence of China Coast Guard and maritime militia ships around Scarborough Shoal, restricting access to the lagoon and periodically driving away Filipino fishers using water cannons, acoustic devices, and physical vessel blockades (PCA, 2016; Dang & Trang, 2025).

The dispute over Scarborough Shoal was a primary driver behind the Philippines' decision to initiate historic legal proceedings against China under Annex VII of UNCLOS in January 2013 (PCA, 2016). In its unanimous landmark award issued on July 12, 2016, the Arbitral Tribunal at the Permanent Court of Arbitration reached several critical legal conclusions regarding Scarborough Shoal and maritime resource management:

- **Invalidation of Historic Rights**: The Tribunal ruled that China's claims to historic rights or sovereign resources within the "nine-dash line" were legally invalid to the extent they exceeded the explicit geographic limits of maritime entitlements established under UNCLOS (PCA, 2016).
- **Traditional Fishing Rights**: The Tribunal determined that Scarborough Shoal constitutes a high-tide feature entitled only to a 12-nautical-mile territorial sea, and that artisanal fishers from both the Philippines and China possessed long-standing, traditional fishing rights within the shoal's lagoon (PCA, 2016).
- **Interference with Sovereign Rights**: The Tribunal found that China had unlawfully interfered with the traditional fishing rights of Filipino fishers by physically blocking their access to the shoal after May 2012 (PCA, 2016).
- **Failure to Prevent Ecological Damage**: The Tribunal held that China had breached its international legal obligations under Article 192 and Article 194 of UNCLOS to protect and preserve the marine environment by tolerating and actively escorting Chinese fishing fleets engaged in the

destructive harvesting of endangered giant clams, sea turtles, and coral reef ecosystems around Scarborough Shoal and the Spratly Islands (PCA, 2016).

Despite the legally binding nature of the 2016 Arbitral Award under international law, China explicitly rejected the tribunal's jurisdiction and declared the decision "null and void." Over the subsequent decade, confrontation around Scarborough Shoal has continued to escalate.

In late April 2026, the People's Liberation Army Southern Theater Command conducted combat readiness air and naval patrols around Scarborough Shoal (Reuters, 2026a). These exercises were executed in direct response to large-scale joint military and maritime maneuvers conducted by Philippine and United States armed forces in surrounding waters under the framework of the bilateral Visiting Forces Agreement (Reuters, 2026a).

More recently, in mid-2026, diplomatic protests erupted after the Philippine Coast Guard identified and documented a long, floating barrier deployed by Chinese vessels across the mouth of Scarborough Shoal lagoon, designed to physically deny entry to Philippine small-scale fishers (Reuters, 2026b). While Chinese foreign ministry officials defended these installations as legitimate marine spatial management and "comprehensive scientific research" assets, Manila condemned the barriers as illegal sovereign overreach that threatened coastal livelihoods (Reuters, 2026b).

These developments demonstrate how fisheries access, legal arbitration, non-lethal gray-zone tactics, and major-power geopolitical balancing are tightly intertwined around a single, ecologically fragile maritime feature.

Environmental Degradation: Island Building and Ecological Destruction

The environmental costs of militarized maritime disputes in the South China Sea extend far beyond the over-extraction of wild fish stocks; they include severe physical destruction of fragile marine ecosystems. The 2016 Arbitral Tribunal evaluated detailed oceanographic, satellite, and ecological evidence, concluding that China's large-scale land reclamation, island-building operations, and artificial construction projects across the Spratly Islands caused irreversible damage to critical coral reef ecosystems (PCA, 2016).

Between 2013 and 2016, state-owned Chinese dredging fleets deployed cutter-suction vessels across major features in the Spratlys—including Mischief Reef, Subi Reef, Fiery Cross Reef, Hughes Reef, Johnson South Reef, Cuarteron Reef, and Gaven Reef—creating over 3,000 acres of artificial land to support military runways, deep-water harbors, radar installations, and missile emplacements (PCA, 2016). The physical process of dredging involved grinding up live, high-biodiversity coral reef crests and pumping millions of metric tons of sand, silt, and crushed limestone over living lagoons (PCA, 2016).

This dredging process generated massive, persistent sediment plumes that drifted across surrounding reef systems, smothering benthic habitats, blocking sunlight essential for coral photosynthesis, and killing marine life across vast areas of the ocean floor (PCA, 2016). Marine biologists estimate that these land reclamation activities permanently destroyed thousands of hectares of living coral reefs that had functioned for millennia as primary spawning and larval dispersal centers for pelagic species across the South China Sea.

Furthermore, the 2016 Arbitral Tribunal documented severe, deliberate environmental damage caused by specialized Chinese harvesting methods in the Spratlys and around Scarborough Shoal (PCA, 2016). To harvest rare giant clam (*Tridacna gigas*) shells, which are highly valued as luxury commodities and carving materials in mainland China, fishing crews used customized boat propellers mounted on long shafts to cut up coral reef flats (PCA, 2016).

These propeller-harvesting operations shredded entire reef ecosystems, destroying hundreds of square kilometers of healthy coral reefs (PCA, 2016). The Tribunal found that Chinese law enforcement vessels were aware of these practices and actively protected domestic fleets engaged in these illegal operations within contested waters (PCA, 2016).

The destruction of these coral reef systems undermines the long-term ecological foundation of regional fisheries. Coral reefs occupy less than 0.1% of the global ocean floor, yet they support over 25% of all marine life, acting as critical feeding, breeding, and nursery grounds for pelagic species that sustain coastal populations across Southeast Asia. Destroying these habitat engines while climate change accelerates ocean warming severely impairs the marine ecosystem's ability to recover, pushing regional fisheries toward systemic collapse.

From Competition to Cooperation: Institutional Governance Realities

Despite escalating security risks and habitat destruction, current international legal regimes, regional institutions, and multilateral governance structures remain ill-equipped to address the complex interplay of climate change, fisheries depletion, and maritime boundary disputes (Mendenhall et al., 2020; Spijkers et al., 2019). The primary structural limitation stems from the territorial focus of UNCLOS itself. UNCLOS operates under a territorial state framework that grants coastal nations sovereign rights over living resources within a 200-nautical-mile Exclusive Economic Zone (Article 56) and obligates states to cooperate in managing straddling and highly migratory fish stocks (Articles 63 and 64).

However, climate change disrupts this legal model by driving fish stocks across state lines and un-demarcated maritime boundaries (Mendenhall et al., 2020; Pecl et al., 2017). Existing Regional Fisheries Management

Organizations (RFMOs) often lack real-time stock assessment capabilities, dynamic spatial management tools, and binding enforcement mechanisms needed to manage climate-induced stock shifts (Mendenhall et al., 2020).

In the South China Sea, establishing an effective RFMO is blocked by unresolved sovereignty disputes. States are reluctant to enter binding multilateral management agreements or share fisheries catch data out of fear that doing so could compromise their underlying territorial claims or signal tacit recognition of rival claims.

Despite these structural hurdles, legal scholars, oceanographers, and security analysts have proposed several pathways to transition from confrontation to sustainable resource management:

1. Joint Scientific Research and Marine Environmental Benchmarking

Scientific collaboration provides a politically neutral platform for interstate engagement. Developing joint marine scientific research initiatives —focused on tracking sea surface temperatures, assessing regional larval flows, mapping coral bleaching, and measuring fish biomass—allows claimant states to build common empirical baselines without directly addressing sovereign boundaries (Spijkers et al., 2019). Initiatives modeled after the historic Joint Oceanographic Marine Scientific Research Expeditions (JOMSRE) conducted by the Philippines and Vietnam demonstrate that scientific cooperation can build trust and generate valuable data for managing regional ecosystems.

2. Provisional Measures and Coordinated Fisheries Agreements

Under Article 74(3) and Article 83(3) of UNCLOS, states with overlapping maritime boundary claims are legally obligated to make every effort to enter into practical, provisional arrangements during transition periods. These provisional measures must not jeopardize or hamper reaching a final boundary agreement.

Claimant states could establish joint management zones, seasonal fishing moratoriums based on shared ecological data, and standardized cross-border vessel monitoring systems (VMS) across disputed areas (Mendenhall et al., 2020). By setting aside sovereign claims to establish shared resource management protocols, states can halt over-extraction while keeping legal options open.

3. The Scarborough Peace Park Framework

An innovative proposal involves converting highly contested features into transboundary Marine Protected Areas (MPAs). Dang and Trang (2025) argue that establishing a “Scarborough Peace Park” could de-escalate tensions surrounding Scarborough Shoal.

Under this model, claimant states would pause unilateral military deployments and maritime militia presence around the shoal, delegating environmental stewardship to a joint management commission composed of regional scientists, conservationists, and coast guard representatives (Dang & Trang, 2025).

The peace park model would freeze all commercial extraction inside the shallow lagoon, turning the shoal into a no-take biological sanctuary to replenish fish stocks throughout the regional ecosystem (Dang & Trang, 2025). This approach draws inspiration from successful international precedent, such as the Antarctic Treaty System and the Red Sea Peace Park, demonstrating that shared environmental preservation can build trust in contested spaces.

Conclusion: Reframing Maritime Governance for a Warming Century

The South China Sea demonstrates how anthropogenic climate change alters geopolitical relationships without acting as a direct, singular cause of armed conflict. By warming ocean waters, shifting marine ecosystems, damaging fragile habitats, and intensifying competition over declining fish stocks, climate change strains traditional maritime governance frameworks and raises the strategic stakes of territorial disputes (Mendenhall et al., 2020; Pecl et al., 2017).

The traditional model of maritime sovereignty—built on fixed geographic zones, exclusive resource extraction rights, and militarized coastal enforcement—is ill-suited for a warming world. When living marine resources shift across legal lines and fragile coral ecosystems face severe environmental stress, relying on unilateral power projection and gray-zone coercion accelerates ecological degradation and increases the risk of regional militarized conflict.

For national policymakers, legal scholars, and defense strategists, the policy mandate is clear: maritime security and ecological sustainability are inextricably linked. Managing marine resources through a climate-security framework is essential for environmental survival and regional peace.

The future stability of the South China Sea—and the food security of the millions who depend on it—will ultimately depend on whether claimant states choose joint stewardship over unilateral confrontation. By establishing flexible, climate-resilient regional institutions capable of managing shared ecological systems, states can build a stable, sustainable maritime order for the twenty-first century.

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