



SIGn Jurnal Hukum

E-ISSN: 2685 – 8606 || P-ISSN: 2685 – 8614

<https://jurnal.penerbitsign.com/index.php/sjh/article/view/v7n2-37>

Vol. 7 No. 2: October 2025 - March 2026

Published Online: February 6, 2026

Article Title

The Legality of Okinotorishima's Islandization under UNCLOS: Implications for Indonesia's Basepoint Preservation Strategies

Author(s)

Tri Widiastuti

Universitas Brawijaya, Indonesia // tri.widiastuti@ub.ac.id

Fazal Akmal Musyarri*

Universitas Brawijaya, Indonesia // fazal.akmalmusyarri@ub.ac.id

*Corresponding Author

How to cite:

Widiastuti, T., & Musyarri, F. A. (2026). The Legality of Okinotorishima's Islandization under UNCLOS: Implications for Indonesia's Basepoint Preservation Strategies. *SIGn Jurnal Hukum*, 7(2), 1243-1259. <https://doi.org/10.37276/sjh.v7i2.618>



This work is licensed under a CC BY-4.0 License

ABSTRACT

The escalation of maritime realism in East Asia has driven coastal states to manipulate the characteristics of geographical features using advanced technology to expand jurisdiction, a phenomenon that has manifested in its most extreme form in the Okinotorishima dispute. This research aims to analyze the legal validity of Japan's technological interventions to maintain Okinotorishima's status as an island under the UNCLOS regime. Utilizing a normative legal research method within an interdisciplinary framework, this study conducts a juridical examination of Ocean City's planning research and the mass coral propagation project (coral pegs). These technical facts are then tested dialectically using the natural condition doctrine and the jurisprudence of the 2016 PCA Award. The results show that although the concrete infrastructure and bio-engineering successfully prevent physical erosion, this success lacks legal equivalence. Such artificial modifications are considered installations that fail to meet the natural capacity requirements to sustain life, rendering the feature's status as a "rock" not entitled to an Exclusive Economic Zone. This research identifies this practice as an Islandization strategy, a form of lawfare that uses technology to create material hegemony atop a legal legitimacy void. As a strategic implication, the research recommends that Indonesia reject such an artificial expansion model and adopt the Eco-Technological Defense paradigm. This strategy focuses on restoring the ecological functions of basepoints on outermost small islands threatened by abrasion, such as in Bengkalis and Natuna, to secure sovereignty without violating the integrity of the international law of the sea.

Keywords: Eco-Technological Defense; Islandization; Lawfare; Okinotorishima; UNCLOS.

INTRODUCTION

The maritime security landscape in East Asia in the third decade of the 21st century has undergone a fundamental shift. This shift moves away from conventional boundary disputes toward a hybrid form of competition that combines legal maneuvering and technological engineering. This phenomenon is no longer merely driven by economic necessities for marine resources but has evolved into a manifestation of "maritime realism." In this context, physical control over minor maritime features serves as a primary proxy for state hegemony (Matsuda, 2020; Midford & Østhagen, 2024). Within this anarchic arena, international law of the sea is often not used as a guideline for compliance but rather as an instrument of lawfare to justify jurisdictional expansion over geographically fragile features (Guilfoyle, 2019). One of the most extreme case studies of this dynamic is the dispute over the status of Okinotorishima. This remote atoll in the Western Pacific has become a focal point where Japanese geopolitical ambitions converge with the limitations imposed by the physical criteria established by the United Nations Convention on the Law of the Sea (UNCLOS).

Okinotorishima presents a complex legal paradox. Physically, this feature is merely a collection of coral rocks undergoing critical erosion and is threatened with complete submersion at high tide (Yoshikawa, 2007; Arai, 2019). However, Japan insists on classifying it as an "island" and granting it an Exclusive Economic Zone (EEZ) covering more than 400,000 km². This claim proportionally exceeds the land area of its

mainland territory (Song, 2009; Xue, 2011). Tension arises when this claim confronts Article 121(3) of UNCLOS, which explicitly limits maritime rights for “rocks” incapable of sustaining human habitation or an economic life of their own. Instead of accepting these natural conditions, Japan responds with massive technological intervention, ranging from the construction of concrete infrastructure in Ocean City (Watanabe et al., 2014) to biological engineering through mass coral propagation (coral pegs) (Sato et al., 2010; Omori, 2011; Omori et al., 2016). This practice gives rise to what Wirth (2023) terms the phenomenon of Islandization, a systematic effort to harden fluid sovereignty into solid territorial barriers through material manipulation.

Previous academic discourse on Okinotorishima has tended to be polarized within separate disciplinary silos. Classical legal studies, such as those by Song (2009) and Xue (2011), provide in-depth analyses of the dispute’s history and textual interpretations of UNCLOS. However, their analyses have not fully reached the implications of modern technology following the 2016 Award of the Permanent Court of Arbitration regarding the South China Sea Arbitration (2016 PCA Award). Conversely, technical literature, such as reports by Watanabe et al. (2014) and Sadeghi and Musa (2019), presents detailed specifics on the feasibility of semi-submersible structures and Ocean Thermal Energy Conversion (OTEC). Unfortunately, this literature is absent in its review of the legality of such structures under the “artificial island” doctrine. This gap is the focus of this research. There is a scarcity of literature that specifically conducts a juridical examination of the validity of these civil engineering and bioengineering proposals *vis-à-vis* the legal doctrine of *Piling Pelion on Ossa* (Lewis, 2021) and the “natural condition” standards tightened by international jurisprudence (Gau, 2019).

This research aims to fill this gap by offering an interdisciplinary synthesis that tests technical facts using normative legal parameters. The novelty of this research lies in the juridical examination approach toward Japan’s use of “coral pegs” and protective concrete. This examination aims to prove that such interventions, rather than strengthening, actually weaken the claim to island status under international law. This analysis is not only relevant for law of the sea studies but also holds practical urgency for Indonesia. As an Archipelagic State facing threats of abrasion at its outermost basepoints, Indonesia requires a legal and sustainable foundation for preservation strategies. Therefore, this research is expected to provide a critical evaluation framework for policymakers in distinguishing between legitimate conservation efforts (preservation) and unlawful territorial manipulation (artificial expansion).

METHOD

This research employs a normative legal research method to examine international legal principles and norms in response to developments in marine

technology (Qamar & Rezah, 2020). Given the complexity of the object of study, which involves both legal and technical aspects, this research applies an interdisciplinary approach combining doctrinal legal analysis with a review of material facts from civil engineering and marine biology. The statute approach serves as the primary analytical tool to examine UNCLOS. The focus of this examination is Articles 121 on the Regime of Islands and 60 on Artificial Islands, and Part XII on the protection of the marine environment. Furthermore, a case approach is applied to dissect the *ratio decidendi* of the 2016 PCA Award. This Award functions as an authoritative precedent in interpreting the definition of the "natural condition" of a maritime feature.

The data sources used in this research consist of primary legal materials, secondary legal materials, and non-legal materials (Sampara & Husen, 2016). Primary legal materials include international convention texts (UNCLOS) and international court decisions. Secondary legal materials comprise books, reputable scientific journals, and reports discussing maritime feature modification and critical interpretations of lawfare. Meanwhile, non-legal materials consist of Ocean City planning research results, mass coral propagation projects (coral pegs), and interview data from JAMSTEC representatives. The collection of these materials was conducted through library research using document mining techniques on international journal repositories and technical reports from marine research institutions.

Data analysis was conducted qualitatively using a deductive syllogism model, reinforced by evidence triangulation (Miles et al., 2014). In this process, technical facts regarding concrete construction and coral manipulation are positioned as the Minor Premise (Material Facts). These facts are then tested for validity using the Major Premise (Legal Norms) derived from UNCLOS provisions and the law of the sea experts' doctrines. This analysis aims to assess whether "technical success" in engineering Okinotorishima is equivalent to "juridical validity." The conclusion was drawn using teleological and systematic interpretation methods (Irwansyah, 2020). The objective is to ensure that the analytical results do not merely invalidate unilateral claims but also yield constructive policy prescriptions for the maritime defense strategies of Archipelagic States, particularly in preserving Indonesia's basepoints amid the threat of climate change.

RESULTS AND DISCUSSION

A. The Natural Condition of Okinotorishima and the Illusion of Stability: Between Physical Erosion and State Ambition

The validity of Japan's maritime claim over Okinotorishima cannot be separated from the fundamental contradiction between static geological facts and dynamic legal interpretations. Physically, Okinotorishima presents a bleak reality

for maritime expansionist ambitions. Based on long-term observational data, this feature is not a stable island, but an isolated atoll atop a steep seamount with a lagoon of 5.78 km² surrounded by coral reefs that submerge at high tide (Arai, 2019). Yoshikawa (2007) notes that in 1931, the feature still possessed significant vegetation and land area. However, natural erosion caused by Pacific waves has drastically eroded it, leaving only two small rocky protrusions (Kita-kojima and Higashi-kojima) no larger than a bed. Without human intervention, these two protrusions are expected to completely vanish beneath the surface of the sea. This fact confirms that, in its natural condition, Okinotorishima has lost the basic physical capacity to qualify as a permanent territory capable of survival, let alone sustaining life (Song, 2009).

This physical vulnerability carries fatal juridical consequences when tested under the regime of Article 121(3) of UNCLOS. This Article establishes a standard of exclusion, stating that “rocks” that cannot sustain human habitation or the economic life of their own are not entitled to an EEZ or a continental shelf. Charney (1999), in his doctrinal analysis, asserts that this provision was designed to prevent the disproportionate encroachment of national jurisdiction on insignificant minor features. However, Japan has exploited textual ambiguities within the article for decades (Barrie, 2021). As outlined by Xue (2011), Japan constructs a narrative that the ability to “sustain” need not be entirely natural but can be assisted by external supplies. This interpretation allows Japan to maintain an EEZ claim of 400,000 km², an area exceeding Japan’s total landmass (Arai, 2019), even though Okinotorishima lacks fresh water, arable land, or permanent residential settlements.

However, this landscape of legal interpretation shifted drastically following the issuance of the 2016 PCA Award. This Award served as a pivotal turning point, dismantling Japan’s arguments. The Arbitral Tribunal provided an authoritative interpretation that the requirement of “human habitation” must be satisfied by the feature’s own capacity in its natural condition, without dominant artificial modification (NISCSS, 2018). Faccio (2021) highlights that the PCA Award affirms the standard of a “stable community,” not merely the presence of military personnel or researchers supplied on a rotational basis. Despite offering critiques on several procedural aspects of the ruling, Gau (2019) acknowledges that the high threshold established by the PCA has created a difficult-to-rebut legal precedent: a feature unable to support life independently is a rock. Thus, this doctrine closes the loophole that Japan sought to exploit to manipulate Okinotorishima’s legal status through loose interpretation.

Facing an impasse in formal legal channels, Japan maneuvered by developing a “dynamic status” argument and strengthening its administrative presence.

[Moritaka \(2022\)](#) documents Japan's view that island status should be considered progressively, including future potential enabled by technology. To support this claim, the Japanese government relies not only on verbal arguments but also conducts effective occupation through science. [Kawaguchi \(2021a, 2021b\)](#) reveals that Japan routinely conducts bathymetric surveys and genetic analyses in the area. [Katsunori \(2025\)](#) further affirms the Tokyo government's official position, which designates Okinotorishima as a "critical baseline." This strategy, according to an analysis by [Jo and Shim \(2019\)](#) highlighting the construction of LTE-Maritime communication infrastructure, aims to create the illusion that Okinotorishima is a "living" and fully managed territory, rather than a dead rock in the middle of the ocean.

Nevertheless, this strategy of administrative presence possesses a fundamental weakness. [Lewis \(2021\)](#) warns through the metaphor of *Piling Pelion on Ossa* that the accumulation of state activities or artificial structures atop a natural feature cannot alter the ontological status of that feature. Japan's efforts to "animate" Okinotorishima through weather observation stations, the assignment of postal codes, and high-profile visits by state officials ([Song, 2009](#)) are, in essence, artificial endeavors that do not address the root problem: the absence of natural capacity. [Hamid \(2022\)](#) warns that allowing such practices would undermine the fundamental UNCLOS principle that "the land dominates the sea." Upon realizing that legal arguments and administrative presence alone are insufficient to stem the rate of abrasion threatening the feature's physical existence, Japan was forced to undertake far more radical and controversial measures. This natural inability compels Japan to shift from passive adaptation toward active intervention through massive technological engineering to create a new physical reality, which is hoped to manipulate legal status.

B. From Ocean City to Artificial Coral: Examining the Legality of Artificial Modification under the Natural Condition Doctrine

Japan's response to the failure of Okinotorishima's natural capacity is manifested through technological interventions transcending conventional conservation boundaries. In an effort to maintain its maritime claims, Japan designed an ambitious civil engineering proposal known as Ocean City Planning. [Watanabe et al. \(2014\)](#) outline the blueprint for this project, which includes the construction of a semi-submersible floating ring structure to encircle the lagoon and integrate OTEC. Technically, this design leverages the hydrodynamic stability of double-column structures, which can withstand extreme marine environments ([Sadeghi & Musa, 2019; Miao et al., 2022](#)). The technical narrative developed by [Watanabe et al. \(2014\)](#) frames this project as an innovation in the use of ocean space for habitation and research. However, this perspective collides sharply with

international legal reality. [Lewis \(2021\)](#) criticizes such an approach as a modern manifestation of *the Piling Pelion on Ossa* myth—a futile attempt to stack artificial structures atop a natural feature that fails to meet the requirements for achieving higher legal status.

The conflict between physical form and legal status becomes sharper when analyzed through Article 60 of UNCLOS. [Flikkema et al. \(2021\)](#), in a study on the legality of floating islands, assert that no matter how sophisticated the semi-submersible structure designed by Japan is, the entity juridically remains an “artificial island” or installation. [Janata \(2024\)](#) reinforces this argument by stating that UNCLOS provides strict demarcation: artificial islands do not possess a territorial sea of their own, and their presence does not affect the delimitation of maritime zones. Thus, the existence of OTEC research facilities or residences atop the steel structure cannot constitute evidence of “economic life” as required by Article 121(3) of UNCLOS. [Faccio \(2021\)](#) emphasizes that relevant economic activity must originate from the resources of the feature itself, not from activities entirely dependent on external logistical and technological supplies. Therefore, the “Ocean City” illusion created by Japan is legally *null and void* in the context of maritime zone claims ([Khan, 2024](#)).

Beyond the “hard” approach through concrete and steel infrastructure, Japan also applies a “soft” strategy through massive bio-engineering. The Japan Fisheries Agency has initiated a project to propagate *Acropora* corals using industrial-scale sexual and asexual reproduction techniques ([Sato et al., 2010](#)). [Omori and Iwao \(2009\)](#) detail the use of specialized ceramic-substrate technology, called “coral pegs,” to enhance the survival rates of coral transplants on hard substrates. [Omori et al. \(2016\)](#) claim that this method aims to rehabilitate damaged coral reef ecosystems. At a glance, this approach appears to align with ecosystem-based coastal protection practices implemented in other countries, such as in Grenada, which have proven effective in reducing wave energy ([Reguero et al., 2018](#)).

However, a fundamental motivational difference alters the legal character of such actions. [Mendenhall \(2019\)](#) argues that in the Okinotorishima case, ecosystem restoration is not the end goal, but a means to manipulate baselines. Efforts to massively “plant” coral to thicken submerged features constitute an intervention that transforms the “natural” character into an “artificial” one. [Song \(2009\)](#) criticizes this practice as an attempt to create new biological facts for jurisdictional interests, rather than for the environment itself. The natural condition doctrine affirmed by the 2016 PCA Award implicitly rejects recognition of features “grown” due to human engineering. If a feature requires intensive human maintenance, such as installing thousands of coral pegs and protective concrete to prevent its disappearance, then it lacks the natural capacity to survive ([NISCSS, 2018](#)).

Ultimately, the synthesis between Ocean City civil engineering and coral-peg bio-engineering demonstrates a pattern of state behavior attempting to substitute law for technology. [Anand and Forbes \(2021\)](#) term this phenomenon as an effort to fill a *legal vacuum* with physical occupation. However, a comprehensive analysis shows that both approaches fail to meet the thresholds set out in Article 121(3) of UNCLOS. Concrete does not turn a rock into an island, and artificial coral does not turn a submerged feature into sovereign land. The failure of these technological instruments to provide legal legitimacy forces Japan to shift its strategy from the legal-technical realm to the political-strategic realm. This phenomenon is no longer merely a dispute over article interpretation but has become a geopolitical practice in which law is used as a weapon.

C. Islandization as a Lawfare Practice: Material Hegemony in the Era of Maritime Competition

Japan's persistence in maintaining the physical existence of Okinotorishima cannot be viewed merely as an effort in environmental protection; rather, it must be read as a strategic geopolitical maneuver. [Wirth \(2023\)](#) defines this phenomenon as Islandization, a systematic state strategy to solidify sovereign power by transforming fluid or fragile features into solid territorial barriers amidst the ocean. Japan's official narrative often frames construction projects on Okinotorishima as contributions to navigational safety and global marine research. However, [Bueger et al. \(2019\)](#) refute this functionalist perspective. They argue that, in the context of maritime realism, technology is used not to serve the international public but to manipulate geography for territorial exclusivity. By creating facts on the ground (*fait accompli*) through massive concrete, Japan attempts to transform abstract legal disputes into concrete material domination, thereby closing the negotiation space for other states ([Yee, 2011](#)).

This strategy of territorial hardening operates in tandem with lawfare tactics—the utilization of law as an instrument of non-military warfare. [Guilfoyle \(2019\)](#) explains that in lawfare, states mobilize legal arguments to legitimize actions that are actually motivated by power expansion. Japan shrewdly exploits textual ambiguities in Article 121 of UNCLOS, particularly the lack of clarity regarding the definitions of “rock” and the “ability to sustain,” as loopholes to justify its claims ([Barrie, 2021](#)). [Arai \(2019\)](#) highlights that Japan conducts a self-serving interpretation by disregarding historical criteria and imposing modern technical standards. The objective is to use technology to “mask” the feature's legal weaknesses so that it appears to meet legal requirements. [Anisimov \(2021\)](#) adds that this practice renders the law of the sea not a neutral arbiter but a discursive legal battleground where powerful states impose their will through technical capacity.

Behind these legal-technical maneuvers lie layered realpolitik motivations. Economic motives are a primary driver, given the EEZ claim of 400,000 km² surrounding Okinotorishima, which has immense strategic value. This area is estimated to be rich in manganese nodules, cobalt, and potential future energy reserves (Song, 2009; Xue, 2011). Ironically, Arai (2019) notes that the maritime area sought to be secured from this single coral point exceeds Japan's total landmass itself, which is only approximately 380,000 km². Beyond material calculations, Fox (2016) emphasizes the crucial role of ideational factors, specifically nationalism. Okinotorishima has been constructed as a sacred symbol of national resilience, as evidenced by the high-profile visit of Tokyo Governor Shintaro Ishihara, who performed symbolic acts on the feature. In the East China Sea, amid the hegemonic rivalry with China, maintaining Okinotorishima is regarded as a non-negotiable matter of national pride, regardless of the irrational economic costs of maintaining a concrete in the middle of the ocean (Midford & Østhagen, 2024).

This phenomenon of Islandization turns out to be not a singular Japanese anomaly but has become a contagious *modus operandi* in regional maritime competition. Comparative analysis shows a similar pattern in Vietnam's strategy in the South China Sea. Tuan and Le (2025) explain that although Vietnam is often positioned as a "victim" of Chinese expansion, the state actively applies the doctrine of maritime realism by strengthening the outposts it controls. Chapman et al. (2012) term this tactic "games of islands," in which physical occupation is used to lock in claims before any final dispute settlement. Kościelniak (2023) notes that Vietnam also conducts reclamation and fortification of disputed features, although on a smaller scale than Japan's giant projects. This comparison confirms that the use of physical construction to manipulate the status of maritime features has become a regional trend. Coastal states race to alter marine geography to expand their jurisdictional zones, disregarding long-term impacts on the integrity of international law.

The normalization of this territorial manipulation carries systemic risks for global order. Ding (2024) warns that if the Okinotorishima precedent is accepted, the fundamental UNCLOS principle that "land dominates the sea" will shift to "technology dominates the sea." This shift will trigger a construction arms race that benefits only developed states with capital and high technology (Savchuk et al., 2024). The legal uncertainty arising from the aggressiveness of major powers creates a security dilemma for other Archipelagic States that share similar geographical characteristics but reject manipulative tactics. This situation demands strategic vigilance for Indonesia to formulate a distinct defense approach—one capable of securing territorial basepoints without sacrificing compliance with international legal norms.

D. Implications for Indonesia: Eco-Technological Basepoint Preservation Strategy within UNCLOS Corridors

The dynamics of the Okinotorishima dispute offer crucial strategic lessons and an early warning for Archipelagic States like Indonesia. If Japan utilizes technology to manipulate “dead” features to appear “alive,” Indonesia faces the exact opposite challenge: “living” features threatened with “death” due to environmental degradation. [Cahyani et al. \(2025\)](#) present alarming empirical evidence from Bengkalis Island, one of the outermost islands serving as basepoints for Indonesia’s archipelagic baselines. Their study demonstrates that massive peatland abrasion has significantly eroded the coastline, thereby threatening the displacement or even disappearance of the state’s maritime boundary reference points. Unlike the Okinotorishima case where the primary threat is legal criteria (the definition of a rock), the threat to Indonesia’s basepoints is tangible physical extinction. Therefore, the urgency of technological intervention for Indonesia is not for artificial jurisdictional expansion, but constitutes an existential necessity to maintain legitimate territorial integrity ([Hamid, 2022](#)).

Drawing from the critique by [Lewis \(2021\)](#) regarding Japan’s “concretization” methods deemed to violate the natural state, Indonesia needs to formulate a fundamentally different territorial defense model. Indonesia’s basepoint preservation strategy must avoid a hard engineering approach that could damage the ecosystem; instead, it should adopt the Eco-Technological Defense paradigm. [Burt and Bartholomew \(2019\)](#), in their study on ecological engineering in the Arabian Gulf, offer an alternative solution by integrating protective coastal infrastructure with natural habitat rehabilitation, such as mangrove planting or adaptive coral reef restoration. This approach positions technology as a supporter of the feature’s natural capacity, rather than a substitute for it. Thus, physical interventions conducted by Indonesia on outermost islands will possess stronger moral and legal legitimacy compared to Japan’s Ocean City project, as the objective is ecological function recovery (restoration), not the creation of new land (creation).

The validity of this strategy also relies heavily on domestic policy consistency. [Gunawan et al. \(2025\)](#) issue a stern warning that Indonesia’s environmental preservation claims could collapse instantly if exploitative practices, such as sea sand exports, are legalized. Sea sand mining activities not only exacerbate the rate of abrasion currently being fought but also place Indonesia in a paradoxical position under international law. Indonesia cannot demand UNCLOS protection on the grounds of rising sea levels while simultaneously actively destroying its own natural coastal fortresses for short-term economic gain. Therefore, compliance with environmental standards in Part XII of UNCLOS must be an absolute prerequisite

in every outermost island security project. This is to ensure that state defense efforts are not categorized as acts of environmental destruction that actually weaken diplomatic bargaining positions.

From a geopolitical perspective, Indonesia's technological strategy must be situated within the framework of "maintenance of sovereignty." [Zubaidi et al. \(2024\)](#), in a case study in the North Natuna Sea, assert that state presence, as evidenced by the construction of physical infrastructure and security posts, is a legitimate manifestation of effective occupation. However, unlike Japan's aggressive and expansive Islandization strategy, Indonesia's infrastructure presence in Natuna and Bengkalis must be defined in a defensive posture. Such infrastructure serves to ensure that these basepoints remain legally valid and well-administered amid the threat of climate change ([Savchuk et al., 2024](#)). In other words, Indonesia rejects Okinotorishima-style territorial manipulation practices but proactively uses technology to lock in *the status quo* of its territory to prevent erosion by natural forces or claims by neighboring states.

The synthesis between technical needs and juridical limitations converges on a single strategic conclusion. The future of Indonesia's maritime sovereignty is determined not only by naval fleets but also by the state's ability to scientifically and legally manage the physical integrity of its outermost islands. The Okinotorishima case serves as a "fractured mirror," revealing that technology without a strong legal foundation will yield only fragile claims. Conversely, in Indonesia, eco-engineering technology must become an instrument that reinforces legal legitimacy. This technology ensures that every inch of land on the outermost islands remains physically present and juridically recognized, without sacrificing the integrity of the global law of the sea regime, which serves as a protective umbrella for the world's largest Archipelagic State.

CONCLUSIONS AND SUGGESTIONS

The interdisciplinary analysis of the Okinotorishima dispute reveals an unbridgeable gap between technical engineering success and legal legitimacy validity. This research demonstrates that Japan's technological interventions, ranging from the Ocean City concrete megastructure to coral genetic engineering via coral pegs, are indeed capable of preventing the feature's physical erosion. However, this technical success holds no juridical equivalence under UNCLOS. Based on the natural condition doctrine reaffirmed by the 2016 PCA Award, artificial modification cannot alter the ontological status of a feature. Therefore, Okinotorishima remains qualified as a "rock" because it cannot sustain life independently without external assistance. Consequently, all infrastructure constructed thereon, however sophisticated and costly, holds the

status of artificial installations that are *null and void* in generating entitlement to an EEZ.

Behind the veil of environmental conservation, Japan's continued assertion of the claim is identified as a manifestation of the Islandization strategy operating within a lawfare framework. Japan is not engaging in pure nature preservation but is manipulating geography to create "sea walls" for geopolitical hegemony. This practice carries systemic risks as it potentially shifts the fundamental principle of the law of the sea from "land dominates the sea" to "technology dominates the sea." If this precedent is normalized into international custom, it will trigger a construction arms race distorting global justice. This situation will only benefit developed states with high capital and technological capacities, while disadvantaging developing Archipelagic States that lack equivalent resources to engineer their maritime territories.

For Indonesia, these dynamics offer a crucial lesson regarding the urgency of distinguishing between manipulative "artificial expansion" and legitimate "defensive preservation." The tangible threat of abrasion on the outermost small islands, including peat degradation on Bengkalis Island and vulnerabilities in the North Natuna Sea, demands immediate and measured state intervention. However, Indonesia's defense strategy must not emulate the Okinotorishima model which contravenes international law. Indonesia must pursue a middle path through the Eco-Technological Defense paradigm. This approach uses technology to restore the natural ecological functions of basepoints as sovereignty buffers, rather than to create new, undue maritime rights. In this manner, Indonesia can secure its territorial integrity without sacrificing compliance with the law of the sea regime that serves as its primary protector.

As a strategic follow-up to these findings, the international community, through the United Nations, is encouraged to formulate supplementary technical guidelines that specifically define strict boundaries between preservation and maritime feature engineering to close interpretation loopholes. Meanwhile, at the domestic level, the Government of Indonesia needs to immediately issue a National Basepoint Preservation Roadmap that integrates eco-friendly coastal protection technologies. This policy must be accompanied by a permanent moratorium on sea sand exports to maintain diplomatic moral consistency. Finally, the Ministry of Foreign Affairs is advised to lead the narrative in the ASEAN regional forum by utilizing the Okinotorishima case as a negative case study, while promoting legal recognition for stable baselines for Archipelagic States impacted by natural climate change.

REFERENCES

Anand, A., & Forbes, L. (2021). Calming the Waters of the South China Sea: Solving Territorial Disputes over Artificial Islands. *Journal of Student Research*, 10(3), 1-14. <https://doi.org/10.47611/jsrhs.v10i3.1797>

Anisimov, I. O. (2021). Некоторые Международно-Правовые Вопросы Разработки и Передачи Морских Технологий (Some International Legal Issues in the Development and Transfer of Marine Technologies). *Moscow Journal of International Law*, 2021(4), 136-147. <https://doi.org/10.24833/0869-0049-2021-4-136-147>

Arai, Y. (2019). *The Interpretation of the Regime of Islands: Application to Okinotorishima* [Master Thesis, World Maritime University]. WMU Library. https://commons.wmu.se/all_dissertations/1193

Barrie, G. (2021). The 1982 United Nations Law of the Sea Convention: Unresolved Issues Remain. *Obiter*, 42(3), 529-546. Retrieved from https://hdl.handle.net/10520/ejc-obiter_v42_n3_a5

Bueger, C., Edmunds, T., & Ryan, B. J. (2019). Maritime Security: The Uncharted Politics of the Global Sea. *International Affairs*, 95(5), 971-978. <https://doi.org/10.1093/ia/iiz145>

Burt, J. A., & Bartholomew, A. (2019). Towards More Sustainable Coastal Development in the Arabian Gulf: Opportunities for Ecological Engineering in an Urbanized Seascape. *Marine Pollution Bulletin*, 142, 93-102. <https://doi.org/10.1016/j.marpolbul.2019.03.024>

Cahyani, H. D., Lestari, M. M., & Diana, L. (2025). The Determination of State Baselines Post-Peat Abrasion on Bengkalis Island as Indonesia's Foremost Island in Terms of International Law of the Sea Perspective. *Multidisciplinary Indonesian Center Journal (MICJO)*, 2(2), 1382-1401. <https://doi.org/10.62567/micjo.v2i2.639>

Chapman, K. C. S., Cannon, A., Nacimiento, P., Sanger, K., Tomasi, T., Leathley, C., Tevendale, C., & Satryani, G. (2012, July 5). *A Rock or an Island? The Significance of Okinotorishima and Its Status under the International Law of the Sea* (Arbitration Notes). Herbert Smith Freehills Kramer. Retrieved December 22, 2025, from <https://www.hsfkramer.com/notes/arbitration/2012-07/a-rock-or-an-island-the-significance-of-okinotorishima-and-its-status-under-the-international-law-of-the-sea>

Charney, J. I. (1999). Rocks That Cannot Sustain Human Habitation. *American Journal of International Law*, 93(4), 863-878. <https://doi.org/10.2307/2555353>

Ding, Z. (2024). Maritime Disputes from a Global Perspective and Solutions under International Law. *Lecture Notes in Education Psychology and Public Media*, 66, 34-42. <https://doi.org/10.54254/2753-7048/66/2024mu0013>

Faccio, S. (2021). "Human Habitation or Economic Life of their Own": The Definition of Features Between History, Technology and the Law. *Liverpool Law Review*, 42(1), 15-33. <https://doi.org/10.1007/s10991-020-09260-1>

Flikkema, M. M. B., Lin, F. Y., Plank, P. P. J. V. D., Koning, J., & Waals, O. (2021). Legal Issues for Artificial Floating Islands. *Frontiers in Marine Science*, 8, 1-10. <https://doi.org/10.3389/fmars.2021.619462>

Fox, S. (2016). The Senkaku Shoto/Diaoyu Islands and Okinotorishima Disputes: Ideational and Material Influences. *China Information*, 30(3), 312-333. <https://doi.org/10.1177/0920203X16665778>

Gau, M. S. (2019). The Interpretation of Article 121(3) of UNCLOS by the Tribunal for the South China Sea Arbitration: A Critique. *Ocean Development & International Law*, 50(1), 49-69. <https://doi.org/10.1080/00908320.2018.1511083>

Guilfoyle, D. (2019). The Rule of Law and Maritime Security: Understanding Lawfare in the South China Sea. *International Affairs*, 95(5), 999-1017. <https://doi.org/10.1093/ia/iiz141>

Gunawan, Y., Dananjaya, M. P., Aditama, S. W., & Onielda, M. D. A. (2025). Indonesian Sea Sand Exports: UNCLOS Compliance v. Environmental Sustainability Dilemma Explored. *Jurnal Hukum*, 41(2), 394-410. <https://doi.org/10.26532/jh.v41i2.32294>

Hamid, A. G. (2022). The Principle That the Land Dominates the Sea in the Context of South China Sea Disputes: A Critical Appraisal. *IIUM Law Journal*, 30(2), 49-75. <https://doi.org/10.31436/iiumlj.v30i2.742>

Irwansyah. (2020). *Penelitian Hukum: Pilihan Metode & Praktik Penulisan Artikel*. Mirra Buana Media.

Janata, M. (2024). Vymezení Umělých Ostrovů v Mezinárodním Mořském Právu a Jeho Význam pro Spory v Jihočínském Moři (The Definition of Artificial Islands in the International Law of the Sea and Its Relevance to Disputes in the South China Sea). *Acta Universitatis Carolinae Iuridica*, 70(3), 143-158. <https://doi.org/10.14712/23366478.2024.142>

Jo, S. W., & Shim, W. S. (2019). LTE-Maritime: High-Speed Maritime Wireless Communication Based on LTE Technology. *IEEE Access*, 7, 53172-53181. <https://doi.org/10.1109/access.2019.2912392>

Katsunori, F. (2025, June 3). Interview: Director, Marine Biodiversity and Environmental Assessment Research Center, JAMSTEC. The Tokyo Okinotorishima and Minamitorishima Islands. Retrieved December 22, 2025, from <https://www.t-borderislands.metro.tokyo.lg.jp/en/interview/interview26.html>

Kawaguchi, S. (2021a, October 14). *Interview 1: Principal Researcher, Marine Environmental Impact Assessment Research Group, JAMSTEC*. The Tokyo Okinotorishima and Minamitorishima Islands. Retrieved December 22, 2025, from <https://www.t-borderislands.metro.tokyo.lg.jp/en/interview/interview3.html>

Kawaguchi, S. (2021b, October 14). *Interview 2: Principal Researcher, Marine Environmental Impact Assessment Research Group, JAMSTEC*. The Tokyo Okinotorishima and Minamitorishima Islands. Retrieved December 22, 2025, from <https://www.t-borderislands.metro.tokyo.lg.jp/en/interview/interview4.html>

Khan, B. Z. (2024). Who Really Owns the South China Sea? The Legal Battle Over Artificial Islands. *Journal of Asian Development Studies*, 13(4), 1167-1174. <https://doi.org/10.62345/jads.2024.13.4.95>

Kościelniak, K. (2023). The Artificial Islands of Vietnam in the South China Sea. *Reality of Politics: Estimates-Comments-Forecasts*, 25(3), 47-62. <https://doi.org/10.15804/rop2023303>

Lewis, R. (2021). The Artificial Construction and Modification of Maritime Features: Piling Pelion on Ossa. *Ocean Development & International Law*, 52(3), 239-259. <https://doi.org/10.1080/00908320.2021.1917099>

Matsuda, T. (2020). Explaining Japan's Post-Cold War Security Policy Trajectory: Maritime Realism. *Australian Journal of International Affairs*, 74(6), 687-703. <https://doi.org/10.1080/10357718.2020.1782346>

Mendenhall, E. (2019). Interpreting the Law of the Sea 'Regime of Islands': An Opportunity for Productive US Leadership. *Marine Policy*, 99, 213-215. <https://doi.org/10.1016/j.marpol.2018.10.043>

Miao, Y., Cheng, X., Ding, J., Tian, C., & Zhang, Z. (2022). Investigation on Hydrodynamic Performance of a Two-Module Semi-Submersible Offshore Platform. *Ships and Offshore Structures*, 17(3), 607-618. <https://doi.org/10.1080/17445302.2020.1857928>

Midford, P., & Østhagen, A. (2024). The East China Sea: A Case of Ocean Geopolitics and Maritime Conflict. *East Asia*, 41(3), 223-254. <https://doi.org/10.1007/s12140-024-09426-y>

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative Data Analysis: A Methods Sourcebook* (Third Edition). Sage. <https://books.google.co.id/books?id=p0wXBAAAQBAJ>

Moritaka, H. (2022, September 15). *International Legal Regime regarding Islands and Rocks*. The OPRI Center of Island Studies. Retrieved December 22, 2025, from <https://www.spf.org/islandstudies/research/a00025.html>

NISCSS. (2018). A Legal Critique of the Award of the Arbitral Tribunal in the Matter of the South China Sea Arbitration. In S. Lee & H. E. Lee (Eds.), *Asian Yearbook of International Law* (Vol. 24, pp. 151-293). Brill Publishers. https://doi.org/10.1163/9789004437784_009

Omori, M. (2011). Degradation and Restoration of Coral Reefs: Experience in Okinawa, Japan. *Marine Biology Research*, 7(1), 3-12. <https://doi.org/10.1080/17451001003642317>

Omori, M., Higa, Y., Shinzato, C., Zayasu, Y., Nagata, T., Nakamura, R., Yokokura, A., & Janadou, S. (2016). Development of Active Restoration Methodologies for Coral Reefs Using Asexual Reproduction in Okinawa, Japan. In C. Birkeland et al. (Eds.), *Proceedings of the 13th International Coral Reef Symposium* (pp. 359-377). International Society for Reef Studies. <https://coralreefs.org/publications/icrs-2016-proceedings>

Omori, M., & Iwao, K. (2009). A Novel Substrate (the "Coral Peg") for Deploying Sexually Propagated Corals for Reef Restoration. *Galaxea, Journal of Coral Reef Studies*, 11(1), 39. <https://doi.org/10.3755/galaxea.11.39>

Permanent Court of Arbitration. (2016, July 12). *The South China Sea Arbitration: The Republic of Philippines (Claimant) v. The People's Republic of China (Respondent)* (Reports of International Arbitral Awards: Volume XXXIII). https://legal.un.org/riaa/vol_33.shtml

Qamar, N., & Rezah, F. S. (2020). *Metode Penelitian Hukum: Doktrinal dan Non-Doktrinal*. CV. Social Politic Genius (SIGN). <https://books.google.co.id/books?id=TAQHEAAAQBAJ>

Reguero, B. G., Beck, M. W., Agostini, V. N., Kramer, P., & Hancock, B. (2018). Coral Reefs for Coastal Protection: A New Methodological Approach and Engineering Case Study in Grenada. *Journal of Environmental Management*, 210, 146-161. <https://doi.org/10.1016/j.jenvman.2018.01.024>

Sadeghi, K., & Musa, M. K. (2019). Semisubmersible Platforms: Design and Fabrication. *Academic Research International*, 10(1), 28-38. Retrieved from <http://journals.savap.org.pk/vol10n1.html>

Sampara, S., & Husen, L. O. (2016). *Metode Penelitian Hukum*. Kretakupa Print.

Sato, A., Nakamura, R., Kitano, M., Mikami, N., & Tamura, M. (2010). Coral Reef Recovery for Fishery Resources and Habitat Rehabilitation: Experience of Japan. *Fish for the People*, 8(1), 38-43. Retrieved from <https://hdl.handle.net/20.500.12066/804>

Savchuk, O.O., Kovtunenko, O.A., & Dashko, D.S. (2024). Нормативне Врегулювання Морського Права: Міжнародний Досвід (Normative Regulation of Maritime Law: International Experience). *Legal Scientific Electronic Journal*, 2024(11), 265-269. <https://doi.org/10.32782/2524-0374/2024-11/60>

Song, Y. H. (2009). Okinotorishima: A Rock or an Island? Recent Maritime Boundary Controversy between Japan and Taiwan/China. In S. Y. Hong & J. M. V. Dyke (Eds.), *Maritime Boundary Disputes, Settlement Processes, and the Law of the Sea* (Vol. 65, pp. 145-175). Martinus Nijhoff Publishers. <https://doi.org/10.1163/ej.9789004173439.i-308.56>

Tuan, N. K., & Le, V. T. P. (2025). China and Japan's Strategic Competition in East Asia: The Case of the East China Sea. *Edelweiss Applied Science and Technology*, 9(3), 964-972. <https://doi.org/10.55214/25768484.v9i3.5387>

United Nations. (1982, October 7). *United Nations Convention on the Law of the Sea* (A/CONF.62/122). <https://digitallibrary.un.org/record/38990>

Watanabe, Y., Yoshida, K., & Nambara, T. (2014). Ocean City Planning in the Waters of Okinotorishima. In *Proceedings of the ASME 2014 33rd International Conference on Ocean, Offshore and Arctic Engineering* (Vol. 7: Ocean Space Utilization, pp. 1-9). The American Society of Mechanical Engineers. <https://doi.org/10.1115/omae2014-24324>

Wirth, C. (2023). Solidifying Sovereign Power in Liquid Space: The Making and Breaking of 'Island Chains' and 'Walls' at Sea. *Political Geography*, 103, 1-11. <https://doi.org/10.1016/j.polgeo.2023.102889>

Xue, G. (2011). How Much Can a Rock Get? A Reflection from the Okinotorishima Rocks. *China Oceans Law Review*, 13(1), 1-34. Retrieved from <https://colr.xmu.edu.cn/info/1004/1065.htm>

Yee, A. (2011). Maritime Territorial Disputes in East Asia: A Comparative Analysis of the South China Sea and the East China Sea. *Journal of Current Chinese Affairs*, 40(2), 165-193. <https://doi.org/10.1177/186810261104000207>

Yoshikawa, Y. (2007). The US-Japan-China Mistrust Spiral and Okinotorishima. *Asia-Pacific Journal*, 5(10), 1-8. <https://doi.org/10.1017/S1557466007022164>

Zubaidi, A. K. M., Wiyana, R. I., & Ramadhani, S. N. (2024). The Role of International Law in Safeguarding Indonesia's Sovereignty: A Case Study of the North Natuna Sea. *Journal of Political and Legal Sovereignty*, 2(2), 235-247. <https://doi.org/10.38142/jpls.v2i2.213>