

2016

Artificial Islands in the South China Sea

Aaron Holmes

California State University, San Bernardino

Follow this and additional works at: <https://scholarworks.lib.csusb.edu/osr>



Part of the [Architecture Commons](#), [Arts and Humanities Commons](#), [Business Commons](#), [Education Commons](#), [Engineering Commons](#), [Law Commons](#), [Life Sciences Commons](#), [Medicine and Health Sciences Commons](#), [Physical Sciences and Mathematics Commons](#), and the [Social and Behavioral Sciences Commons](#)

Recommended Citation

Holmes, Aaron (2016) "Artificial Islands in the South China Sea," *OSR Journal of Student Research*: Vol. 4 , Article 1.

Available at: <https://scholarworks.lib.csusb.edu/osr/vol4/iss1/1>

This Article is brought to you for free and open access by the Office of Student Research at CSUSB ScholarWorks. It has been accepted for inclusion in OSR Journal of Student Research by an authorized editor of CSUSB ScholarWorks. For more information, please contact scholarworks@csusb.edu.

Artificial Islands in the South China Sea

AARON HOLMES, Class of 2017, National Security Studies

Mentor: **Normal Meek**, Professor, Geography & Environmental Studies

ABSTRACT:

The purpose of this study was to understand the value and implications of artificial islands constructed by the People's Republic of China (PRC) in the South China Sea. Qualitative analysis was used with the available literature, sources, and treaties of the topics concerned. The paper concludes that the PRC gains many benefits primarily within the realm of energy security and explores what effects they may

KEYWORDS: China, South China Sea, Spratly Islands, Artificial Islands

INTRODUCTION

Artificial islands in the South China Sea help the People's Republic of China (PRC) bolster their energy security, national security, and territorial claims. The Spratly Islands in the South China Sea are one of the most contested regions in the world because of the energy, international trade, and strategic concerns of the countries involved.

BACKGROUND

The South China Sea is located southeast of mainland China (Hossain, 2013). It is bounded by Vietnam to the west, Taiwan to the north east, the Philippines to the east, and Malaysia, Indonesia, and Brunei to the south. Also to the south are the straits of Malacca, Sunda, and Lombok. Within the South China Sea are many islands. At least three island groups, the Spratly Islands, the Paracels, and Scarborough Shoal, are of geopolitical significance.

The Spratly Islands are one of several island groups in the South China Sea. They are composed of several hundred small islands and reefs. The exact number is difficult to determine. Some sources say about 100, while others say about 600. The majority of features in the Spratly Islands are reefs which are submerged at high tide.

The United Nations Convention of the Law of the Sea (UNCLOS) grants each nation an Exclusive Economic Zone (EEZ) of 200 nautical miles from their shore or up to 350 nautical miles of the continental shelf. With the exception of

Taiwan, all of the countries with claims in the South China Sea have ratified UNCLOS. However, many nations in the region claim sovereignty over islands and reefs within the EEZ of other nations. For example, Brunei's EEZ covers Louisa Reef, part of the Spratly Islands. However, Louisa Reef is claimed by Malaysia as part of its territory.

Rigorous geological surveys are required to solve such territorial disputes, but they are often lacking. An important feature of UNCLOS is that land features that are underwater at high tide cannot be considered for determining territorial waters. A possible interpretation is that if 99% of a reef is underwater at high tide, but a small part manages to stay above water even during the highest tide of the year, then it could be considered an island. If so, then it could be claimed as sovereign territory and be used to establish territorial waters and an EEZ. Therefore, aerial or satellite imagery is often insufficient and geological surveys that were performed during the highest tide of the year are required. However, detailed surveys to determine if any part is above sea level at high tide are often unavailable.

The South China Sea and the islands within are some of the most contested areas in the world. Almost every country bordering the South China Sea has competing territorial claims in the region, with the PRC's being one of the largest. The PRC's claim is known as the 'U-shaped line' and covers almost the entirety of the South China Sea, well beyond 200 nautical miles from China's

southern shores. While this claim seems to be in contradiction to UNCLOS, the PRC is making a claim by historic title. Article 15 of UNCLOS makes mention of “historic title” but does not go into detail.

The possibility for oil and shipping routes are two primary motivations for the contention in the South China Sea. Many countries in and around the South China Sea are increasing the amount of oil they are importing owing to rising energy demand. In the 1990s, the region's oil output plateaued and since then the region has become a net importer of oil. Current reserves of oil, approximately 13 billion barrels, would sustain the current demand for only fourteen years. Access to untapped oil deposits beneath the South China Sea is a key aspect of the countries' competing claims. Unfortunately, the untapped resources would not be enough to meet demands for the region, but only offset or delay the need for additional imports. With rising energy demand, and regional reserves becoming depleted, securing shipping routes for energy become increasingly vital to the strategic interests of countries in the region.

CONSTRUCTION OF ARTIFICIAL ISLANDS

As of May 2015, there are seven artificial islands created by the PRC. The seven artificial islands were created on Cuarteron Reef, Fiery Cross Reef, Gaven Reef, Hughes Reef, Johnson Reef, Mischief Reef and Subi Reef. Land reclamation began in summer of 2014 for six of the artificial islands. Land reclamation on Mischief Reef began in early 2015, and has been the fastest growing of the seven projects. Mischief Reef and Fiery Cross Reef are the largest at over 900,000 square meters each. Many of the artificial islands have various support facilities and equipment such as radar, communication, surveillance, helipads, defensive towers, and anti-aircraft guns. Fiery Cross Reef even has a 3,000 meter runway and there may be a second one on Subi Reef. The New York Times reported two mobile artillery vehicles on one of the islands, but did not identify which island.

The artificial islands created by the PRC are most likely calcareous sand dredged up from the ocean floor near the island and compacted on top of the island. Starting in 2014, the PRC began

construction of six artificial islands in the Spratly Islands, and a seventh in 2015. The islands were constructed on contested reefs in the Spratly Islands held by China. The artificial islands appear to be made from dredged sand. A paper written in 2010 by a group of Chinese engineers examines the engineering aspects of calcareous sand. (Calcareous sand comes from old coral and shells. It is very common on and around the reefs of the Spratly Islands.) They specifically looked at Fiery Cross Reef, one of the most developed artificial islands to date. From their research, they determined that traditional pile driving was ineffective in calcareous sand. Through experimentation, they discovered the most stable method to support structures with calcareous sand were square plates on top of compacted, dry sand.

The PRC's stated reason for the creation of artificial islands and the facilities on them are to provide services to civilian ships in the South China Sea. In April 2015, Ambassador Cui Tiankai, stated that the purposes of the artificial islands are mainly to provide shelter for ships, navigation aid, search and rescue, weather observation, and others. He also stated, “Of course there will be defense facilities. This is only natural and necessary and they are purely for defensive purposes.”

BENEFITS OF ARTIFICIAL ISLANDS

The PRC built the artificial islands to bolster energy security, national security, and territorial claims. Artificial islands allow the People's Liberation Army Navy (PLAN) to station supplies and equipment in the South China Sea to better protect oil shipments and to defend the mainland. Also, artificial islands cannot be used to make territorial claims, but they can be used to make existing territorial claims difficult to dispute.

Artificial islands in the South China Sea also help promote Chinese national security by protecting their energy security. Energy security is a major issue in the PRC and is invariably linked with national security. Since 1993, the PRC has been an oil importing nation. In 2011, approximately 54.8% of the PRC's oil consumption was imported. Approximately 75% of imported oil (or about 40% of total consumed oil) is shipped through the Strait of Malacca and the South China Sea. Therefore, whoever controls

the Strait of Malacca, or can block it, can threaten the PRC's oil supply. The "Malacca Dilemma" as it is called in the PRC, may be one of the motivations behind building the artificial islands in the South China Sea. The 3,000 meter runway on Fiery Cross Reef allows almost any PRC airplane to land on the island. Because of this runway, the PRC now has refueling and supply capabilities to reach the southern end of the South China Sea. Therefore, the artificial islands give the PRC the capability to strike against anyone who threatens the Strait of Malacca.

In addition to strengthening energy security, the PRC is adding another ring of security to protect the mainland. Historically, China promoted national security by establishing buffer zones around central areas of national interest. From 1840 to 1945, Chinese security and sovereignty were compromised by its lack of maritime power. Building supply and support facilities on the artificial islands allows PLAN to fight further away from the PRC mainland. By extending their capabilities over the South China Sea, the PRC has enhanced security for the mainland.

The artificial islands cannot be used to make new territorial claims but instead strengthen existing Chinese claims in the South China Sea. Like reefs that are under water at high tide, artificial islands cannot be used to determine territorial waters or an EEZ under UNCLOS. At most, they are only allowed a 500 meter safety zone. When determining territorial claims, what matters is the original status of the reef or island, not what it was made into. Piling compacted sand onto a reef makes determining the original status nearly impossible. Therefore, future disputes based on geological surveys would work in the PRC's favor by eliminating any evidence against them. However, UNCLOS also requires that due notice must be given for the construction of artificial islands, which China did not do.

IMPLICATIONS-PHILIPPINES

The Philippines is likely to continue searching for outside help to regain territorial claims. The Philippines have the most to lose. Losing access to resources in the South China Sea could damage the Filipino economy. All seven of the PRC's artificial islands are within the Philippine's claimed territory, and Mischief Reef

is within the Philippine's 200 nautical mile EEZ. The Philippines has one of the weakest militaries in the region and does not have the resources to challenge the PRC directly. As an example of their weak military strength, the Philippine Navy grounded a WWII era ship, the Sierra Madre, into Second Thomas Shoal to serve as shelter for garrison troops. Without a strong military to counter the PRC, the Philippines will have to search for outside help.

The Philippines are likely to continue to seek resolution through legal channels, but with little to no success. In 2013, The Philippines attempted to resolve territorial disputes with the PRC through arbitration at The Hague. The PRC declined arbitration. Annex VII, article 9 of UNCLOS does not bar proceeding if a party fails to show. The Philippines has continued with the arbitration but each time the PRC declines. It seems likely that the PRC will continue to stonewall the Philippine's legal complaints unless a stronger force can compel the PRC to cooperate.

The Philippines will also continue to seek closer ties to the United States. The US and the Philippines have been allies since the 1951 Mutual Defense Treaty. This year, the US sent 6,000 troops to the Philippines to perform in annual joint military exercises with the Armed Forces of the Philippines (AFP). This was more than twice the number of troops from last year. With the US's pivot to Asia, we are likely to see more cooperation between the US and the Philippines.

IMPLICATIONS-VIETNAM

Vietnam is likely to engage in an artificial island arms building race with the PRC. Land reclamation at sea was actually started by Vietnam. However, their construction is much smaller in terms of scale and speed compared to the PRC's artificial islands. Given the history of animosity between the two countries, Vietnam may accelerate their land reclamation activities in response to the PRC's.

The seven artificial islands made by the PRC so far are not the only land reclamation activities performed in the South China Sea. The two islands held by Vietnam, Sand Cay and West Reef, have increased in size. Land reclamation on Sand Cay island started in 2011 and work on West Reef started in 2012. Both predate the land

reclamation on any of the PRC islands. However, they are much smaller compared to the PRC's islands, and land reclamation was performed much more slowly.

There is a long history of animosity between Vietnam and the PRC. In Vietnam's 2,500 years of history, Vietnam was invaded by China (now People's Republic of China) seventeen times. In more recent times, the PRC invaded the Paracel Islands and took control of them from Vietnam in 1974. The islands are currently controlled by the PRC but still claimed by Vietnam. Later in 1988, PRC forces took control of Johnson South Reef after killing approximately 70 Vietnamese sailors stationed on the island. In 2014, the PRC moved the Haiyang Shiyou 981 oil rig into waters near the Paracels sparking a standoff between Vietnamese and PRC coast guard vessels. PRC ships rammed and blasted water at Vietnamese ships.

Many of the islands do not offer economic value, but have strategic value. The Paracels for example, offer almost no economic value but instead give the PRC a first strike capability against Vietnam by placing airstrips and facilities closer to the Vietnam mainland. With the enhanced strike capability the islands offer, Vietnam may attempt to balance the strategic advantage of the PRC's artificial islands with islands of their own.

IMPLICATIONS-MALAYSIA & INDONESIA

The implications of the PRC's artificial islands for Malaysia and Indonesia should have little effect on territorial claims but would more likely affect their energy policies. Territorial disputes for both countries are much smaller. Malaysia occupies only three islands at the southern end of the Spratly Islands, but these three islands are claimed by Brunei. Indonesia does not claim any of the disputed islands. Currently, Indonesia is an oil importer and Malaysia is expected to become an oil importer in the near future. This may influence Indonesia and Malaysia to compete with the PRC for energy, shipping routes, and energy security.

IMPLICATIONS-UNITED STATES

The US is likely to experience more brinksmanship from the PRC. By maintaining

open shipping routes throughout the region, the US is supporting its own national security, economic access, and political influence. Ninety percent of the oil destined for US allies goes through the Strait of Malacca and the South China Sea. However, the PRC believes that the US is attempting to expand its hegemonic influence in the region and to keep the PRC out. Because of the competing interests of the US and the PRC, we are likely to see more incidents like the Cowpens incident. On 5 December 2013, a PLAN ship deliberately crossed the path of the USS Cowpens. The USS Cowpens was forced to maneuver to avoid colliding with the PLAN ship.

CONCLUSION

The seven artificial islands built by the PRC help protect their energy security, national security, and territorial claims in the South China Sea. The islands give the PRC the capability to project power throughout the region, protect oil shipments and create a buffer for the mainland. They also reinforce existing territorial claims by making precise scientific measurements of the original features impossible. These islands also have ramifications for the US and other countries in the region, in terms of security, energy, and territorial claims.

REFERENCES

- AMTI Leadership. "Keynote Speech by Ambassador Cui Tiankai at the International Conference on China-US Cooperation in Global Security Affairs." Center for Strategic & International Studies. April 20, 2015. Accessed: 2015/6/5
<http://amti.csis.org/china-responds-a-speech-by-amb-cui-tiankai/>
- "Asia Maritime Transparency Initiative: Island Tracker." *Center for Strategic & International Studies*. Accessed: 2015/6/5.
<http://amti.csis.org/island-tracker/>
- Batongbacal, Jay. "Arbitration 101: Philippines v. China" *Center for Strategic & International Studies*. Jan. 21, 2015. Accessed: 2015/6/5. <http://amti.csis.org/arbitration-101-philippines-v-china/>
- "Chronological lists of ratification of, accessions and successions to the convention and the related agreement as at 3 October 2014." *United*

- Nations*. http://www.un.org/Depts/los/reference_files/chronological_lists_of_ratifications.htm
- Clinton, Hilary. "America's Pacific Century." *Foreign Policy*. Oct. 11, 2011. Accessed: 2015/6/5. <http://foreignpolicy.com/2011/0/11/americas-pacific-century/>
- Cruze de Castro, Renato. "U.S.-Philippines Balikatan Exercise in the Face of Chinese Island Building." *Center for Strategic & International Studies*. April 17, 2015. Accessed: 2015/6/5. <http://amti.csis.org/u-s-philippines-balikatan-exercise-in-the-face-of-chinese-island-building/>
- Dutton, Peter A. "China's Maritime Disputes in the East and South China Seas." *Naval War College Review* 67, no. 3 (Summer 2014): 7-18. *Academic Search Premier*, EBSCOhost (accessed May 31, 2015).
- "Grounded ship is PH's last line of defense vs China." *Philippines Daily Inquirer*. May 23, 2013. Accessed: 2015/06/01. www.lexisnexis.com/hottopics/lnacademic.
- Hossain, Kamrul. "The UNCLOS and the US-China Hegemonic Competition over the South China Sea." *Journal Of East Asia & International Law* 6, no. 1 (Spring 2013): 107-133. *Academic Search Premier*, EBSCOhost (accessed May 31, 2015).
- Hutchison, Charles S., and V.R. Vijayan. "What are the Spratly Islands?." *Journal Of Asian Earth Sciences* 39, no. 5 (October 9, 2010): 371-385. *Academic Search Premier*, EBSCOhost (accessed May 31, 2015).
- International Energy Agency. "Southeast Asia Energy Outlook." Paris, France, September 2013.
- Kaplan, Robert D. *Asia's Cauldron: The South China Sea and the End of a Stable Pacific*. Random House, 2014.
- "Mutual Defense Treaty Between the Republic of the Philippines and the United States of America." Washington, D.C. August 30, 1951. <http://www.documentcloud.org/documents/1338723-us-philippines-security-treaty-1951.html>
- Poling, Gregory. "Legal Challenge of China's Island Building," *Center for Strategic & International Studies*. Feb. 18, 2015. Accessed: 2015/6/15. <http://amti.csis.org/the-legal-challenge-of-chinas-island-building/>
- Rosenber, Matthew. "China Deployed Artillery on Disputed Island, US Says." *New York Times*. May 29, 2015. Accessed: 2015/6/5. www.nytimes.com
- Santos, Matikas. "Chinese reclamation on Mabini Reef likely for military purposes." *Philippines Daily Inquirer*. May 15, 2014. Accessed: 2015/05/31. www.lexisnexis.com/hottopics/lnacademic.
- Slavin, Erik. "Chinese, Vietnamese vessels collide, sparking standoff." *Stars and Stripes*. May 7, 2014. Accessed: 2015/06/05. www.lexisnexis.com/hottopics/lnacademic.
- "Spratly Islands." *CIA World Factbook*. Last updated: Jan 22, 2015. Accessed: 2015/6/5. <https://www.cia.gov/library/publications/the-world-factbook/geos/pg.html>
- "The Republic of the Philippines v. The People's Republic of China" *Permanent Court of Arbitration*. Jan. 22, 2013. Accessed: 2015/6/5. http://www.pcacpa.org/showpage.asp?pag_id=1529 <http://www.documentcloud.org/documents/1338723-us-philippines-security-treaty-1951.html>
- Tønnesson, Stein. "The Paracels: The "Other" South China Sea Dispute." *Asian Perspective* (2002): 145-169.
- Trowbridge, Leann. "South China Sea, between the Philippines, Borneo, Vietnam, and China" *World Wildlife Fund*. Accessed: 2015/6/5. <http://www.worldwildlife.org/ecoregions/im0148>
- Truong Thuy, Tran. "Construction in the South China Sea: A Comparative View" *Center for Strategic & International Studies*. April 17, 2015. Accessed: 2015/6/5. <http://amti.csis.org/construction-in-the-south-china-sea-a-comparative-view/>
- "United Nations Convention on the Law of the Sea." *United Nations*. Montego Bay, Jamaica. December 10, 1982. <http://www.documentcloud.org/documents/1338703-unclos-e.html>
- Wang, Xin-Zhi, et al. "Engineering characteristics of the calcareous sand in Nansha Islands, South China Sea." *Engineering Geology* 120, no. 1-4 (June 10, 2011): 40-47. *Academic*

Search Premier, EBSCOhost (accessed May 31, 2015).
Zhao, Chunfu, and Bin Chen. "China's oil security from the supply chain perspective: A

review." *Applied Energy* 136, (December 31, 2014): 269-279. *Academic Search Premier*, EBSCOhost (accessed May 31, 2015).