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China and the U.S.: Cooperation, Competition and/or Conflict

An Experimental Assessment

PART SIX: CHINA, THE U.S., AND OTHER ASIAN POWERS — COMPETING CLAIMS IN ASIA AND THE PACIFIC

Working Draft
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Photo: GOH CHAI HIN/AFP/ Getty Images

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China, the U.S., and Other Asian Powers: Competing Claims in Asia and the Pacific

China's 2019 Defense White Paper is the first such Chinese documents to describe China's security policies towards its neighbors in detail. It is highly positive in character, minimizes the levels of tension involved, and declare China's desire to find peaceful and cooperative solutions to ever problems. These China views are question in the first series of charts in in this section

The maps and data that follow, however, describe a wide range of Chinese territorial disputes with its neighbors, and key areas of U.S.-Chinese competition in the South China Sea. They illustrate a wide range of differences between China and its neighbors, as well as the emergence of a wide range of new Chinese facilities in the South China Sea – and the related First and Second Island Chains – that directly challenge the past level of U.S. naval, air, and missile superiority in this area and that give China substantial new strategic leverage over its neighbors.

These claims are complex. They often grow out of claims based on decisions during an era of colonial exploitation, and mix history with modern international law and the search for national advantage. The legitimacy of any given claim is reflected in the fact that there are so many different maps and descriptions of the issues involved in most claims, and is too complex to address in this summary graphic assessment.

As for their impact on U.S. and Chinese competition, the U.S. and Chinese positions regarding such claims may be broadly summarized as follows:

- The U.S. does not take a position towards such Chinese claims. It focuses instead on its interpretation of international law and the position that China should negotiate flexibly, should not exploit its rising military power in such negotiations, and should negotiate collectively where there a multiple claims – rather than attempt to negotiate on a one-on-one basis that gives it a natural advantage. It also claims such negotiations should be based on freedom of navigation and limited territorial control of naval and maritime traffic and air control zones based on the territorial limits set under international law.
- China's position has been that it is obeying international law. It states that it is asserting claims that reflect its historical rights – some dating back to the period before Western colonization and others relating to Japanese occupation and World War II. It does not accept decisions made outside negotiations with China made by international bodies and claims the right to build bases and military facilities on the reefs and islands under its control.

Many if these competing claims represent boundaries based on the peak influence of a given regional power or colonial state relative to China, just as China's claims have tenuous historical legitimacy over time. It is also important to note that such claims – and much of modern international law – is the product of a period when China was at war, occupation, or comparatively weak; when the military capability to control maritime and traffic was far less developed, and offshore rights and economic access to remote boundary areas was far less important. As the next sections show, this is particularly true of the South China Sea.

As the same time, legal and economic claims cannot be divorced from strategic influence and military power. As China has shown in the South China Sea, the occupation and arming of key strategic points in the Western Pacific can have a major impact on both its strategic influence and the regional military balance.

China 2019 Defense White Paper on Other Asian Powers and Competing Claims - I

Asia-Pacific countries are increasingly aware that they are members of a community with shared destiny. Addressing differences and disputes through dialogue and consultation has become a preferred policy option for regional countries, making the region a stable part of the global landscape. The Shanghai Cooperation Organization (SCO) is forging a constructive partnership of non-alliance and non-confrontation that targets no third party, expanding security and defense cooperation and creating a new model for regional security cooperation. The China-ASEAN Defense Ministers' Informal Meeting and the ASEAN Defense Ministers' Meeting Plus (ADMM-Plus) play positive roles in enhancing trust among regional countries through military exchanges and cooperation. The situation of the South China Sea is generally stable and improving as regional countries are properly managing risks and differences. Steady progress has been made in building a coordinated counter-terrorism mechanism among the militaries of the regional countries. A balanced, stable, open and inclusive Asian security architecture continues to develop.

…Regional hotspots and disputes are yet to be resolved. Despite positive progress, the Korean Peninsula still faces uncertainty. South Asia is generally stable while conflicts between India and Pakistan flare up from time to time. Political reconciliation and reconstruction in Afghanistan is making progress in the face of difficulties. Problems still exist among regional countries, including disputes over territorial and maritime rights and interests, as well as discord for ethnic and religious reasons. Security hotspots rise from time to time in the region.

China's homeland security still faces threats. Land territorial disputes are yet to be completely resolved. Disputes still exist over the territorial sovereignty of some islands and reefs, as well as maritime demarcation. Countries from outside the region conduct frequent close-in reconnaissance on China by air and sea, and illegally enter China's territorial waters and the waters and airspace near China's islands and reefs, undermining China's national security.

China's overseas interests are endangered by immediate threats such as international and regional turmoil, terrorism, and piracy. Chinese diplomatic missions, enterprises and personnel around the world have been attacked on multiple occasions. Threats to outer space and cyber security loom large and the threat of non-traditional security issues posed by natural disasters and major epidemics is on the rise.

…China has made every effort to create favorable conditions for its development through maintaining world peace, and has equally endeavored to promote world peace through its own development. China sincerely hopes that all countries will choose the path of peaceful development and jointly prevent conflicts and wars.

China is committed to developing friendly cooperation with all countries on the basis of the Five Principles of Peaceful Coexistence. It respects the rights of all peoples to independently choose their own development path, and stands for the settlement of international disputes through equal dialogue, negotiation and consultation. China is opposed to interference in the internal affairs of others, abuse of the weak by the strong, and any attempt to impose one's will on others. China advocates partnerships rather than alliances and does not join any military bloc. It stands against aggression and expansion, and opposes arbitrary use or threat of arms. The development of China's national defense aims to meet its rightful security needs and contribute to the growth of the world's peaceful forces. History proves and will continue to prove that China will never follow the beaten track of big powers in seeking hegemony. No matter how it might develop, China will never threaten any other country or seek any sphere of influence.

Source: Quotes adapted from *China's National Defense in a New Era*, July 2019, http://www.xinhuanet.com/english/download/whitepaperonnationaldefenseinnewera.doc

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China 2019 Defense White Paper on Other Asian Powers and Competing Claims - II

…China has a land border of more than 22,000 km and a coastline of over 18,000 km, China surpasses most of countries in the number of neighboring countries, the length of land border, and the complexity of maritime security. Therefore, it is a daunting task for China to safeguard its territorial sovereignty, maritime rights and interests, and national unity.

China's armed forces maintain a rigorous guard against encroachment, infiltration, sabotage or harassment so as to safeguard border security and stability. China has signed border cooperation agreements with 9 neighboring countries and set up border meeting mechanisms with 12 countries. China's armed forces have established mechanisms for exchanges with neighboring countries at three levels: national defense ministry, Theater Commands (TCs), and border troops. They conduct regular friendly mutual visits, working meetings, joint patrols and joint exercises targeting transnational crime with their foreign counterparts. They work together with Kazakhstan, Kyrgyzstan, Russia and Tajikistan to implement the border disarmament treaty. They strive to promote stability and security along the border with India, and take effective measures to create favorable conditions for the peaceful resolution of the Donglang (Doklam) standoff. They enhance control along the border with Afghanistan to guard against the infiltration of terrorists. They strengthen security management along the border with Myanmar, so as to secure stability and public safety in the border areas. Since 2012, China's border troops have completed over 3,300 joint patrols and conducted over 8,100 border meetings with their foreign counterparts. They have cleared mines from 58 square kilometers of land, closed 25 square kilometers of landmine area, and disposed of 170,000 explosive devices such as landmines along the borders with Vietnam and Myanmar.

China's armed forces defend important waters, islands and reefs in the East China Sea, the South China Sea and the Yellow Sea, acquire full situation awareness of adjacent waters, conduct joint rights protection and law enforcement operations, properly handle maritime and air situations, and resolutely respond to security threats, infringements and provocations on the sea. Since 2012, China's armed forces have deployed vessels on over 4,600 maritime security patrols and 72,000 rights protection and law enforcement operations, and safeguarded maritime peace, stability and order.

China's armed forces conduct air defense, reconnaissance and early warning, monitor China's territorial air and peripheral air space, carry out alert patrols and combat takeoff, and effectively respond to emergencies and threats to maintain order and security in the air.

With a commitment to building a community with a shared future in its neighborhood, China endeavors to deepen military partnership with its neighbors. The PLA keeps close contacts with the military leaderships of the neighboring countries. Given more than 40 reciprocal military visits at and above service commander level every year, high-level military exchanges have covered almost all of China's neighbors and contributed to growing strategic mutual trust. China has set up defense and security consultations as well as working meeting mechanisms with 17 neighboring countries to keep exchange channels open. In recent years, China has regularly held serial joint exercises and training on counter-terrorism, peacekeeping, search and rescue, and tactical skills with its neighboring countries, and carried out extensive exchanges and practical cooperation on border and coastal defense, academic institutions, think tanks, education, training, medical science, medical service, and equipment and technology. In addition, defense cooperation with ASEAN countries is moving forward. The military relationships between China and its neighboring countries are generally stable.

Source: Quotes adapted from *China's National Defense in a New Era*, July 2019, http://www.xinhuanet.com/english/download/whitepaperonnationaldefenseinnewera.doc

China 2019 Defense White Paper on Other Asian Powers and Competing Claims - III

…China actively supports the institutional development of the Conference on Interaction and Confidence-Building Measures in Asia (CICA), advocates common, comprehensive, cooperative and sustainable security in Asia, and plays an important role in building an Asian security cooperation architecture.

In the principles of openness, inclusiveness and pragmatic cooperation, China actively participates in multilateral dialogues and cooperation mechanisms including the ADMM-Plus, ASEAN Regional Forum (ARF), Shangri-La Dialogue, Jakarta International Defense Dialogue and Western Pacific Naval Symposium, regularly holds China-ASEAN defense ministers' informal meetings, and proposes and constructively promotes initiatives to strengthen regional defense cooperation. The China-ASEAN *Maritime Exercise-2018,* the first between Chinese and ASEAN militaries, was held in October 2018 and demonstrated the confidence and determination of the countries in maintaining regional peace and stability.

Upholding amity, sincerity, mutual benefit and inclusiveness in its neighborhood diplomacy, China is committed to building an amicable relationship and partnership with its neighbors, and peaceful resolution of disputes over territory and maritime demarcation through negotiation and consultation. China has settled its border issues with 12 of its 14 land neighbors and signed treaties on good-neighborliness, friendship and cooperation with 8 countries on its periphery.

China holds it a priority to manage differences and enhance mutual trust in maintaining the stability of its neighborhood. China has proposed a China-ASEAN defense ministers' hotline and established direct defense telephone links with Vietnam and the ROK. It has kept contact through telephone or fax, and conducted border meetings and joint patrols, with the militaries of the countries on its land borders on regular or irregular basis. Since 2014, five high-level border meetings between China and Vietnam have been held. To implement the important consensus reached by the leaders of China and India, the two militaries have exchanged high-level visits and pushed for a hotline for border defense cooperation and mechanisms for border management and border defense exchanges. Since the second half of 2016, China and the Philippines have increased dialogue on maritime security, bringing the two sides back on track in addressing the South China Sea issue through friendly consultation. In May 2018, the defense authorities of China and Japan signed a memorandum of understanding on maritime and air liaison and put it into practice in June.

China and the ASEAN countries have comprehensively and effectively implemented the DOC, and actively advanced the consultations on the COC. They are committed to extending practical maritime security cooperation, developing regional security mechanisms and building the South China Sea into a sea of peace, friendship and cooperation

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Source: Quotes adapted from *China's National Defense in a New Era*, July 2019, http://www.xinhuanet.com/english/download/whitepaperonnationaldefenseinnewera.doc

OSD on China's Strategy Towards Territorial Disputes - 2019

China seeks to secure its objectives without jeopardizing the regional stability that remains critical to the economic development that has helped the CCP maintain its monopoly on power. However, China's leaders employ tactics short of armed conflict to pursue China's strategic objectives through activities calculated to fall below the threshold of provoking armed conflict with the United States, its allies and partners, or others in the Indo-Pacific region. These tactics are particularly evident in China's pursuit of its territorial and maritime claims in the South and East China Seas as well as along its borders with India and Bhutan. In 2018, China continued militarization in the South China Sea by placing anti-ship cruise missiles and long- range surface-to-air missiles on outposts in the Spratly Islands, violating a 2015 pledge by Chinese President Xi Jinping that "China does not intend to pursue militarization" of the Spratly Islands. China is also willing to employ coercive measures – both military and non- military – to advance its interests and mitigate opposition from other countries.

…China's use of force in territorial disputes has varied widely since 1949. Some disputes led to war, as in border conflicts with India in 1962 and Vietnam in 1979. A contested border with the former Soviet Union during the 1960s raised the possibility of nuclear war. In recent cases involving land border disputes, China has sometimes been willing to compromise with and even offer concessions to its neighbors. Since 1998, China has settled 11 land-based territorial disputes with six of its neighbors. In recent years, China has employed a more coercive approach to deal with several disputes that continue over maritime features and ownership of potentially rich offshore oil and gas deposits.

China and Japan have overlapping claims to both the continental shelves and the exclusive economic zones (EEZs) in the **East China Sea**. The East China Sea contains natural gas and oil, though hydrocarbon reserves are difficult to estimate. Japan maintains that an equidistant line from each country involved should separate the EEZs, while China claims an extended continental shelf beyond the equidistant line to the Okinawa Trench. Japan has accused China of breaching a principled consensus reached in 2008 that both sides would respect an equidistant median line in the East China Sea for resource development while conducting joint development of oil and natural gas field in a delineated area spanning the line near the northern end. Japan is concerned that China has conducted oil and gas drilling on the Chinese side of the median line of the East China Sea since 2013. China continues to contest Japan's administration of the nearby Senkaku Islands.

The **South China Sea** plays an important role in security considerations across East Asia because Northeast Asia relies heavily on the flow of oil and commerce through South China Sea shipping lanes, including more than 80 percent of the crude oil to Japan, South Korea, and Taiwan. China claims sovereignty over the Spratly and Paracel Island groups and other land features within its self-proclaimed "nine-dash line" – claims disputed in whole or part by Brunei, the Philippines, Malaysia, and Vietnam. Taiwan, which occupies Itu Aba Island in the Spratly Islands, makes the same territorial assertions as China. In 2009, China protested extended continental shelf submissions in the South China Sea made by Malaysia and Vietnam. In its protest to the UN Commission on the Limits of the Continental Shelf, China included its ambiguous "nine-dash line" map. China also stated in a 2009 *note verbale* that it has "indisputable sovereignty over the islands in the South China Sea and the adjacent waters, and enjoys sovereign rights and jurisdiction over the relevant waters as well as the seabed and subsoil thereof." In July 2016, a tribunal established pursuant to the Law of the Sea Convention ruled that China's claims to "historic rights" over the South China Sea encompassed by the "nine-dash line" could not exceed its maritime rights under the Law of the Sea Convention. China did not participate in the arbitration, and Chinese officials publicly voiced opposition to the ruling. By the terms of the Convention, the ruling is binding on China.

Tensions remain with India along the shared border over **Arunachal Pradesh**, which China asserts is part of Tibet and therefore part of China, and over the **Aksai Chin** region at the western end of the Tibetan Plateau. Chinese and Indian patrols regularly encounter one another along the disputed border, and both sides often accuse one another of border incursions. In 2017, Indian forces intercepted a PLA road construction unit on the Doklam Plateau near the Doka La Pass, near the tri-border region of China, Bhutan, and India. The encounter led to a 73-day standoff before both sides agreed to mutually disengage from the site.

Source: Office of the Secretary of Defense, Military and Security Developments Involving the Republic of China, Annual Report to Congress, May 2018, Department of Defense. *China Military Power 2019*, pp. ii & 8.

DIA on China's Expanding Regional and Global Role: 2019 - I

Even as PLA capabilities have improved and units have begun to operate farther from the Chinese mainland, Beijing has continued to emphasize what it perceives as a "period of strategic opportunity" during which it can pursue development without a major military conflict. In line with this perception, Beijing has implemented an approach to external engagement that seeks to enhance China's reach and power through activities calculated to fall below the threshold of alarming the international community about China's rise or provoking the United States, its allies and partners, or others in the Asia-Pacific region into military conflict or an anti-China coalition. This is particularly evident in China's pursuit of its territorial and maritime sovereignty claims in the South and East China Seas. In the South China Sea, China primarily uses maritime law enforcement ships, with its Navy ships in protective positions, to pressure other claimants and limit access to Chinese-occupied features. China's expansion of disputed features and construction in the Spratly Islands using large-scale land reclamation demonstrates China's capacity—and a shift in willingness to exercise that capacity short of military conflict—to strengthen China's control over disputed areas, enhance China's presence, and challenge other claimants.

China's maritime emphasis and concern with protecting its overseas interests have increasingly drawn the PLA beyond China's borders and immediate periphery. The evolving focus of the PLA Navy (PLAN)— from "offshore waters defense" to a mix of offshore waters defense and "open-seas protection"—reflects China's desire for a wider operational reach. Since 2009, the PLA has incrementally expanded its global operations beyond the previously limited port calls and UN PKO missions. The PLAN has expanded the scope and frequency of extended-range naval deployments, military exercises, and engagements.

The establishment in Djibouti of the PLA's first overseas military base with a deployed company of Marines and equipment, and probable follow-on bases at other locations, signals a turning point in the expansion of PLA operations in the Indian Ocean region and beyond. These bases, and other improvements to the PLA's ability to project power during the next decade, will increase China's ability to deter by military force and sustain operations abroad.

Beijing's longstanding interest to eventually compel Taiwan's reunification with the mainland and deter any attempt by Taiwan to declare independence has served as the primary driver for China's military modernization. Beijing's anticipation that foreign forces would intervene in a Taiwan scenario led the PLA to develop a range of systems to deter and deny foreign regional force projection. The implementation of Hu's New Historic Missions in 2004 led to the incremental expansion of the military's modernization priorities to develop a PLA capable of operating in new domains and at increasing distances from the mainland. During this modernization process, PLA ground, air, naval, and missile forces have become increasingly able to project power during peacetime and in the event of regional conflicts. Beijing almost certainly will use this growing ability to project power to bolster international perceptions of its role as a regional power and global stakeholder.

Although Beijing states that its intent is to serve as a stabilizing force regionally, in practice the PLA's actions frequently result in increased tensions. Since 2012, Beijing has routinely challenged Tokyo's Senkaku Island claims in the East China Sea. China's Coast Guard frequently conducts incursions into the contiguous zone surrounding the islands to further China's claims, while its Navy operates around the claims to enforce administration. The PLA has expanded and militarized China's outposts in the South China Sea, and China's Coast Guard, backed by the PLAN, commonly harasses Philippine and Vietnamese ships in the region.

Examples of incremental improvements to PLA power projection in the region are readily found in annual military exercises and operations. For instance, in 2015 the PLA Air Force (PLAAF) carried out four exercise training missions past the first island chain through the Bashi Channel, the northernmost passage of the Luzon Strait, and through the Miyako Strait closer to Japan. The Miyako Strait flights were 1,500 kilometers from Guam, within range of the PLAAF's CJ-20 air-launched land-attack cruise missile (LACM). Also in 2015, the PLAAF began flying the H-6K medium-range bomber, the PLAAF's first aircraft capable of conducting strikes on Guam (with air-launched LACMs like the CJ-20), past the first island chain into the western Pacific.

Source: DIA, *China Military Power: Modernizing a Force to Fight and Win*, *2019*, DIA-02-1706-085, 2019, pp. 29-28.

DIA on China's Expanding Regional and Global Role: 2019 - II

China is also developing new capabilities that will enhance Beijing's ability to project power. In September 2016, then-PLAAF Commander Gen Ma Xiaotian confirmed for the first time that the PLAAF was developing a new long-range bomber that would undoubtedly exceed the range and capabilities of the H-6K. Although the H-6K recently began flying with LACMs, this Chinese-built airframe is the 10th design variant of the Soviet Tu-16, which began flying in 1952. In 2016, China and Ukraine agreed to restart production of the world's largest transport aircraft, the An-225, which is capable of carrying a world-record payload of nearly 254 tons. China expects the first An-225 to be delivered and operational by 2019. If used by the military, this capability would facilitate the PLA's global reach.

In addition to land-based aircraft, China is currently building its first domestically designed and produced aircraft carrier. The primary purpose of this first domestic aircraft carrier will be to serve a regional defense mission. Beijing probably also will use the carrier to project power throughout the South China Sea and possibly into the Indian Ocean. The carrier conducted initial sea trials in May 2018 and is expected to enter into service by 2019.

Other areas that reflect China's growing military presence abroad include China's participation in UN peacekeeping operations. Separately, China routinely employs its modern hospital ship, *Peace Ark*, to support HADR missions worldwide. In 2015, the PLA conducted its first permissive noncombatant evacuation operation, to extricate Chinese and other civilians from Yemen supported by Yemeni security forces.

China's efforts to enhance its presence abroad, such as establishing its first foreign military base in Djibouti and boosting economic connectivity by reinvigorating the New Silk Road Economic Belt and 21st Century Maritime Road under the "Belt and Road Initiative" (BRI), could enable the PLA to project power at even greater distances from the Chinese mainland. In 2017, China's leaders said that the BRI, which at first included economic initiatives in Asia, South Asia, Africa, and Europe, now encompasses all regions of the world, including the Arctic and Latin America, demonstrating the scope of Beijing's ambition.

Growing PLA mission areas and enhanced presence abroad may lead to an increase in demand for the PLA to protect China's overseas interests and provide support to Chinese personnel. China's increased presence also introduces the possibility that the PLA could play a more prominent role in delivering global public goods in the future.

Source: DIA, *China Military Power: Modernizing a Force to Fight and Win*, *2019*, DIA-02-1706-085, 2019, pp. 29-28

China & Maritime Issues: Chinese 2017 White Paper - I

The overall maritime situation remains stable in the region. It is in all parties' common interest and consensus to maintain maritime peace, security and freedom of navigation and overflight. However, non-traditional maritime security threats are on the rise. The ecological environment in many marine areas has been damaged. Marine natural disasters occur frequently, and leaks of oil or hazardous chemicals happen from time to time. In addition, there are often cases of piracy, smuggling and drug trafficking. Misunderstandings and lack of mutual trust among some countries about traditional security issues also pose risks to maritime security.

China has called for even-handed, practical and mutually beneficial maritime security cooperation. It adheres to the purposes and principles of the Charter of the United Nations, the fundamental principles and legal system defined by universally recognized international laws and modern maritime laws, including the UNCLOS and the Five Principles of Peaceful Coexistence, in dealing with regional maritime issues, and is committed to coping with traditional and non-traditional maritime security threats through cooperation. Maintaining maritime peace and security is the shared responsibility of all countries in the region, and serves the common interests of all parties. China is dedicated to strengthening cooperation and jointly tackling challenges with all relevant parties so as to maintain maritime peace and stability.

China has indisputable sovereignty over the Nansha Islands and their adjacent waters. China has always been committed to resolving disputes peacefully through negotiation and consultation, managing disputes by setting rules and establishing mechanisms, realizing mutually beneficial outcomes through cooperation for mutual benefit, and upholding peace and stability as well as freedom of navigation and overflight in the South China Sea. China and the ASEAN countries stay in close communication and dialogue on the South China Sea issue.

When fully and effectively implementing the DOC, the two sides have strengthened pragmatic maritime cooperation, steadily advanced the consultations on COC and made positive progress. China resolutely opposes certain countries' provocations of regional disputes for their selfish interests.

Ministry of Foreign affairs, China's Policies on Asia-Pacific Security Cooperation, January 2017, https://www.fmprc.gov.cn/mfa_eng/zxxx_662805/t1429771.shtml**,** 2017/01/11.

China & Maritime Issues: Chinese 2017 White Paper - II

China is forced to make necessary responses to the provocative actions which infringe on China's territorial sovereignty and maritime rights and interests, and undermine peace and stability in the South China Sea. No effort to internationalize and judicialize the South China Sea issue will be of any avail for its resolution; it will only make it harder to resolve the issue, and endanger regional peace and stability.

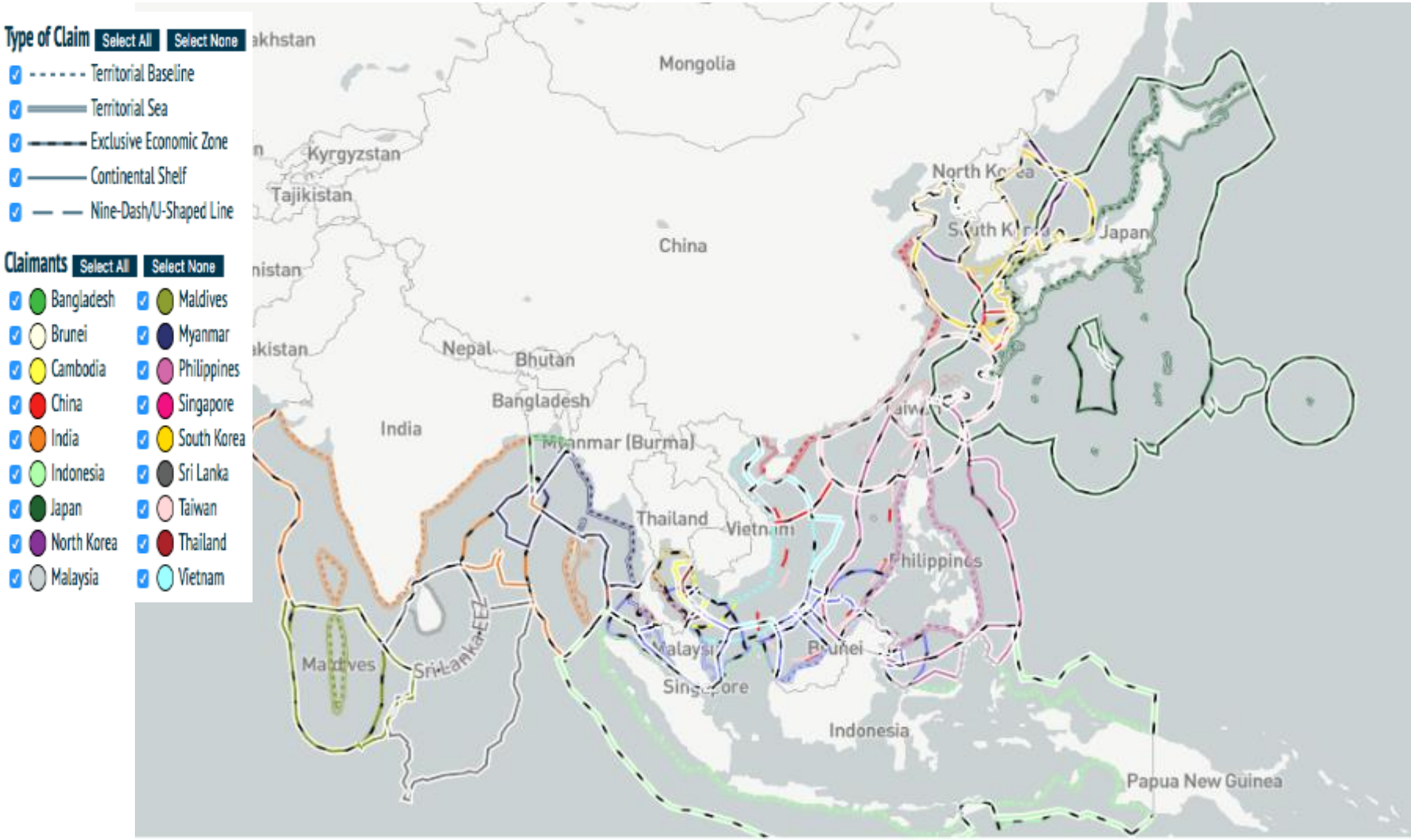
Issues concerning the Diaoyu Islands and maritime demarcation in the East China Sea exist between China and Japan. The Diaoyu Islands are an integral part of China's territory. China's sovereignty over the Diaoyu Islands has a sufficient historical and legal basis. China and Japan have maintained dialogues on issues related to the East China Sea and held several rounds of high-level consultations.

They have had communication and reached consensus on crisis management and control in the air and waters of the East China Sea, maritime law enforcement, oil and gas exploration, scientific research, fisheries and other issues. China is willing to properly manage the situation and resolve related issues through continued dialogue and consultation.

China and the ROK have extensive and in-depth exchanges of views on maritime demarcation, and launched relevant negotiations in December 2015.

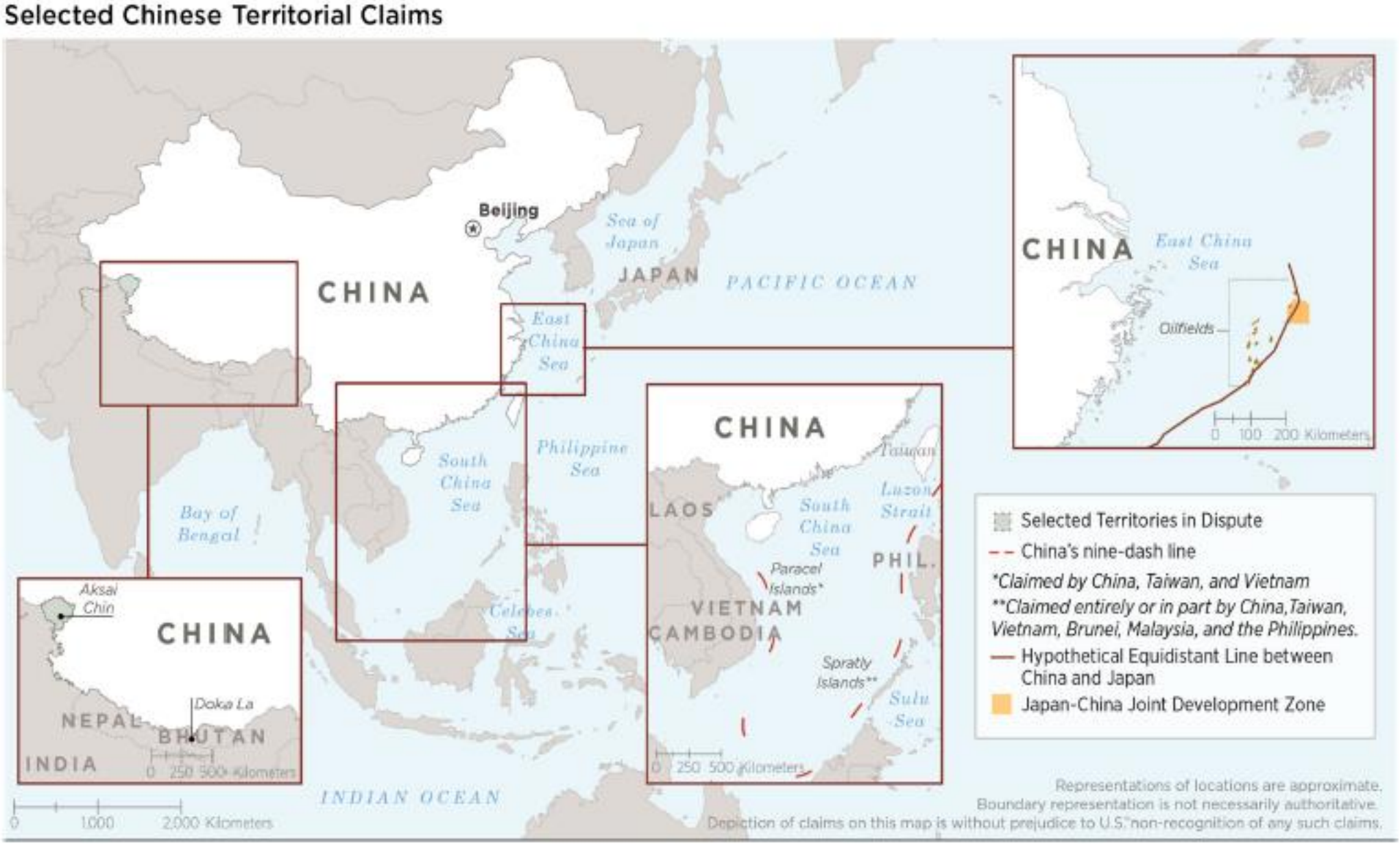
Ministry of Foreign affairs, China's Policies on Asia-Pacific Security Cooperation, January 2017, https://www.fmprc.gov.cn/mfa_eng/zxxx_662805/t1429771.shtml, 2017/01/11

Full Range of Competing National Claims in the Pacific and Indian Ocean



Adapted from CSIS Asia Maritime Transparency Initiative , interactive maps, https://amti.csis.org/maritime-claims-map/, 1.7.19

OSD on Range of Chinese Territorial Claims - 2019



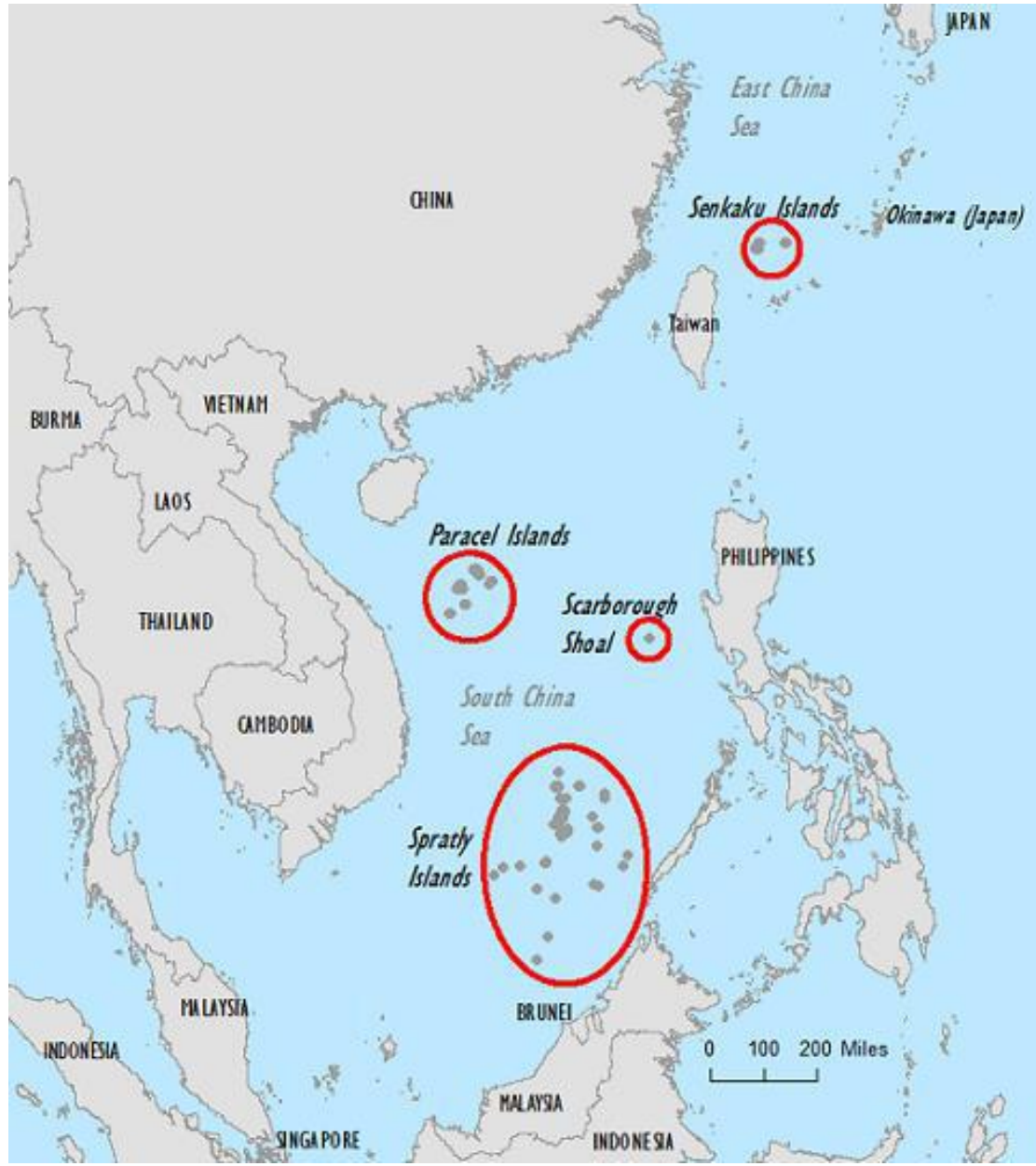
Source: Office of the Secretary of Defense, Military and Security Developments Involving the Republic of China, Annual Report to Congress, May 2018, Department of Defense. *China Military Power 2019*, p.8.

DIA on Range of Chinese Territorial Claims - 2019

DIA, *China Military Power, Modernizing a Force to Win - 2019*, Department of Defense, 2019, p.11.

Maritime Territorial Disputes Involving China

Island groups involved in principal disputes



Source: **China's Actions in South and East China Seas: Implications for U.S. Interests—Background and Issues for Congress, Congressional Research Service,** R42784 / Updated January 31, 2019 https://crsreports.congress.gov, p. 8.

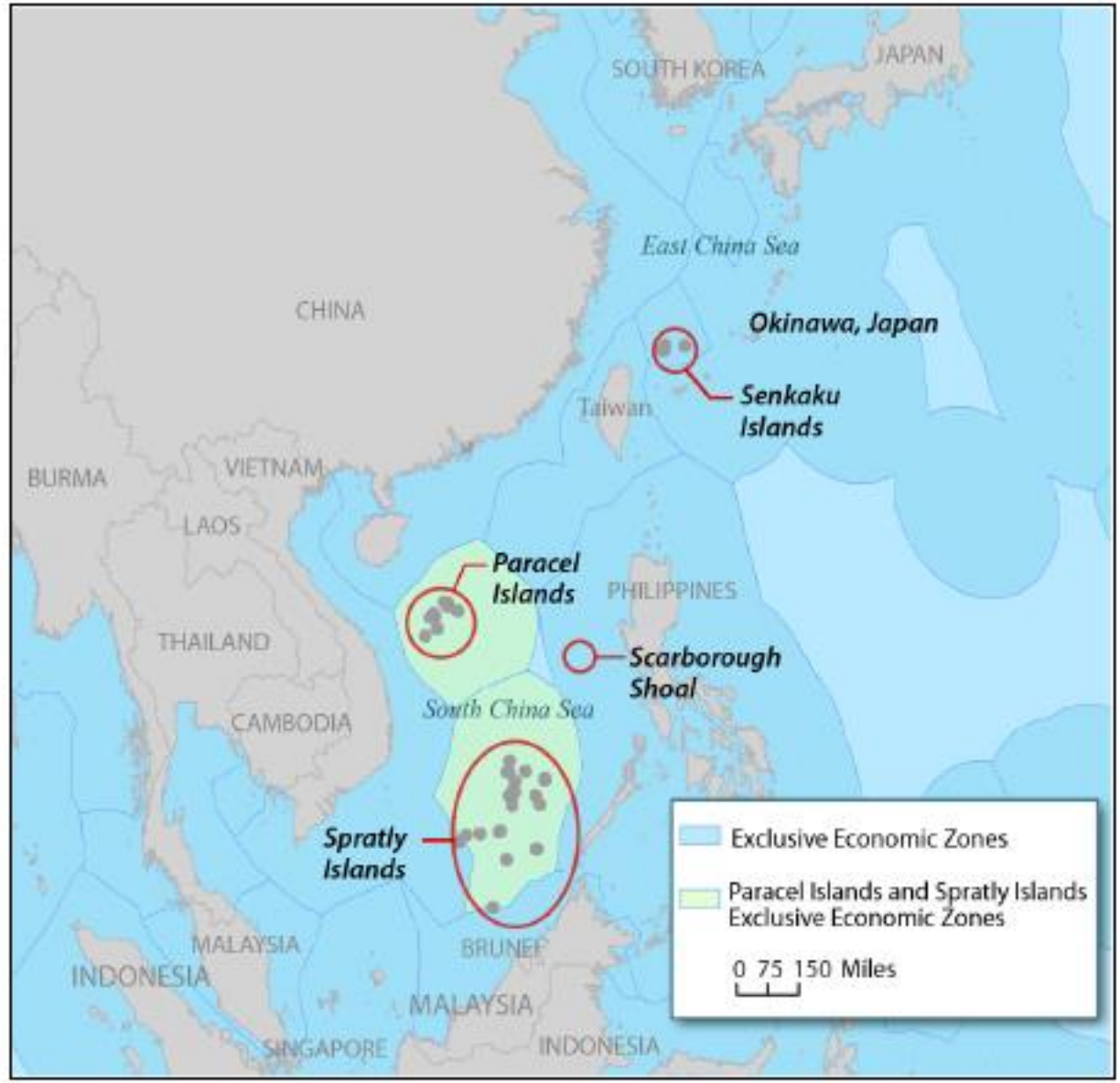
EEZs Overlapping Zone Enclosed by Map of Nine-Dash Line

Source: Source: Eurasia Review, September 10, 2012.

Notes: (1) The red line shows the area that would be enclosed by connecting the line segments in the map of the nine-dash line. Although the label on this map states that the waters inside the red line are "China's claimed territorial waters," China has maintained ambiguity over whether it is claiming full sovereignty over the entire area enclosed by the nine line segments. (2) The EEZs shown on the map do not represent the totality of maritime territorial claims by countries in the region. Vietnam, to cite one example, claims all of the Spratly Islands, even though most or all of the islands are outside the EEZ that Vietnam derives from its mainland coast.

Source: China's Actions in South and East China Seas: Implications for U.S. Interests—Background and Issues for Congress, Congressional Research Service, R42784 / Updated January 31, 2019 https://crsreports.congress.gov, p. 88.

EEZs in South China Sea and East China Sea

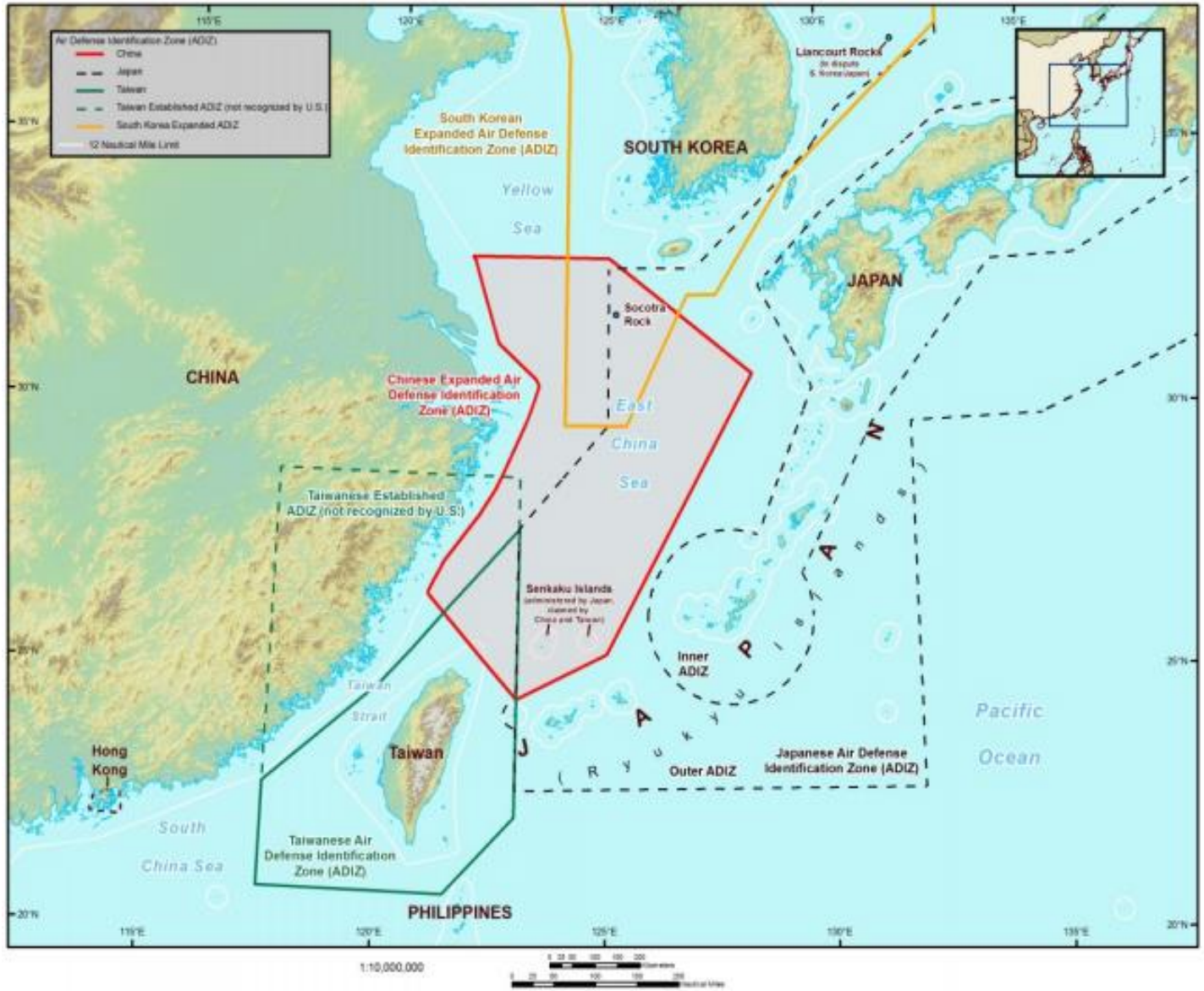


Source: Map prepared by CRS using basemaps provided by Esri. EEZs are from the Flanders Marine Institute (VLIZ) (2011). Maritime Boundaries Geodatabase, version 6. Available at http://www.vliz.be/vmdcdata/marbound.

Note: Disputed islands have been enlarged to make them more visible.

Source: China's Actions in South and East China Seas: Implications for U.S. Interests—Background and Issues for Congress, Congressional Research Service, R42784 / Updated January 31, 2019 https://crsreports.congress.gov, p. 98.

Air Defense Zone (ADIZ) Issues



Source: DoD, *Report to Congress on Military and Security Developments Involving the People's Republic of China 2014*, June 2014, 5.

Disputed Claims in East China Sea

Source: RAND, *US Military Forces and Capabilities for a Dangerous World*, RR1782, 2017, p. 20.

Military Build Up in South China Sea as Part of Overall Change in China's Strategic Posture

Chinese and U.S. Competition in the South China Sea

Taiwan and the Koreas have long been potential areas of possible conflict between China and the United States, although the risks inherent in such conflicts are so great that both powers have recognized the need to overtly or tacitly cooperate in some areas, and limit their level of competition in most others. The South China sea, however, has become an area of steadily increasing competition.

China's steady build-up of its ability to project air, naval, and missile power into the region has produced the force levels shown on the first map in this section and has demonstrated its growing capability to compete with the U.S. in military as well as economic terms. The same is true of China's conversion of reefs and small islands in the area within the two island chains into islands, or larger islands, and its creation of military bases and facilities on these islands – which are shown in the charts that follow. It is clear from these charts and maps that China may not yet have created a full blue water navy in the Western Pacific, but it has created the equivalent of "blue water" islands that approach the limits of the second island chain, and that have greatly extended its radar, missile, and air operations coverage.

The photos of these "bases" that following help illustrate their vulnerability, and China is still developing many of the missile and naval capabilities it would need to directly challenge the U.S. At the same time, the Chinese build-up in the South China Sea has had a major impact on the perceptions of other Asian states – including America's strategic partners.

If it is viewed from the perspective of "hybrid operations" rather than the capability to fight a major war, it has confronted the U.S. with Chinese capabilities that it now cannot challenge directly without escalating to a level of conflict that can easily become more costly than the U.S. will choose to risk. At the same time, China cannot directly exploit its growing military capabilities without facing the mirror image of such risks.

The U.S. tends to see China's actions in the South China Sea as aggressive, but China has its own perspective and interests. The following sections show that China's motives extend far beyond competition of naval claims with Asian powers or expanding its perimeter of military operations far beyond China's coasts. The South China Sea plays a critical role in China's trade and energy imports, while it is far less important in economic terms to the United States. Moreover, it was a key center of the Japanese and western colonial activity that exploited China from the Opium Wars to the end of World War II.

The U.S. also differs from China in the extent to which it separates trade and economic policy from its overall strategy and its military elements. The U.S. has recently pursued trade wars with China and other Asian powers, and abandoned its Trans Pacific Partnership efforts for relatively narrow and loosely defined economic advantages in terms of trade, while simultaneously focusing on military competition and the risk of conflict with China. As noted at the beginning of this analysis, China's grand strategy does not decouple its military and economic dimensions, looks further into the future than the U.S., and focuses at least as much on its overall economic interests as military deterrence and warfighting considerations.

China 2019 Defense White Paper on China's Claims in the South China Sea

China resolutely safeguards its national sovereignty and territorial integrity. The South China Sea islands and Diaoyu Islands are inalienable parts of the Chinese territory. China exercises its national sovereignty to build infrastructure and deploy necessary defensive capabilities on the islands and reefs in the South China Sea, and to conduct patrols in the waters of Diaoyu Islands in the East China Sea. China is committed to resolving related disputes through negotiations with those states directly involved on the basis of respecting historical facts and international law. China continues to work with regional countries to jointly maintain peace and stability. It firmly upholds freedom of navigation and overflight by all countries in accordance with international law and safeguards the security of sea lines of communication (SLOCs).

…China's armed forces defend important waters, islands and reefs in the East China Sea, the South China Sea and the Yellow Sea, acquire full situation awareness of adjacent waters, conduct joint rights protection and law enforcement operations, properly handle maritime and air situations, and resolutely respond to security threats, infringements and provocations on the sea. Since 2012, China's armed forces have deployed vessels on over 4,600 maritime security patrols and 72,000 rights protection and law enforcement operations, and safeguarded maritime peace, stability and order.

China's armed forces conduct air defense, reconnaissance and early warning, monitor China's territorial air and peripheral air space, carry out alert patrols and combat takeoff, and effectively respond to emergencies and threats to maintain order and security in the air.

…Since the second half of 2016, China and the Philippines have increased dialogue on maritime security, bringing the two sides back on track in addressing the South China Sea issue through friendly consultation.

…China and the ASEAN countries have comprehensively and effectively implemented the DOC, and actively advanced the consultations on the COC. They are committed to extending practical maritime security cooperation, developing regional security mechanisms and building the South China Sea into a sea of peace, friendship and cooperation .

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Source: Quotes adapted from *China's National Defense in a New Era*, July 2019, http://www.xinhuanet.com/english/download/whitepaperonnationaldefenseinnewera.doc

OSD on China's Role in the South China Sea: 2019 - I

SOUTHERN THEATER COMMAND

The Southern Theater Command is oriented toward the South China Sea, Southeast Asia border security, and territorial and maritime disputes.

The area of responsibility of the Southern Theater Command (STC) covers mainland and maritime Southeast Asia, including the South China Sea. This geographic area implies that the STC is responsible for securing the South China Sea, supporting the ETC in any invasion of Taiwan, responding to territorial disputes, and assuring the security of SLOCs vital to China's global ambitions. Located within the STC are two group armies, a naval fleet, two marine brigades, one Air Force base, and two Rocket Force bases. .

SOUTH CHINA SEA

Key Takeaways

- Though China has ceased South China Sea land reclamation and completed major military infrastructure at three outposts, it has continued militarization by deploying anti-ship and anti-aircraft missile systems to its Spratly Islands outposts.
- Outposts are capable of supporting military operations since China deployed advanced weapon systems to its outposts in early 2018; however, no large-scale air presence has been observed in the Spratly Islands.

Developments in the Security Situation. In July 2016, a tribunal under the Law of the Sea Convention ruled in the case brought by the Philippines that China's claims to "historic rights" over the South China Sea encompassed by the "nine-dash line" could not exceed its maritime rights under the Law of the Sea Convention. Despite the decision, China continues to use coercive tactics, including the employment of PLA naval and paramilitary vessels, to enforce its claims and advance its interests. China does so in ways calculated to be below the threshold of provoking conflict. In the South China Sea, China has continued militarization. Anti-ship cruise missiles and long-range surface-to-air missiles have been deployed to Spratly Islands outposts, and China's strategic bombers have conducted take-off and landing drills on Woody Island in the Paracel Islands.

China states that an international military presence within the South China Sea is a challenge to its sovereignty. China has continued to escalate coercive tactics to enforce its claims within the South China Sea. This escalation culminated in an unsafe encounter with the *USS Decatur* in September 2018 that led to criticism against China from some U.S. international partners.

Tensions have continued during negotiations between ASEAN countries and China on a code of conduct agreement. China has reportedly proposed that the code of conduct require unanimous approval by all parties for military exercises involving countries outside of China or ASEAN in the South China Sea. In August 2018, China mounted wave-monitoring devices on Woody Island and conducted scientific surveys in contested regions despite negative reactions from Vietnam.

Source: Office of the Secretary of Defense, *Military and Security Developments Involving the Republic of China, Annual Report to Congress*, May 2, 2019, Department of Defense. China Military Power 2018, p. 71-74

OSD on China's Role in the South China Sea: 2019 - II

Outposts Capable of Supporting Military Operations.

In early 2018, China continued its gradual deployment of military jamming equipment as well as advanced anti-ship and anti-aircraft missile systems to its Spratly Islands outposts. The missile systems are the most capable land-based weapons systems deployed by China in the disputed South China Sea. China completed shore-based infrastructure on four small outposts in the Spratly Islands in early 2016. Facilities on Johnson, Gaven, Hughes, and Cuarteron Reefs include administrative buildings, weapons stations, and sensor emplacements. By early 2018, China had completed more extensive military infrastructure on three larger outposts in the Spratly Islands at Fiery Cross, Subi, and Mischief Reefs. These installations now include aviation facilities, port facilities, fixed-weapons positions, barracks, administration buildings, and communications facilities.

No substantial land has been reclaimed at any of the outposts since China completed its artificial island creation in the Spratly Islands in late 2015, after adding over 3,200 acres of land to the seven features it occupies in the Spratlys. China has stated these projects are mainly to improve marine research, safety of navigation, and the living and working conditions of personnel stationed on the outposts. However, the outposts provide airfields, berthing areas, and resupply facilities that will allow China to maintain a more flexible and persistent military and paramilitary presence in the area. This improves China's ability to detect and challenge activities by rival claimants or third parties, widen the range of capabilities available to China, and reduce the time required to deploy them.

Source: Office of the Secretary of Defense, *Military and Security Developments Involving the Republic of China, Annual Report to Congress*, May 2, 2019, Department of Defense. China Military Power 2018, p. 75.

China's Southern Theater-2019

Source: Office of the Secretary of Defense, *Military and Security Developments Involving the Republic of China, Annual Report to Congress*, May 2, 2019, Department of Defense. China Military Power 2018, p.76.

Key Chinese Deployments and Activity in the Paracels and Spratlys: As of Early 2018

- **Has deployed YJ-12B anti-ship cruise missiles and HQ-9B surface-to-air missile systems on each of the reefs, and built missile shelters.**
- **J-10 and J-11 fighter jets to Woody Island. China has built identical hangars for combat aircraft at Woody and on each of the Big Three, it is likely that J-10s or J-11s will soon deploy.**
- **Y-8 and Xian Y-7 military transport aircraft, and Y-8 maritime patrol or signals intelligence. Some at Subi Reef. Philippines, which has about 100 civilians and a small military garrison on Thitu Island just 12 nautical miles away.**
- **Military jamming equipment mounted on three trucks.**
- **Several varieties of the PLAN Type 053 frigate were seen at the Big Three, including what appear to be Type 053H1, Type 053H1G, and Type 053H3 frigates, plus Type 056 Jiangdao-class corvettes and Type 051B Luhai-class destroyer.**
- **Several different Type 072 landing ships, as well as a Type 073A landing ship, have been seen at the Big Three. The larger Type 072 landing ships are capable of transporting and landing tanks, heavy vehicles, and air-cushioned hovercraft in amphibious operations. The medium-sized Type 073A carries smaller tanks or troops for similar operations.**
- **Two AGI signals intelligence gathering ships, a Hai Yang and a Type 815G, and Type 639 oceanographic surveillance ship.**
- **Harbin Z-8 transport helicopters and a Harbin BZK-005 drone deployed to Woody Island. The BZK-005 is a high altitude, long endurance surveillance drone.**
- **China Coast Guard ships seen at the outposts include several former PLAN Jianghu-class 053H1 frigates, redubbed Jianghu-1 WFF ships.**

Source: CSIS AMTI Project, *An Accounting of Chinese Deployments to the Spratly Islands,* May 9, 2018https://amti.csis.org/chinese-power-projection/ and https://mail.google.com/mail/u/0/#inbox/16347781d0432c32.

China's Original Nine Dashed Line Claims in the South China Sea

EEZs Overlapping the Zone Enclosed by the Nine Dash Line

The map of the nine-dash line, also called the U-shaped line or the cow tongue,… predates the establishment of the People's Republic of China (PRC) in 1949. The map has been maintained by the PRC government, and maps published in Taiwan also show the nine line segments…

In a document submitted to the United Nations on May 7, 2009…China stated the following:

"China has indisputable sovereignty over the islands in the South China Sea and the adjacent waters, and enjoys sovereign rights and jurisdiction over the relevant waters as well as the seabed and subsoil thereof (see attached map [of the nine-dash line]). The above position is consistently held by the Chinese Government, and is widely known by the international community."

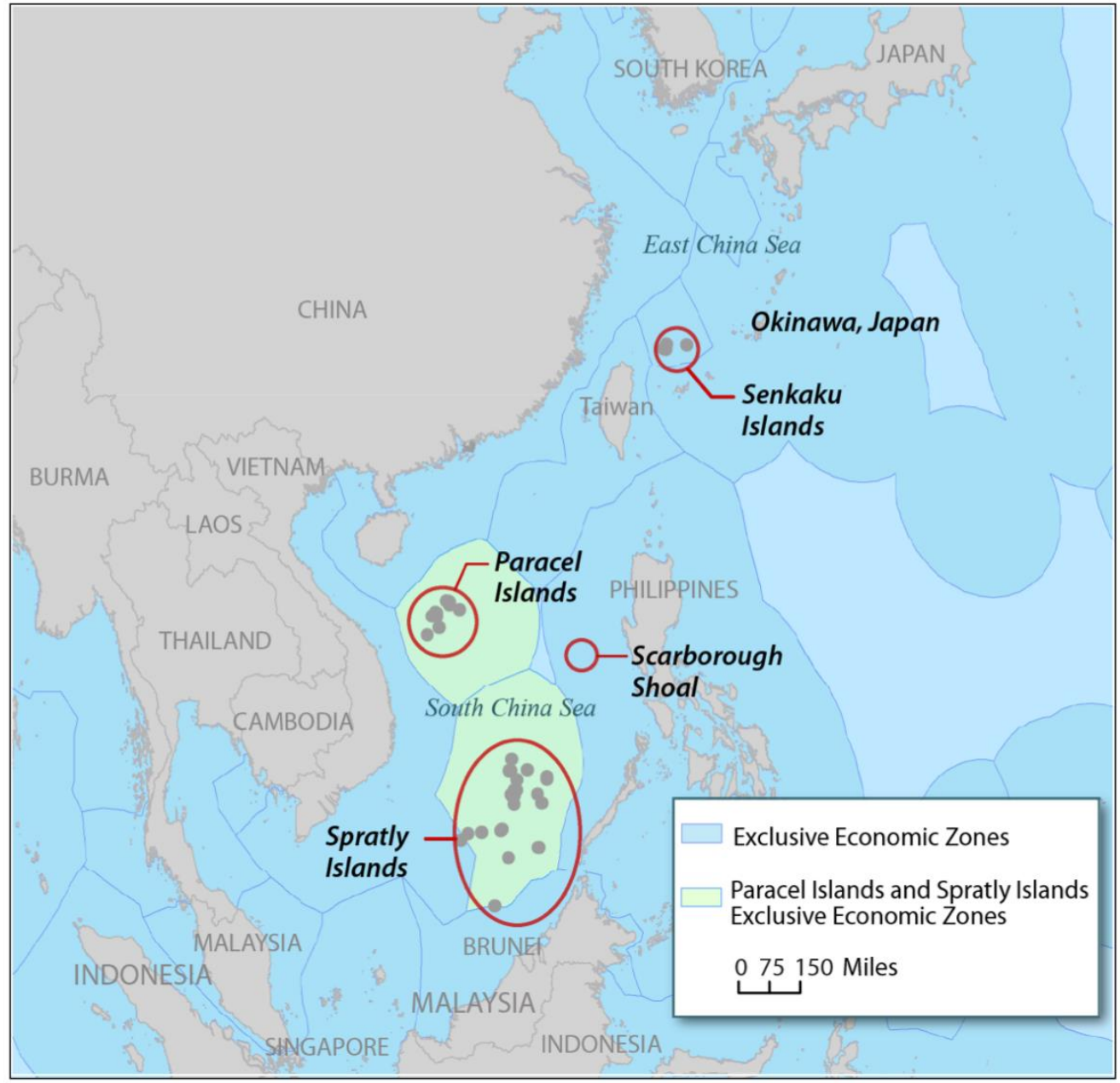
…The map does not always have exactly nine dashes. Early versions of the map had as many as 11 dashes, and a map of China published by the Chinese government in June 2014 includes 10 dashes.166 The exact positions of the dashes have also varied a bit over time.

Source: Ronald O'Rourke, U.S.-China Strategic Competition in South and East China Seas: Background and Issues for Congress, CRS R-42784, Updated August 23, 2019, p. 64

Source: Source: Eurasia Review, September 10, 2012.

Notes: (1) The red line shows the area that would be enclosed by connecting the line segments in the map of the nine-dash line. Although the label on this map states that the waters inside the red line are "China's claimed territorial waters," China has maintained ambiguity over whether it is claiming full sovereignty over the entire area enclosed by the nine line segments. (2) The EEZs shown on the map do not represent the totality of maritime territorial claims by countries in the region. Vietnam, to cite one example, claims all of the Spratly Islands, even though most or all of the islands are outside the EEZ that Vietnam derives from its mainland coast.

EEZs Overlapping the Key Islands in Dispute and Related Chinese EEZ Claims

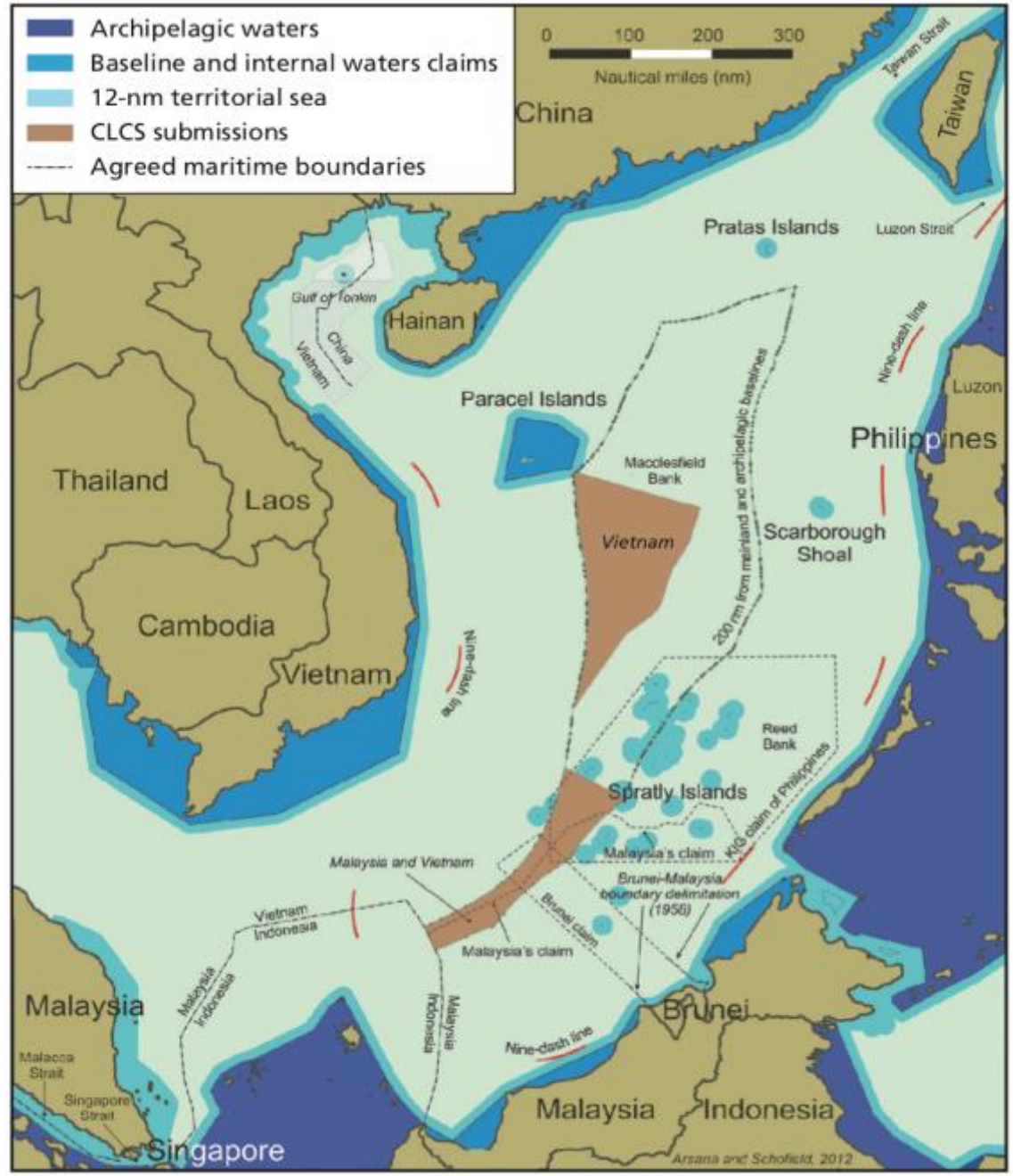


Source: Map prepared by CRS using basemaps provided by Esri. EEZs are from the Flanders Marine Institute (VLIZ) (2011). Maritime Boundaries Geodatabase, version 6. Available at http://www.vliz.be/vmdcdata/marbo

Note: Disputed islands have been enlarged to make them more visible.

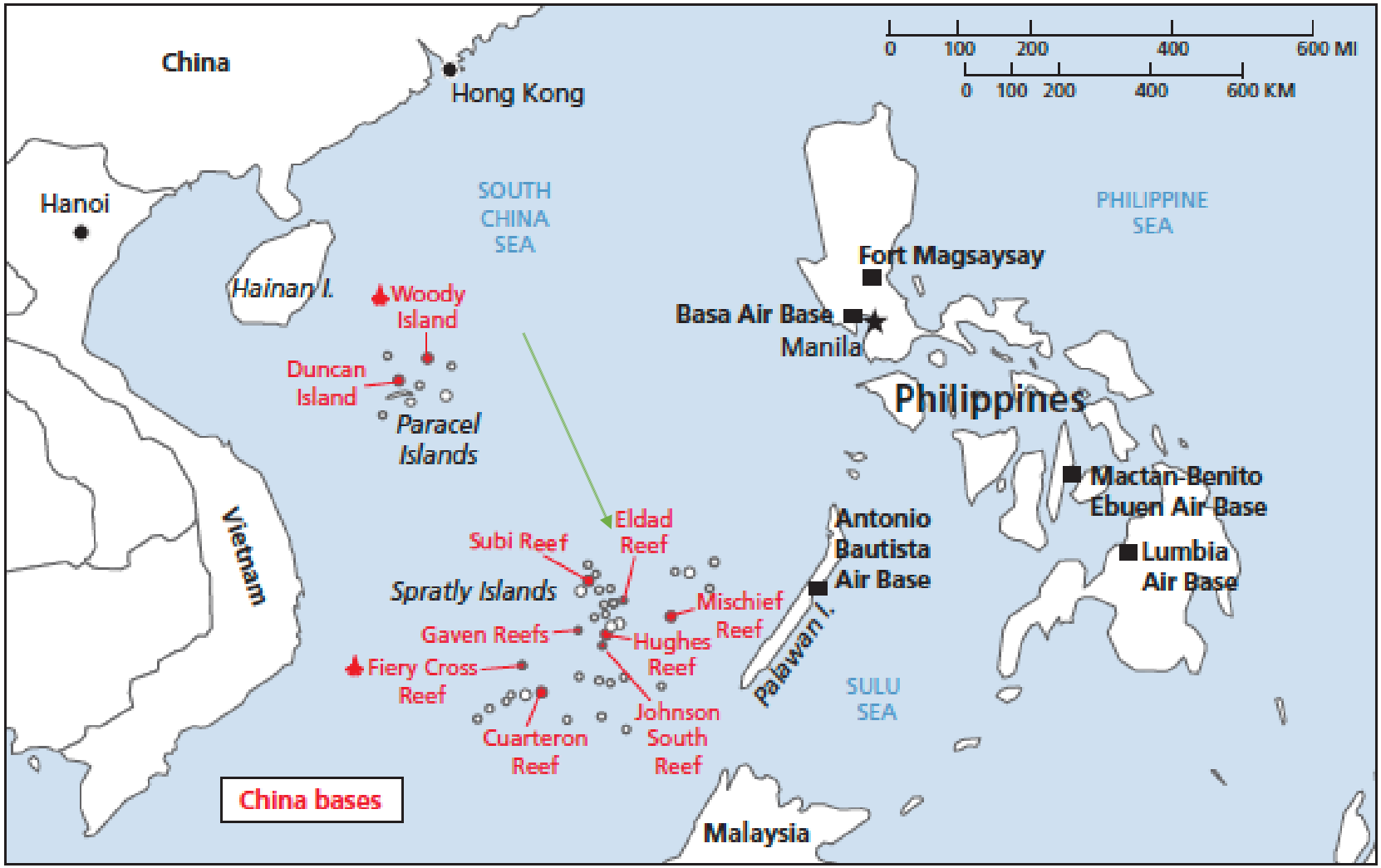
Source: Ronald O'Rourke, U.S.-China Strategic Competition in South and East China Seas: Background and Issues for Congress, CRS R-42784, Updated August 23, 2019, p. 74.

Areas of Gray Zone Competition Between China and Southeast Asian States in 2019



Source: Lori Fisler Damrosch and Bernard H. Oxman, "Agora: The South China Sea," *American Journal of International Law*, Vol. 107, No. 1, January 2013, p. 96; and Lyle L. Morris, Michaekl J. Mazarr, Jeffery W. Hornug, Stephanie Pezaed, Anika Binnendijk, Marta Kepe, Gaining *Competitive Advantage in the Gray Zone, Response Options for Coercive Aggression Below the Threshold of Major War*, Rand, June 2019, p. 29.

Chinese Occupied Islands vs. Philippine Bases: 2017



Source: RAND, *US Military Forces and Capabilities for a Dangerous World*, RR1782, 2017, p. 23.

Chinese Ship Deployments in the Paracels and Spratlys at "Big Three" outposts at Fiery Cross, Mischief, and Subi Reefs in 2018

Satellite images show that PLAN destroyers, frigates, and other combat ships and CCG patrol vessels regularly visit the artificial islands, along with many auxiliary and logistics vessels. Admittedly, relying on satellite imagery, which captures only those ships that happen to be in port (as opposed to out on patrol) at a specific moment in time, provides a limited picture of naval and coast guard deployments. But the ubiquity of PLAN and CCG ships in images of Fiery Cross, Mischief, and Subi Reefs since the start of 2017 suggests how robust the PLAN and CCG presence at the island bases has become.

Source: CSIS AMTI Project, *An Accounting of Chinese Deployments to the Spratly Islands,* May 9, 2018, https://amti.csis.org/chinese-power-projection/ and https://mail.google.com/mail/u/0/#inbox/16347781d0432c32.

U.S Freedom of Navigation (FON) Operations in the South and East China Seas: 5/2017-3/2019

Details shown are based on press reports

Date	Location in SCS	U.S. Navy Ship	Notes
May 25, 2017	Mischief Reef in Spratly Islands	*Dewey* (DDG-105)	
July 2, 2017	Triton Island in Paracel Islands	*Stethem* (DDG-63)	
August 10, 2017	Mischief Reef in Spratly Islands	*John S. McCain* (DDG-56)	
October 10, 2017	Paracel Islands	*Chaffee* (DDG-90)	
January 17, 2018	Mischeif Reef in Spratly Islands	*Hopper* (DDG-70)	
March 23, 2018	Mischeif Reef in Spratly Islands	*Mustin* (DDG-89)	
May 27, 2018	Tree, Lincoln, Triton, and Woody islands in Paracel Islands	*Antietam* (CG-54) and *Higgins* (DDG-76)	The U.S. Navy reportedly considers that the Chinese warships sent to warn off the U.S. Navy ships maneuvered in a "safe but unprofessional" manner.
September 30, 2018	Gaven and Johnson Reefs in Spratly Islands	*Decatur* (DDG-73)	This operation led to a tense encounter between the *Decatur* and a Chinese destroyer.
November 26, 2018	Paracel Islands	*Chancellorsville* (CG-62)	
January 7, 2019	Tree, Lincoln, and Woody islands in Paracel Islands	*McCampbell* (DDG-85)	
February 11, 2019	Mischief Reef in Spratly Islands	*Spruance* (DDG-111) and *Preble* (DDG-88)	
May 6, 2019	Gaven and Johnson Reefs in Spratly Islands	*Preble* (DDG-88) and *Chung Hoon* (DDG-93)	
May 19, 2019	Scarborough Shoal in Spratly Islands	*Preble* (DDG-88)	

Source: Table prepared by CRS based on press reports about each operation.

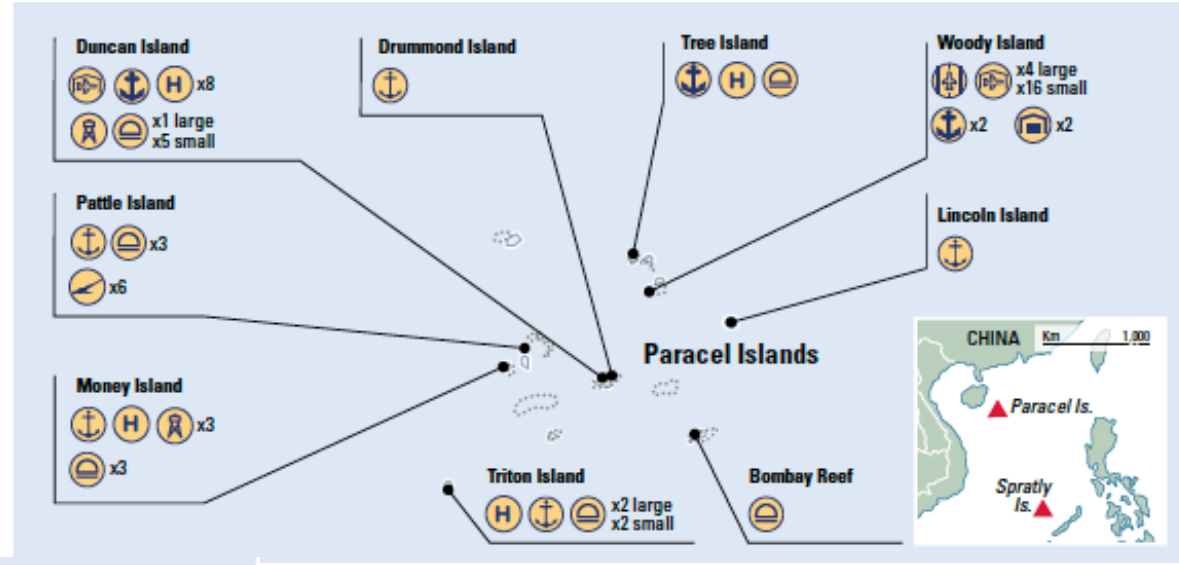
Notes: Reported dates may vary by one day due to the difference in time zones between the United States and the SCS.

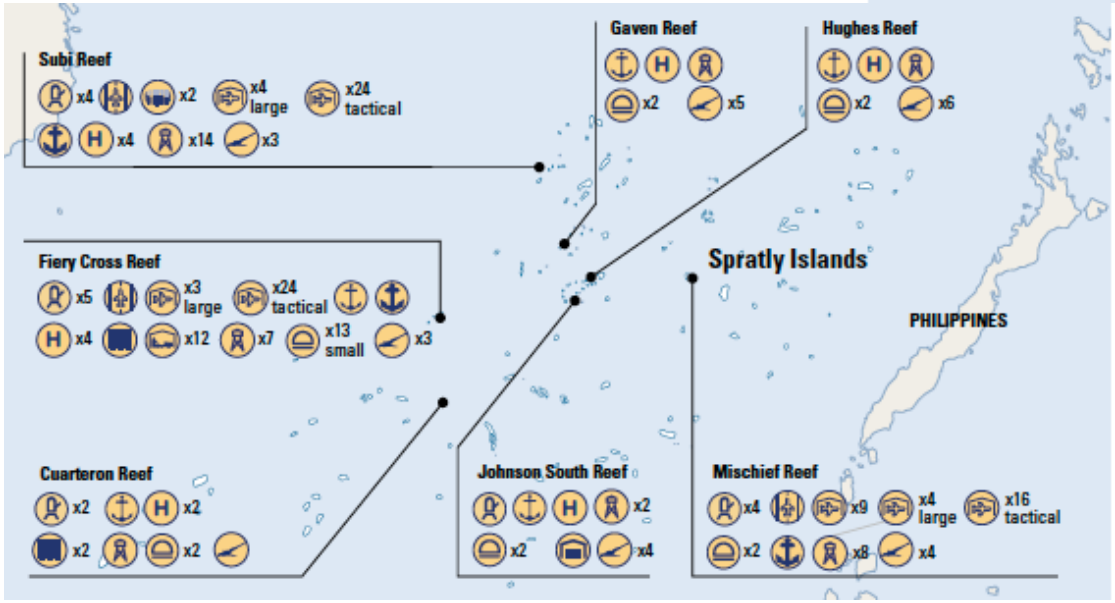
Source: Ronald O'Rourke, U.S.-China Strategic Competition in South and East China Seas: Background and Issues for Congress, CRS R-42784 ,Updated August 23, 2019, p. 19

IISS Estimate of Chinese Bases in South China Sea: 2018

China's land reclamation in the Spratlys and Paracels seems to have stopped in recent years, and the focus has instead turned to building up permanent infrastructure. All the Chinese-controlled features in the Spratlys have what appear to be permanent weapons emplacements but this is not the case in the Paracels, though weapons have appeared there occasionally. This might be due to the proximity of the Paracels to Hainan, making them less vulnerable. In the Spratlys, a variety of radars and radomes now seem to be part of the permanent infrastructure, indicating the extent of Chinese command-and-control and ISR capabilities in the South China Sea. The ports in the Spratly Islands, including deep-water berths, could in the future support a wide range of naval vessels. Lastly, 3 km runways, aircraft hangars and weapons-storage facilities on Woody Island in the Paracels and Subi, Fiery Cross and Mischief reefs in the Spratlys will enable greater reach for Chinese airpower.

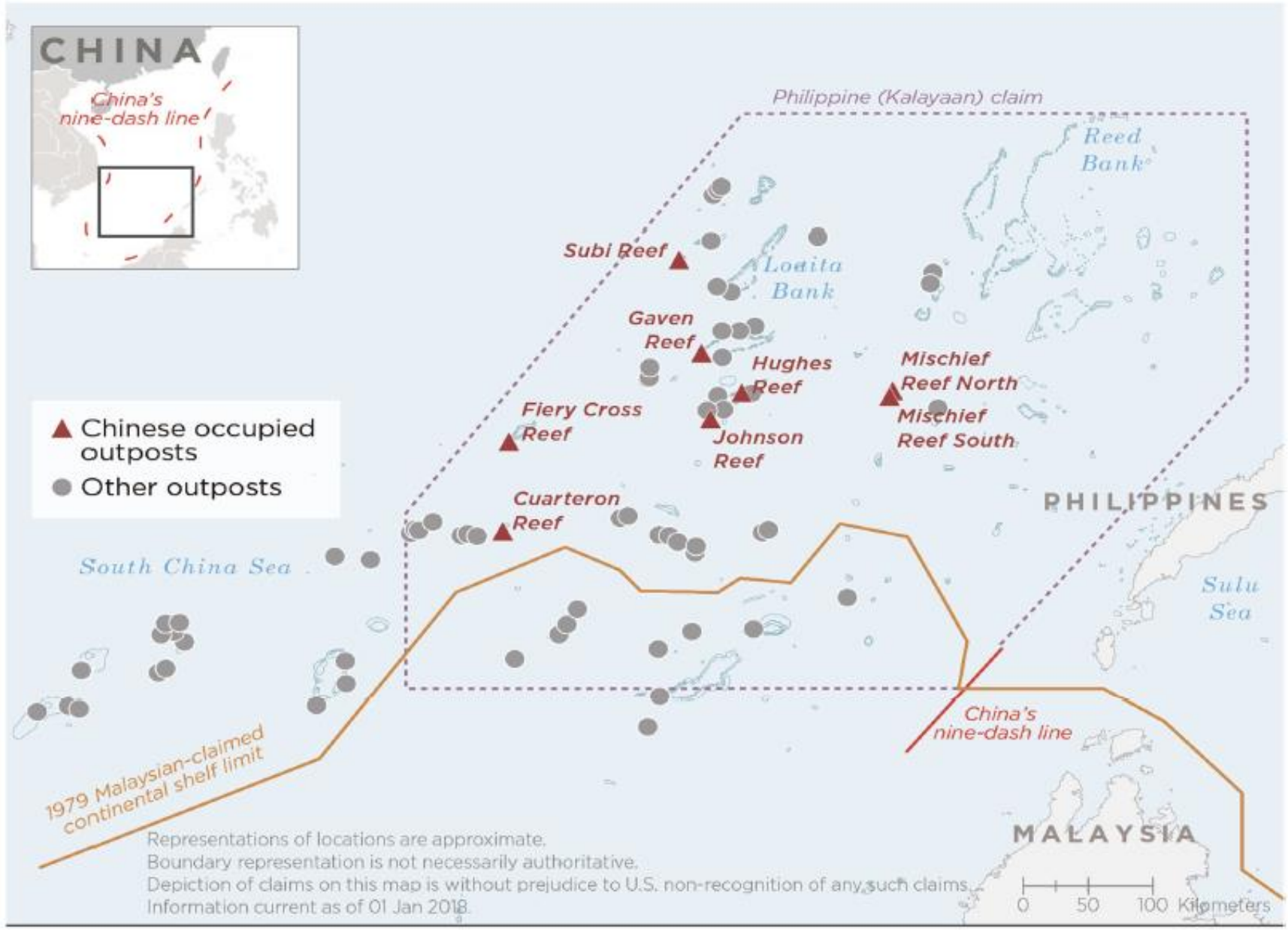
Airstrip
Close-in weapons system
Elephant-cage radar
Hangars
Harbour
Large harbour
Helipad
High-frequency array radar
HQ-9 hangar/ emplacement
Observation tower
Radome
Storage
Possible weapons emplacement





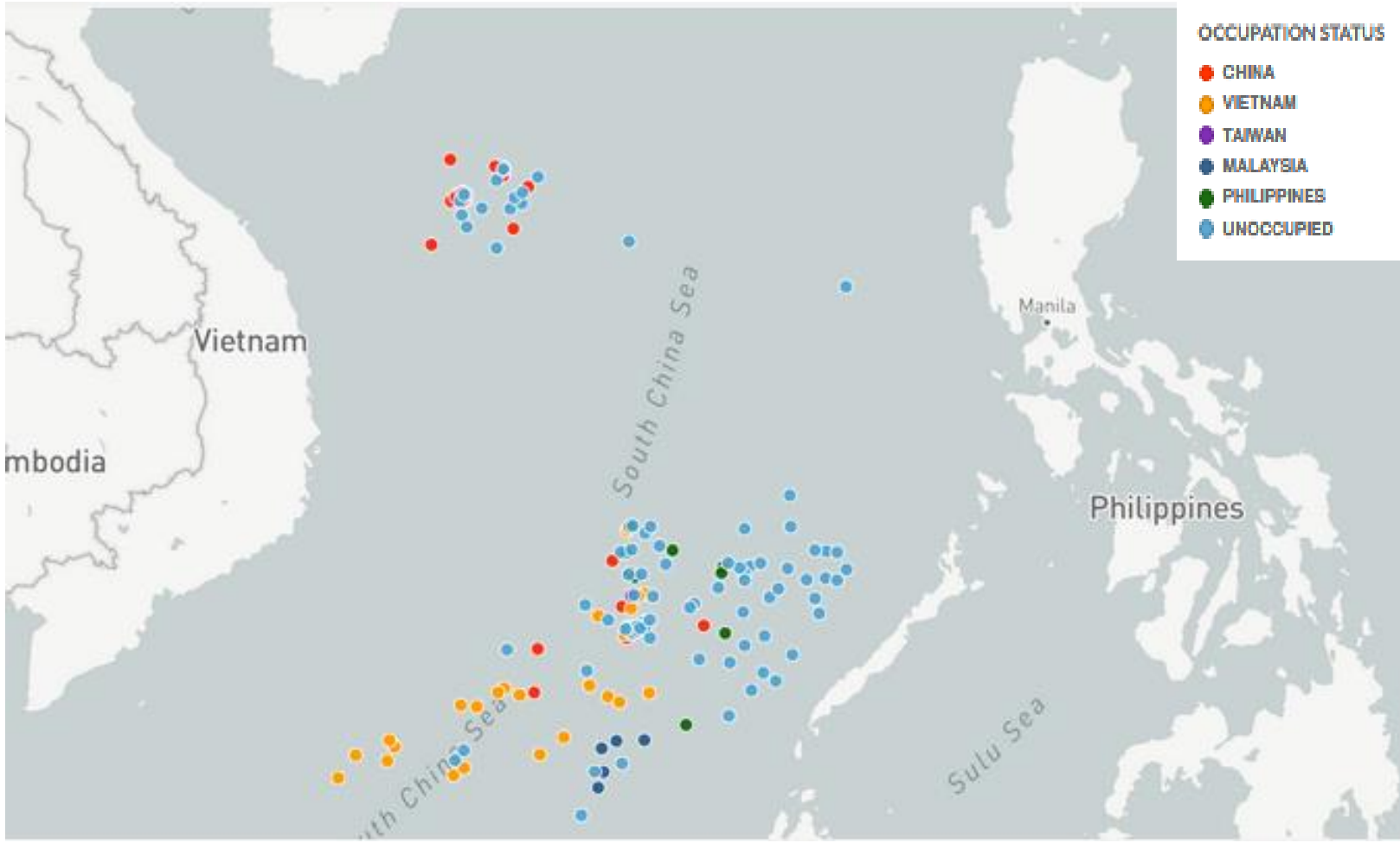
Source: IISS, *Military Balance, 2019*, p. 234.

Outputs in the Spratly Islands in 2018



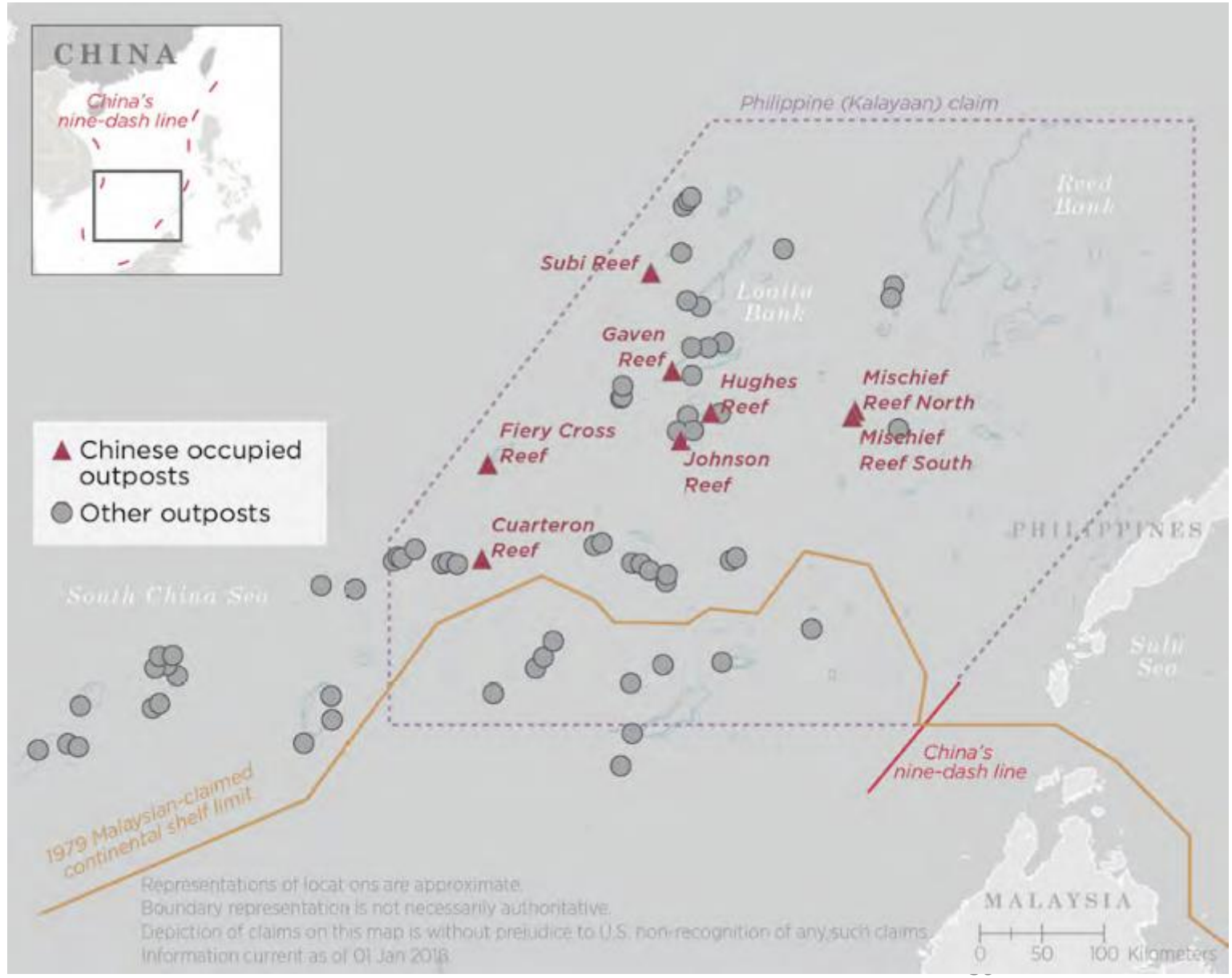
Office of the Secretary of Defense, Military and Security Developments Involving the Republic of China, Annual Report to Congress, May 16, 2018, Department of Defense. China Military Power 2018, p.15.

Who Occupied What in the South China Sea in 2019



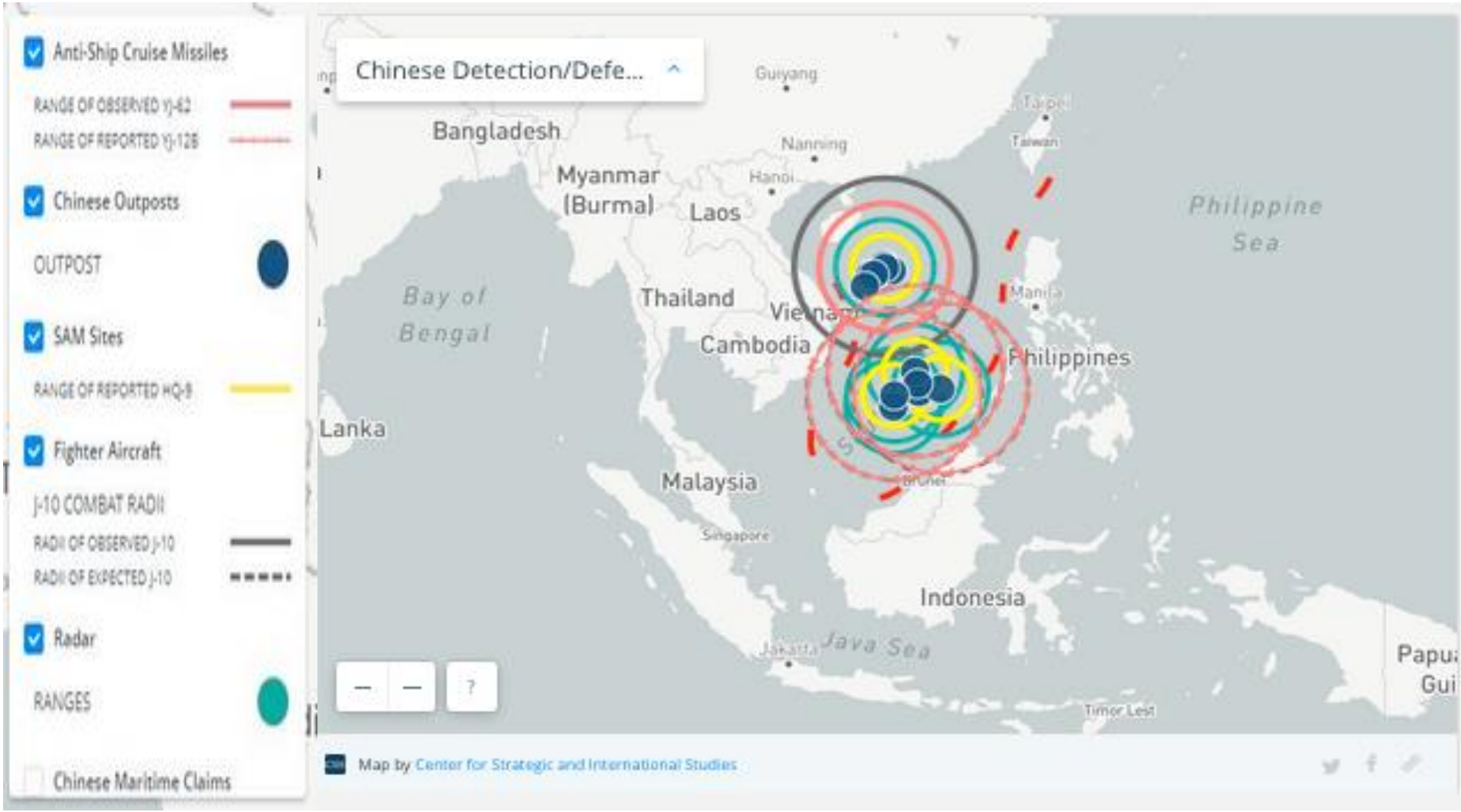
Source: CSIS AMTI Project, https://amti.csis.org/chinese-power-projection/

DIA on Chinese Outposts in the Spratly Islands- 2019



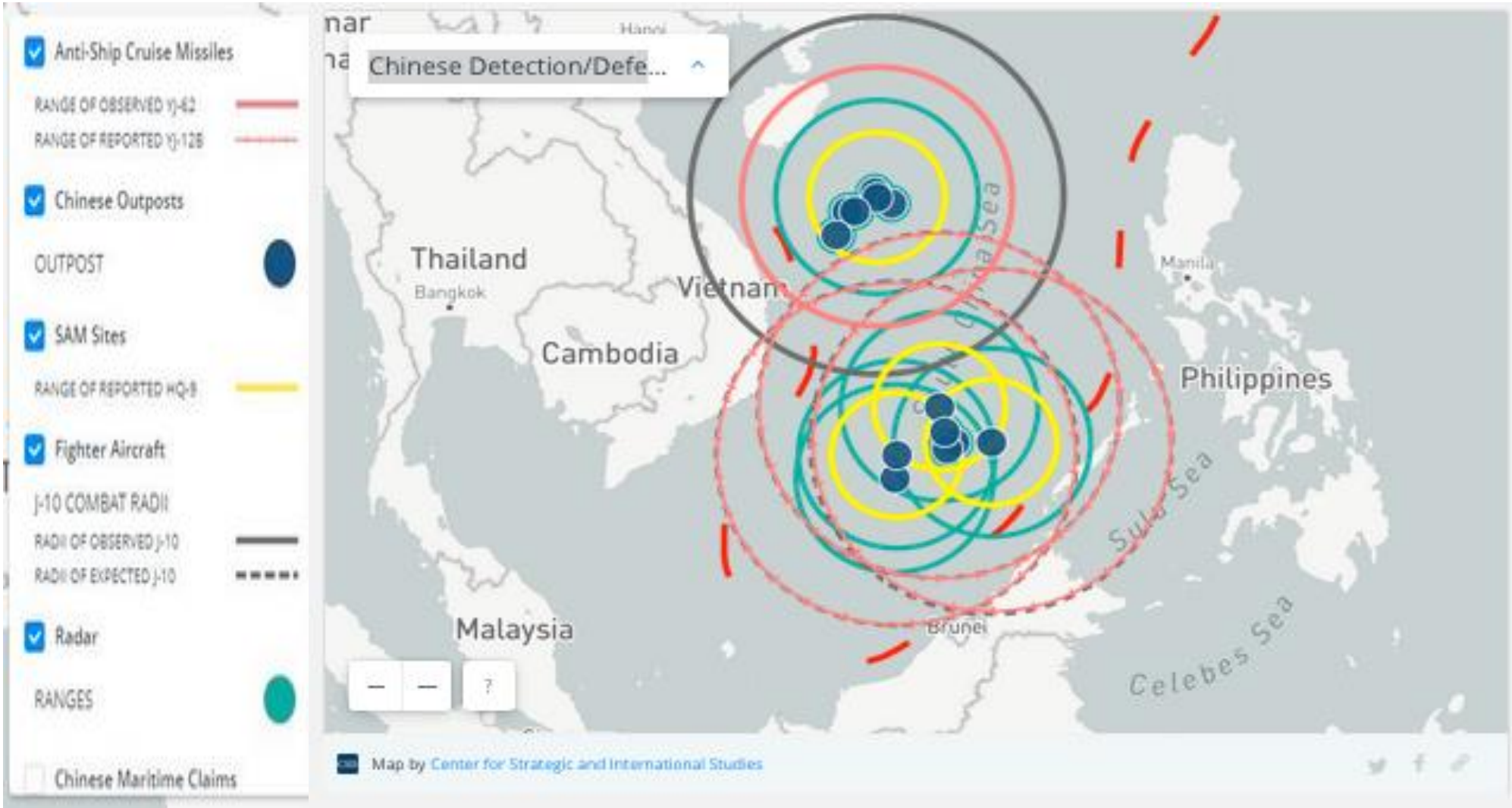
DIA, *China Military Power: Modernizing a Force to Fight and Win, 2019*, DIA-02-1706-085, 2019, p. 8.

Impact of Current and Expected Chinese Deployments of Air and Missile Platforms in the Paracels and Spratlys: Early 2018 - I



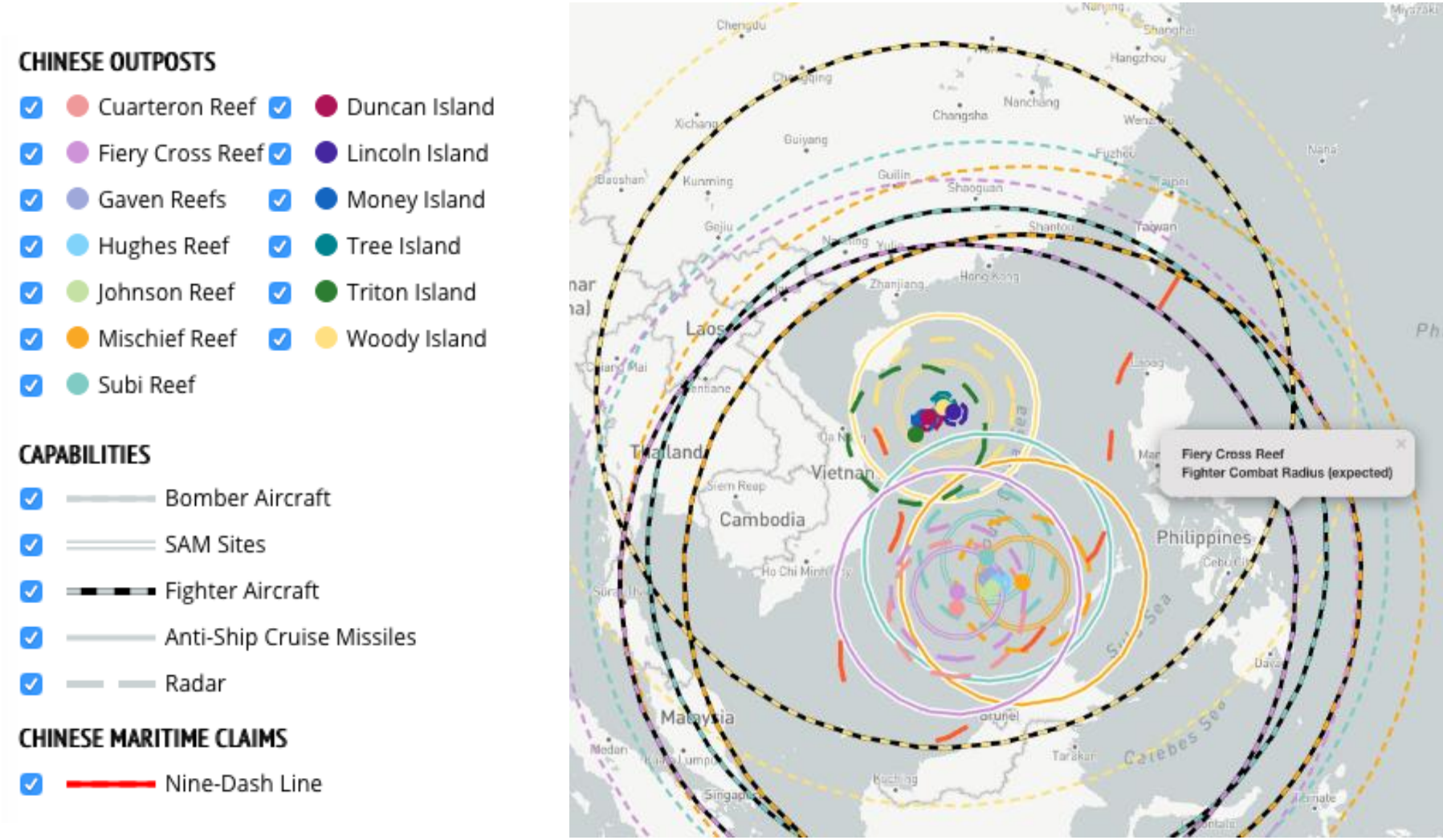
Source: CSIS AMTI Project, *An Accounting of Chinese Deployments to the Spratly Islands,* May 9, 2018, https://amti.csis.org/chinese-power-projection/ and https://mail.google.com/mail/u/0/#inbox/16347781d0432c32

Impact of Current and Expected Chinese Deployments of Air and Missile Platforms in the Paracels and Spratlys: Early 2018 - II



Source: CSIS AMTI Project, *An Accounting of Chinese Deployments to the Spratly Islands,* May 9, 2018, https://amti.csis.org/chinese-power-projection/ and https://mail.google.com/mail/u/0/#inbox/16347781d0432c32

Chinese Fighter and Bomber Ranges from Power Projection Facilities in the South China Sea in 2019

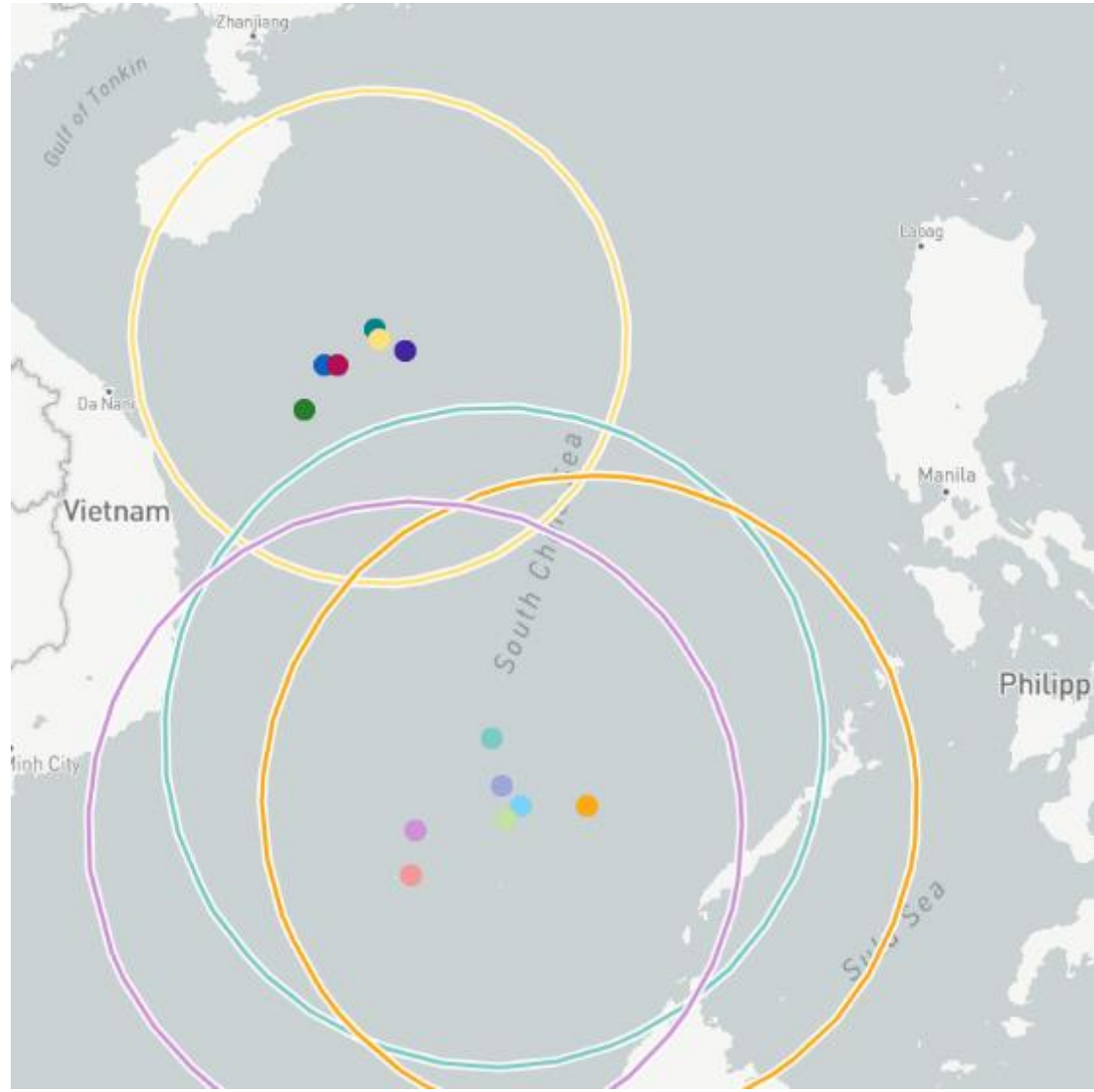


Adapted from CSIS Asia Maritime Transparency Initiative , interactive maps, https://amti.csis.org/chinese-power-projection//, 1.7.19

Chinese Anti-Ship Cruise Missile Ranges from Power Projection Facilities in the South China Sea in 2019

CHINESE OUTPOSTS

- Cuarteron Reef
- Duncan Island
- Fiery Cross Reef
- Lincoln Island
- Gaven Reefs
- Money Island
- Hughes Reef
- Tree Island
- Johnson Reef
- Triton Island
- Mischief Reef
- Woody Island
- Subi Reef



Adapted from CSIS Asia Maritime Transparency Initiative , interactive maps, https://amti.csis.org/chinese-power-projection/, 1.7.19.

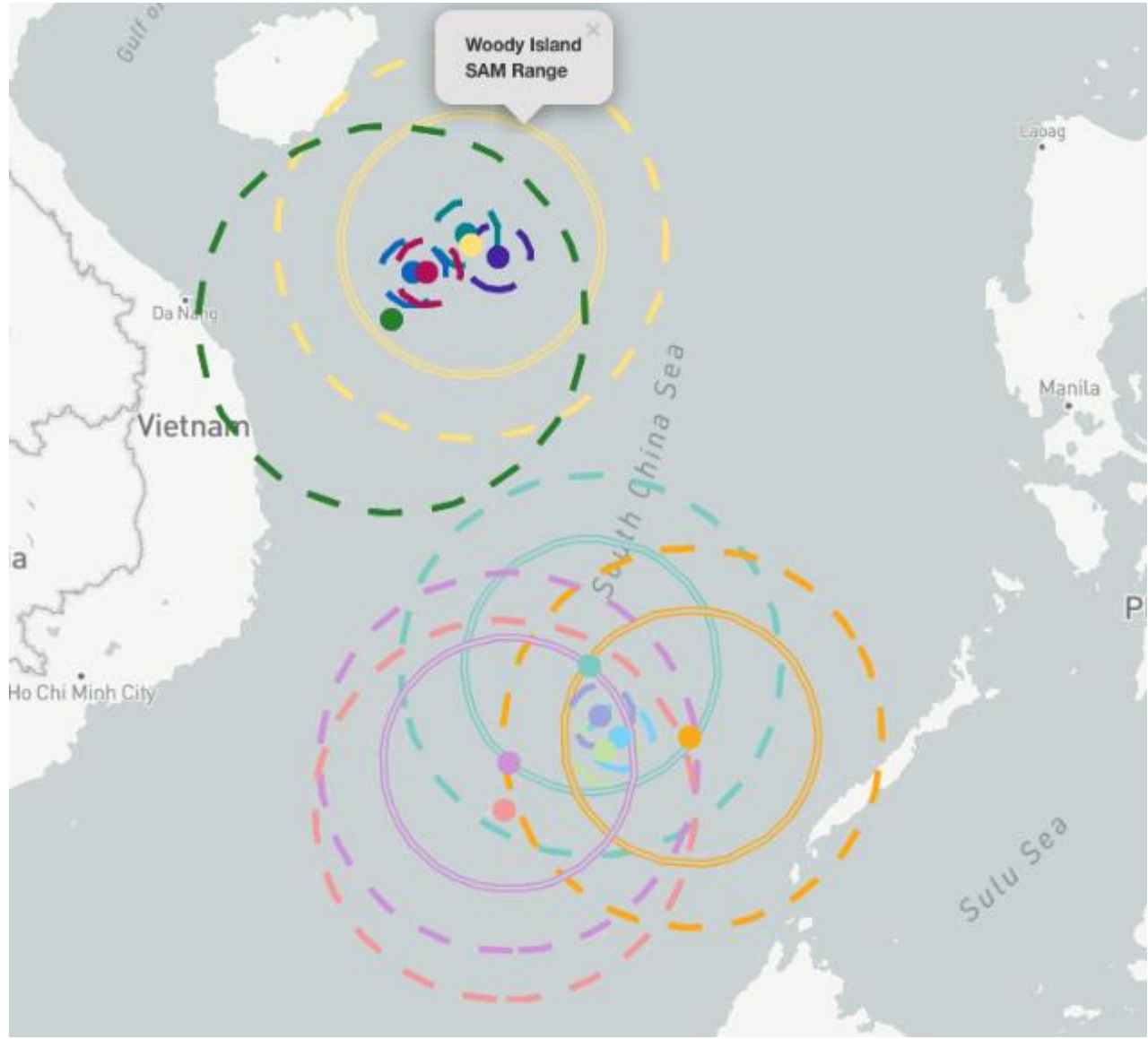
Chinese Radar and Surface-to-Air Missile Ranges from Facilities in the South China Sea

CHINESE OUTPOSTS

- [x] Cuarteron Reef
- [x] Duncan Island
- [x] Fiery Cross Reef
- [x] Lincoln Island
- [x] Gaven Reefs
- [x] Money Island
- [x] Hughes Reef
- [x] Tree Island
- [x] Johnson Reef
- [x] Triton Island
- [x] Mischief Reef
- [x] Woody Island
- [x] Subi Reef

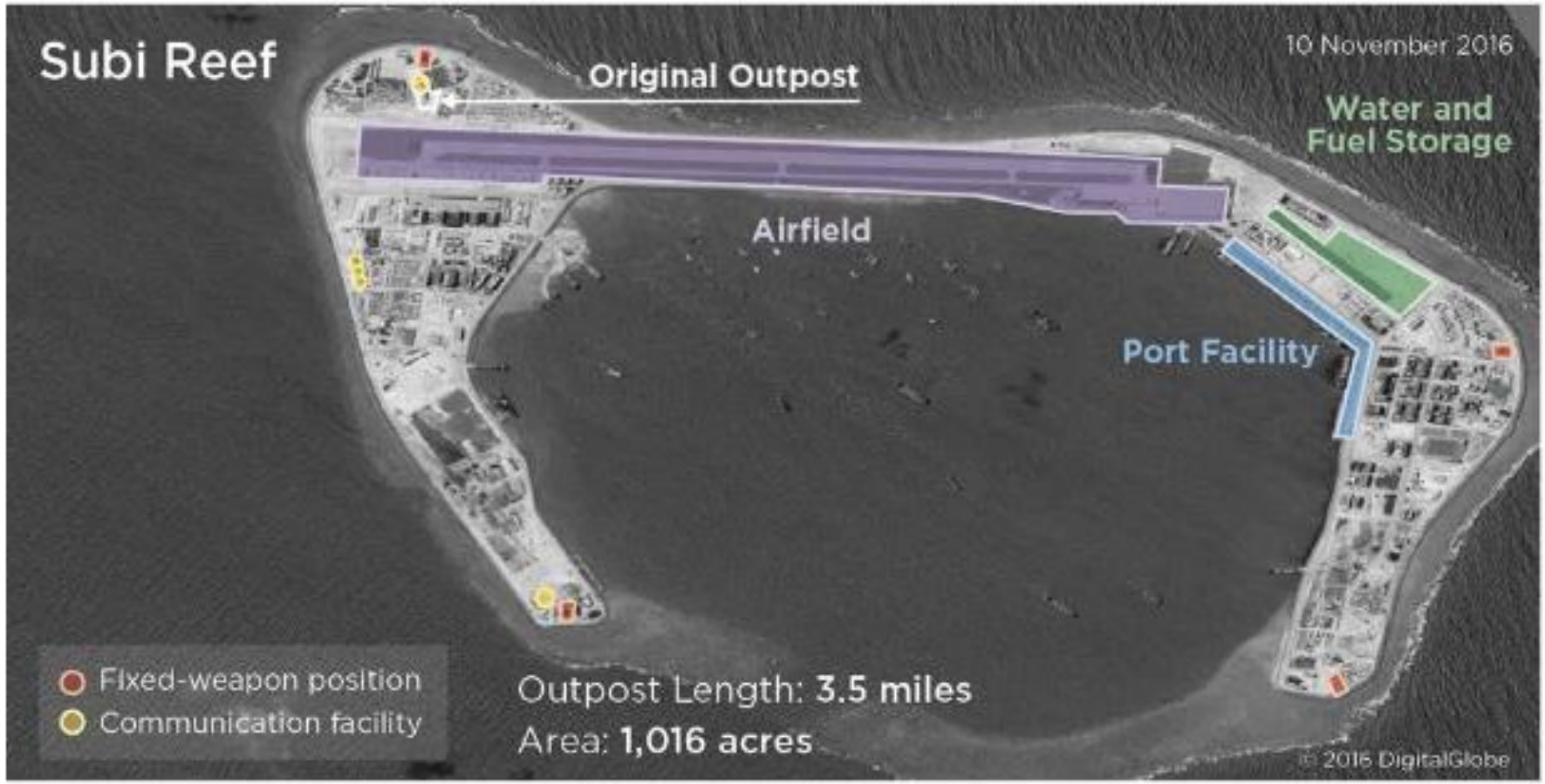
CAPABILITIES

- [ ] Bomber Aircraft
- [x] SAM Sites
- [ ] Fighter Aircraft
- [ ] Anti-Ship Cruise Missiles
- [x] Radar



Adapted from CSIS Asia Maritime Transparency Initiative , interactive maps, https://amti.csis.org/chinese-power-projection/, 1.7.19.

China's Outposts on the Subi Reef



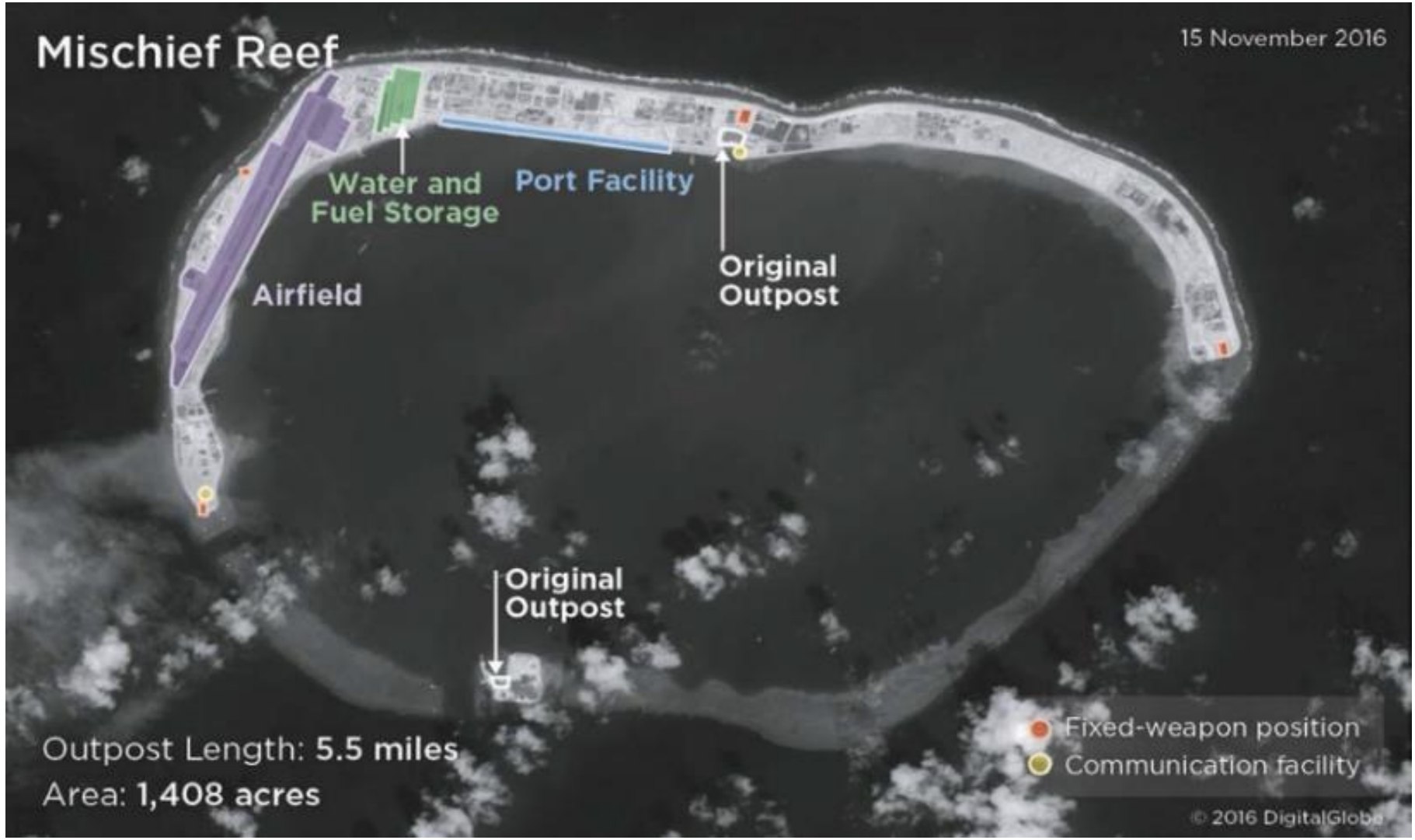
Office of the Secretary of Defense, *ANNUAL REPORT TO CONGRESS Military and Security Developments Involving the People's Republic of China 2017*, May 15, 2017, https://www.defense.gov/Portals/1/Documents/pubs/2017_China_Military_Power_Report.PDF, p. 7

Making Woody Island a Base

NOTE: Woody Island is a substantial base on an artificial island containing an airfield with a length of more than 3,000 meters. The close-up image shows the deployment of a long-range SAM battery.

Source: RAND, *US Military Forces and Capabilities for a Dangerous World*, RR1782, 2017, p. 23

Building Island Bases: Mischief Reef



Source: Department of Defense, Chinese Military Power, 2017, p. 13.

Possible Military facilities on New “Islands”

Source: BBC, http://www.bbc.com/news/world-asia-china-39165080.

The Critical Role of Chinese Trade in the South China Sea

The Critical Role of Trade Through the South China Sea

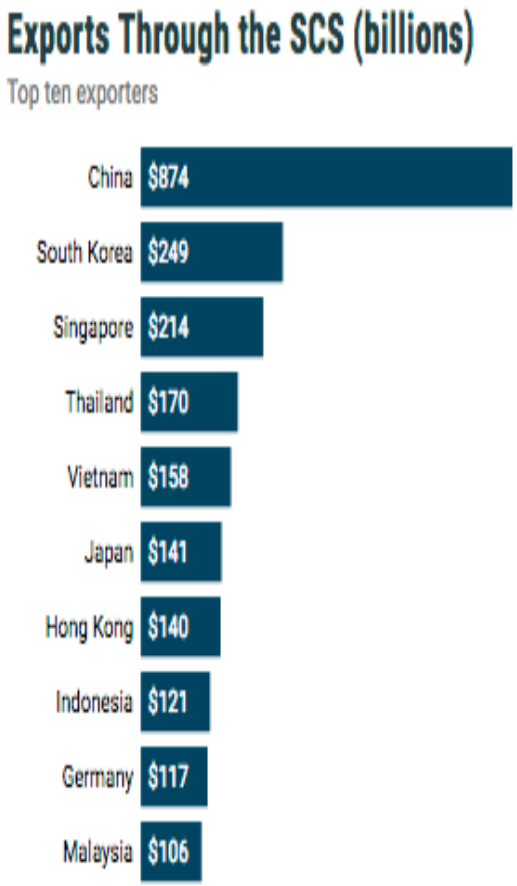
An analysis by the China Power group in the CSIS illustrates the importance of the South China Sea to China in trade terms. It states that,

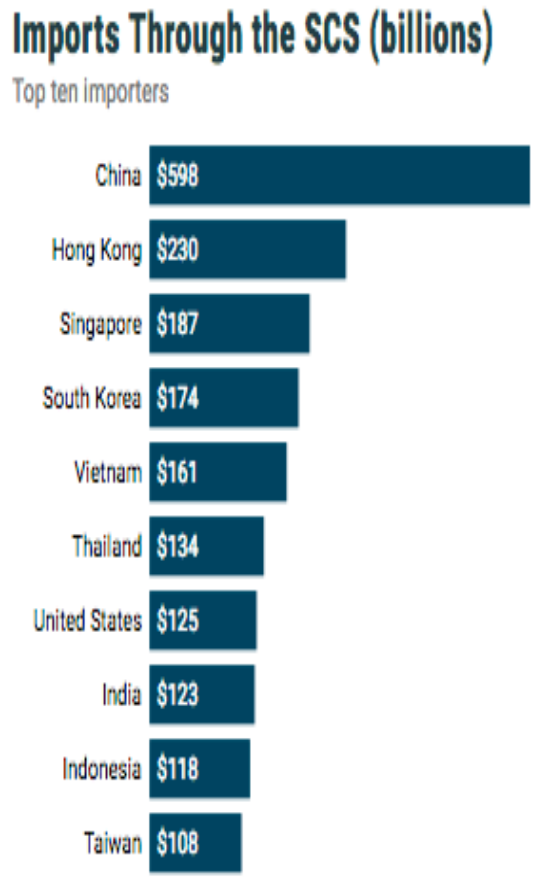
> The United Nations Conference on Trade and Development (UNCTAD) estimates that roughly 80 percent of global trade by volume and 70 percent by value is transported by sea. Of that volume, 60 percent of maritime trade passes through Asia, with the South China Sea carrying an estimated one-third of global shipping.[1] Its waters are particularly critical for China, Taiwan, Japan, and South Korea, all of which rely on the Strait of Malacca, which connects the South China Sea and, by extension, the Pacific Ocean with the Indian Ocean. As the second-largest economy in the world with over 60 percent of its trade in value traveling by sea, China's economic security is closely tied to the South China Sea.
>
> As a vital artery of trade for many of the world's largest economies, the South China Sea has garnered significant attention. The high concentration of commercial goods flowing through the relatively narrow Strait of Malacca has raised concerns about its vulnerability as a strategic chokepoint. Writings on the South China Sea frequently claim that $5.3 trillion worth of goods transits through the South China Sea annually, with $1.2 trillion of that total accounting for trade with the U.S. This $5.3 trillion figure has been used regularly since late 2010, despite significant changes in world trade over the last five-plus years.
>
> In pursuit of an accurate estimation, China Power constructed a new dataset for South China Sea trade using common shipping routes, automatic identification system (AIS) data, and bilateral trade flows. This approach relied on calculating a summation of all bilateral trade flowing through the South China Sea. China Power found that an estimated $3.4 trillion in trade passed through the South China Sea in 2016. These estimates represent a sizeable proportion of international trade, constituting between 21 percent of global trade in 2016, but is nonetheless 36 percent smaller than the original $5.3 trillion.
>
> For many of the world's largest economies, the South China Sea is an essential maritime crossroads for trade. Over 64 percent of China's maritime trade transited the waterway in 2016, while nearly 42 of Japan's maritime trade passed through the South China Sea in the same year. The United States is less reliant on South China Sea, with just over 14 percent of its maritime trade passing through the region.
>
> … The frequent citing of the $5.3 trillion figure in various publications implies an overwhelming concern among the media, scholars, and governments that a disruption of South China Sea trade would precipitate a global economic crisis. Concerns surrounding the $5.3 trillion figure are often tied to suspicions that China's growing regional influence may embolden Beijing to disrupt commercial shipping. While certain contingencies may prompt China's leaders to take coercive action, this possibility is less likely during peacetime.
>
> China's reliance on the South China Sea leaves it vulnerable to maritime trade disruptions. In 2003, then-President Hu Jintao drew attention to the potential threat posed by "certain major powers" aiming to control the Strait of Malacca, and highlighted the need for China to adopt new strategies to address this concern. Thereafter, the Chinese media drew significant attention to the potential risk outlined by Hu Jintao and Chinese scholars stressed the need to solve this "Malacca Dilemma" by exploring alternative shipping routes.[2]

The charts that follow summarize that analysis. It is important to note, however, that China's dependence on maritime time trade is also a key reason that China has developed one of the world's ;largest maritime fleets.

Source: "How much trade transits the South China Sea?," China Power Project, CSIS, https://chinapower.csis.org/much-trade-transits-south-china-sea/

Total Traffic Through the South China Sea: $3.37 Trillion in 2016





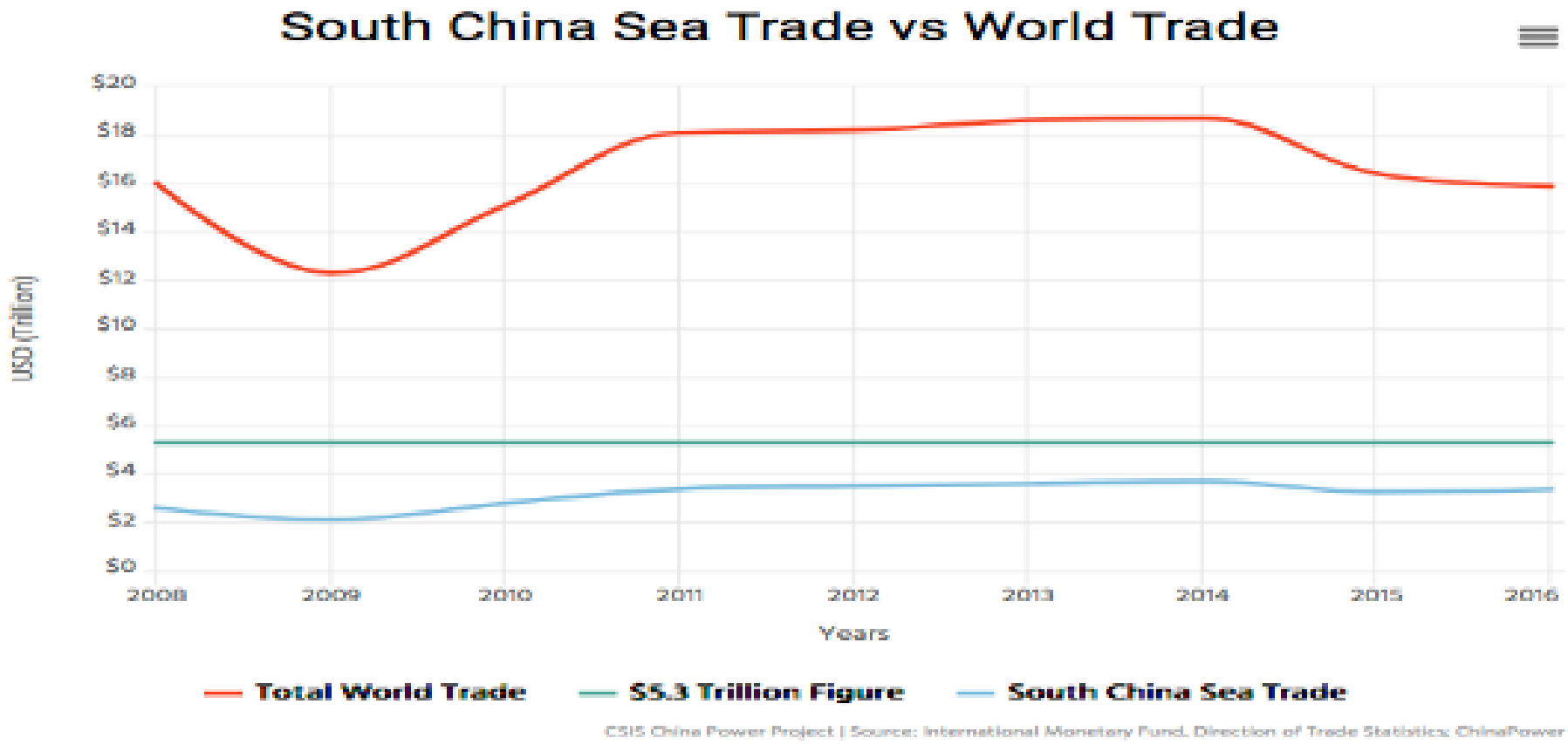
Country	% Share of World GDP	Trade Value through South China Sea (USD billions)	South China Sea Trade As % of All Trade in Goods
United States	24.5	208	5.72
China	14.8	1470	39.5
Japan	6.53	240	19.1
Germany	4.58	215	9.00
United Kingdom	3.46	124	11.8
France	3.26	83.5	7.77
India	2.99	189	30.6
Italy	2.45	70.5	8.14
Brazil	2.37	77.3	23.4
Canada	2.02	21.8	2.67

CSIS China Power Project | International Monetary Fund

For many of the world's largest economies, the South China Sea is an essential maritime crossroads for trade. Over 64 percent of China's maritime trade transited the waterway in 2016, while nearly 42 of Japan's maritime trade passed through the South China Sea in the same year. The United States is less reliant on the South China Sea, with just over 14 percent of its maritime trade passing through the region.

Source: ***CSIS China Power Project,*** ***https://chinapower.csis.org/much-trade-transits-south-china-sea/***.

Global Trade vs. Trade Through the South China Sea – 2008-2016:



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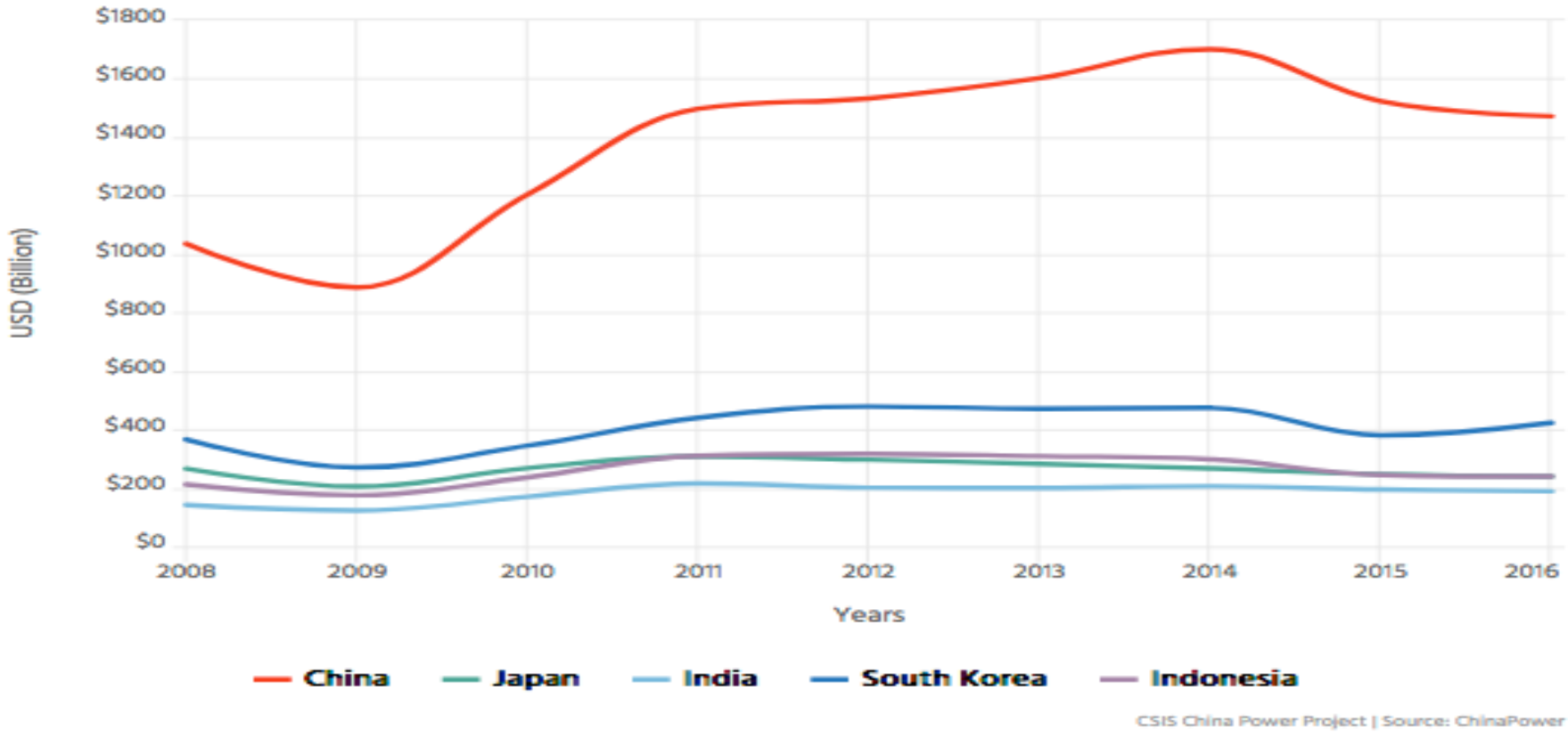
Source: ***CSIS China Power Project,*** *https://chinapower.csis.org/much-trade-transits-south-china-sea/*

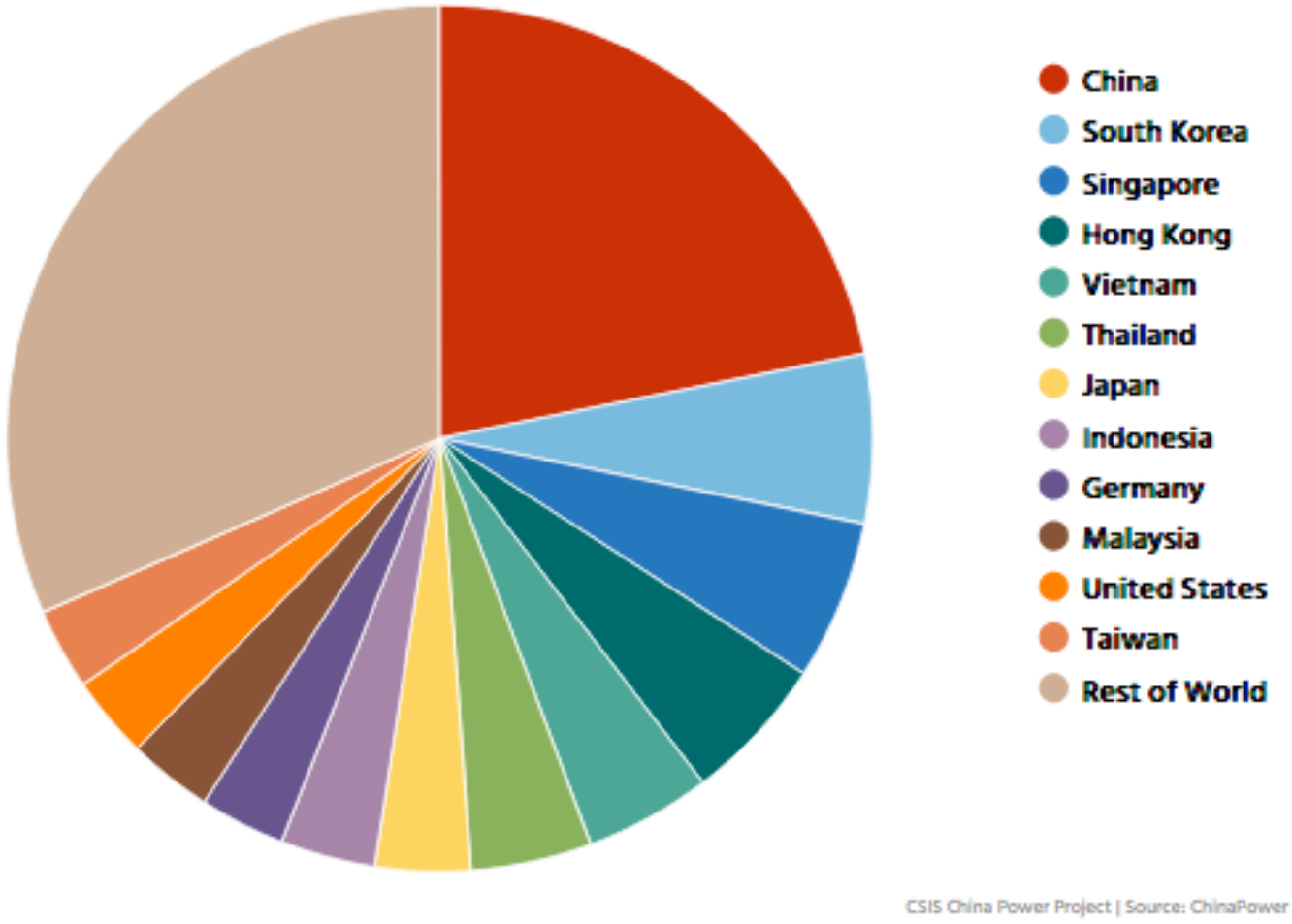
Trade of Key Countries Through the South China Sea – 2008-2016



Given the significance of the South China Sea for Chinese trade, Beijing may be more inclined to take steps to preserve the free flow of trade than it is to disrupt regional trade flows. Even under extreme hypothetical conditions where Chinese capabilities expanded to the point where it was capable of letting its own commerce pass while stopping that of other countries, such a move would be risky. Long-term interference with shipping traffic would increase insurance premiums on commercial vessels and force shippers to consider more expensive trade route alternatives. This is not to say that such a scenario is impossible. Dire circumstances may compel China to take disruptive action, but this would come at a considerable financial cost to China, greatly degrade China's standing among other countries, and could precipitate an assertive response by outside powers.

Source: ***CSIS China Power Project,*** *https://chinapower.csis.org/much-trade-transits-south-china-sea/*

Percent of South China Sea Trade: 2016



Source: ***CSIS China Power Project,*** *https://chinapower.csis.org/much-trade-transits-south-china-sea/*

Avoiding the Strait of Malacca Has Massive Costs

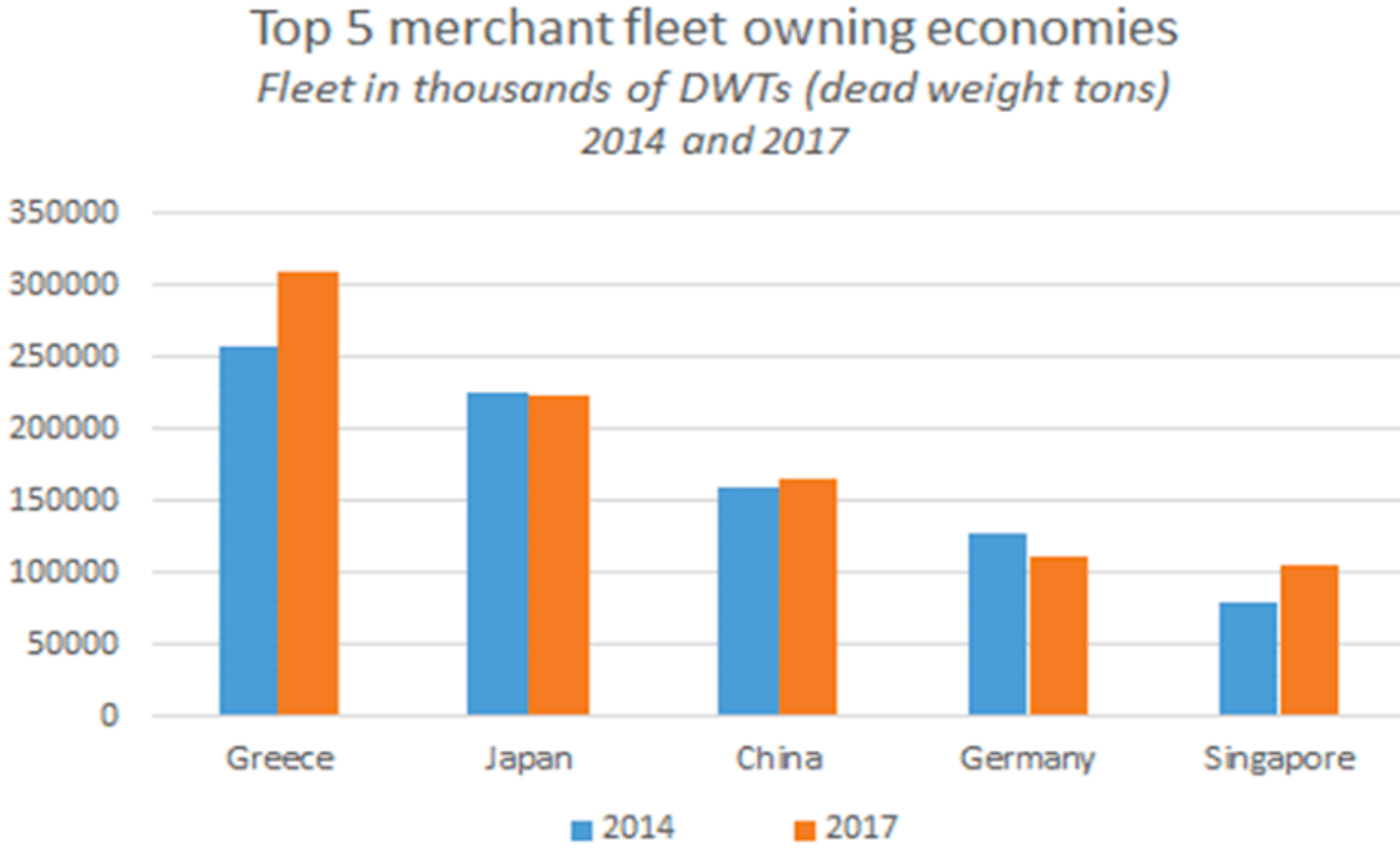
(See the China Power full study cited below for the details of the risk assessment)

Estimated Cost to Reroute All Malacca Traffic (Million USD)

	Sunda+[4]	% of SCS trade over period	Lombok	% of SCS trade over period	Australia	% of SCS trade over period
Daily	9.21		17.00		92.98	
Weekly	64.49	0.08-0.10	119.03	0.15-0.18	650.85	0.80-1.01
Monthly	279.46		515.80		2,820.35	

CSIS ChinaPower Project

Source: ***CSIS China Power Project,*** ***https://chinapower.csis.org/much-trade-transits-south-china-sea/.***



Source: UNCTAD secretariat maritime statistics, based on data provided by Clarksons Research.

Chinese Energy Transit and Resource Potential in the South China Sea

OSD - China's Hydrocarbon Strategy - 2019

CHINA'S HYDROCARBON STRATEGY

Key Takeaways

- China's interest in ensuring reliable, cost-effective, and diverse energy sources to support its economic growth drives its overseas investments.
- China hopes to diversify energy suppliers and transport options.

China's interest in ensuring reliable, cost-effective, and diverse fuel sources to support and sustain its economic development has led it to participate in oil and natural gas projects in more than 40 countries. In 2018, China imported oil to meet approximately 71 percent of its needs. This figure is projected to grow to approximately 80 percent by 2035 according to the International Energy Agency (IEA). In 2018, China met 44 percent of its natural gas demand with imports, which is projected to grow to 46 percent by 2035 according to the IEA. China looks primarily to the Persian Gulf, Africa, Russia, and Central Asia to satisfy its growing oil and gas demand.

China relies on SLOCs such as the South China Sea and Strait of Malacca for the majority of its hydrocarbon deliveries. In 2018, approximately 78 percent of China's oil imports and 16 percent of natural gas imports transited the South China Sea and Strait of Malacca. Despite China's efforts to diversify energy suppliers, the sheer volume of oil and liquefied natural gas imported from the Middle East and Africa will make securing strategic SLOCs a priority for China for many years.

New or upgraded crude oil pipelines from Russia to China and Kazakhstan to China demonstrate China's interest in increasing overland supply. In early 2018, China doubled the capacity of its pipeline to Russia from 300,000 to 600,000 barrels per day. In April 2017, the Burma-China crude oil pipeline was commissioned. This 440,000-barrels per day pipeline bypasses the Strait of Malacca by transporting crude oil from Kyaukpyu, Burma, to Kunming, China. The pipeline is completed; however, it will be operating at partial capacity for 1-2 years while the Kunming Refinery still operates in a testing capacity. Saudi Arabia and other Middle Eastern and African countries supply the crude oil for the pipeline.

In 2018, approximately 28 percent of China's natural gas imports (46.7 billion cubic meters) came from Turkmenistan by pipeline via Kazakhstan and Uzbekistan. This pipeline is designed to carry 55 billion cubic meters per year with Turkmenistan and China planning to expand it to 80 billion cubic meters per year in 2020. A natural gas pipeline connecting China to Burma can deliver 12 billion cubic meters per year, but only 3.04 billion cubic meters of gas were shipped in 2018. As of September 2018, Russia completed about 93 percent of the Power of Siberia pipeline that will deliver Russian natural gas to China by December 2019. The contract for this pipeline is for 30 years and provides that 38 billion cubic meters of natural gas be delivered to China each year.

Several Chinese companies, often in pursuit of China's economic development goals, are also interested in gaining access to advanced technologies to try to improve efficiency, obtain and deploy clean energy technologies, and increase profits.

Source: OFFICE OF THE SECRETARY OF DEFENSE, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China, China Military Power, 2019*, May 2019, pp. 12-13.

Chinese Energy Transit and Resource Potential in the South China Sea

China is one of the world largest consumers of oil and gas and is the world's largest petroleum importer. It presently is critically dependent on petroleum imports and most estimates indicate this dependence will increase steadily though 2040. Most such imports flow through the Strait of Malacca to the South China Sea – which is in itself a major potential source of undersea oil and gas.

The graphs and charts in this section summarize China's present level of dependence on such imports, and the economic and strategic importance of this energy flow – as well as the influence China gains over other key Asian importers like Japan, Taiwan, and South Korea. They provide a clear picture of why China sees securing the South China Sea as a key strategic interest, and why it is seeking to develop higher levels of energy efficiency, other sources of energy, and imports through pipelines that bypass the Strait of Malacca and South China Sea.

Here, it is important to note the the U.S. Energy Information Agency regards the Strait of Malacca as on the world's most energy important chokepoints.

The Strait of Malacca, located between Indonesia, Malaysia, and Singapore, links the Indian Ocean to the South China Sea and to the Pacific Ocean. The Strait of Malacca is the shortest sea route between Persian Gulf suppliers and the Asian markets—notably China, Japan, South Korea, and the Pacific Rim.

Oil shipments through the Strait of Malacca supply China and Indonesia, two of the world's fastest-growing economies. This Strait is the primary chokepoint in Asia, with an estimated 16.0 million b/d flow in 2016, compared with 14.5 million b/d in 2011. Crude oil generally makes up between 85% and 90% of total oil flows per year, and petroleum products account for the remainder (Table 3).

At its narrowest point in the Phillips Channel of the Singapore Strait, the Strait of Malacca is only about 1.7 miles wide, creating a natural bottleneck with the potential for collisions, grounding, or oil spills.[8] According to the International Maritime Bureau's Piracy Reporting Centre, piracy, including attempted theft and hijackings, is a threat to tankers in the Strait of Malacca, and ships saw an increasing number of attacks in 2015. Data for 2016 were not available at the time of publication.[9]

If the Strait of Malacca were blocked, nearly half of the world's fleet would be required to reroute around the Indonesian archipelago, such as through the Lombok Strait between the Indonesian islands of Bali and Lombok, or through the Sunda Strait between Java and Sumatra.[10] Rerouting would tie up global shipping capacity, add to shipping costs, and potentially affect energy prices.

Several proposals have been made to build bypass options and reduce tanker traffic through the Strait of Malacca. In particular, China and Myanmar (Burma) commissioned the Myanmar-China natural gas pipeline in 2013 that stretches from Myanmar's ports in the Bay of Bengal to the Yunnan province of China. The pipeline has a capacity of 424 billion cubic feet per year. The oil portion of the pipeline was completed in August 2014 and it is now operational at full capacity since the 260,000 b/d refinery in Yunnan, China, began operating in June 2017. The Myanmar-China oil line transports Middle Eastern oil, allowing it to bypass the Strait of Malacca.[11]

The Strait of Malacca is also an important transit route for liquefied natural gas (LNG) from Persian Gulf and African suppliers, particularly Qatar, to East Asian countries with growing LNG demand. The biggest importers of LNG in the region are Japan and South Korea.

Strait of Malacca oil and liquefied natural gas (LNG) flows, 2011-16

million barrels per day	2011	2012	2013	2014	2015	2016
Total oil flows through Strait of Malacca	14.5	15.1	15.4	15.5	15.5	16.0
crude oil	12.8	13.2	13.3	13.3	13.9	14.6
refined products	1.7	1.9	2.1	2.2	1.6	1.4
LNG (Tcf per year)	**2.8**	**3.5**	**3.9**	**4.1**	**3.6**	**3.2**

Notes: Tcf = Trillion cubic feet.

Sources: U.S. Energy Information Administration analysis based on Lloyd's List Intelligence, IHS Waterborne, BP.[12]

Source: EIA, "World Oil Transit Chokepoints, July 25, 2017," https://www.eia.gov/beta/international/regions-topics.php?RegionTopicID=WOTC.

Chinese Hydrocarbon Strategy 2019

China's interest in ensuring reliable, cost- effective, and diverse fuel sources to support and sustain its economic development has led it to participate in oil and natural gas projects in more than 40 countries. In 2018, China imported oil to meet approximately 71 percent of its needs. This figure is projected to grow to approximately 80 percent by 2035 according to the International Energy Agency (IEA). In 2018, China met 44 percent of its natural gas demand with imports, which is projected to grow to 46 percent by 2035 according to the IEA. China looks primarily to the Persian Gulf, Africa, Russia, and Central Asia to satisfy its growing oil and gas demand.

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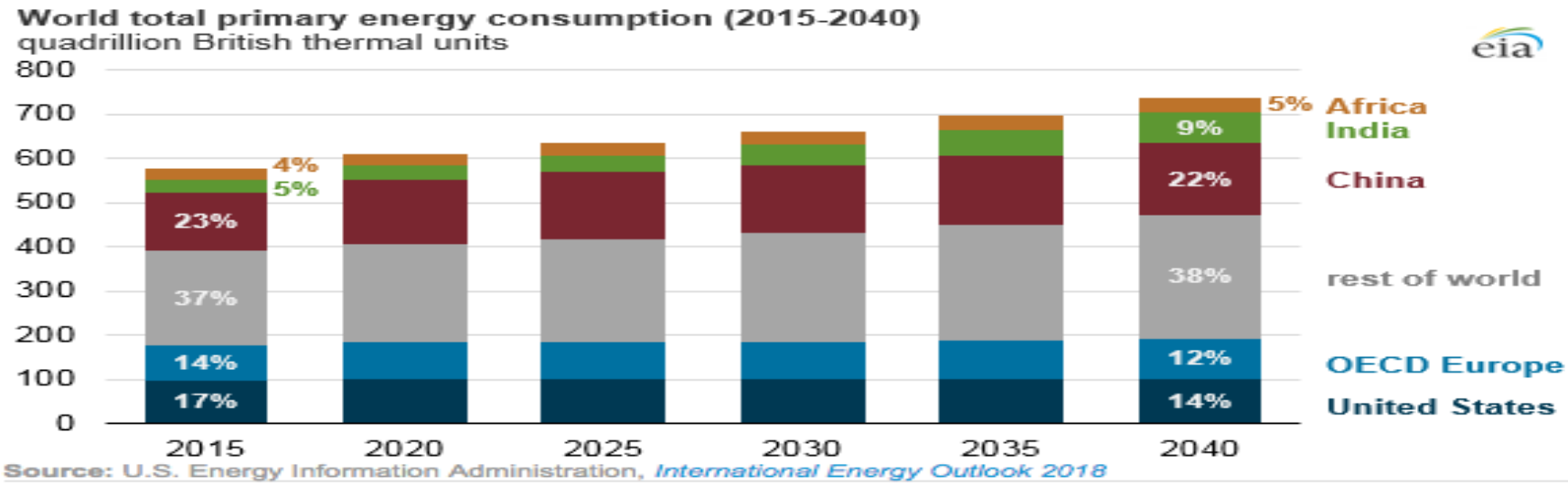
China's Top Crude Suppliers 2018

Country	Volume (1,000 barrels/day)	Percentage of Imported Crude Oil
Russia	1,434	15
Saudi Arabia	1,136	12
Angola	949	10
Iraq	902	10
Oman	659	7
Brazil	633	7
Iran	586	6
Kuwait	465	5
Venezuela	333	4
Congo (Brazzaville)	252	3
Others	1,903	21
Total	**9,252**	**100**

Source: Office of the Secretary of Defense, *Military and Security Developments Involving the Republic of China, Annual Report to Congress*, May 2, 2019, Department of Defense. China Military Power 2018, pp. 12-13, 120.

Uncertain Estimates of China's Future Energy Needs

U.S. EIA Estimates show a major range through 2040 according to China's policy



Source: U.S. Energy Information Administration, *International Energy Outlook 2018*

Table 9. China total delivered energy consumption, by case and end-use sector, 2015-40

(quadrillion Btu)

Case/sector	2015	2020	2025	2030	2035	2040	Average annual percent change (2015-40)
IEO2018 Reference case[a]							
Industrial end-use sector	71.2	75.5	74.0	70.5	67.8	65.7	-0.3%
All other end-use sectors	27.9	31.7	35.2	38.4	41.4	44.4	1.9%
Total delivered energy	99.1	107.2	109.2	108.9	109.2	110.1	0.4%
No Transition case							
Industrial end-use sector	71.2	78.4	82.8	83.7	84.5	85.5	0.7%
All other end-use sectors	27.9	32.4	37.8	42.7	47.4	52.2	2.5%
Total delivered energy	99.1	110.8	120.6	126.4	131.8	137.7	1.3%
Fast Transition case							
Industrial end-use sector	71.2	71.9	77.0	77.7	78.8	80.3	0.5%
All other end-use sectors	27.9	32.0	37.3	42.0	46.9	52.3	2.5%
Total delivered energy	99.1	104.0	114.2	119.7	125.7	132.6	1.2%

Notes: Totals may not equal sum of components due to independent rounding.

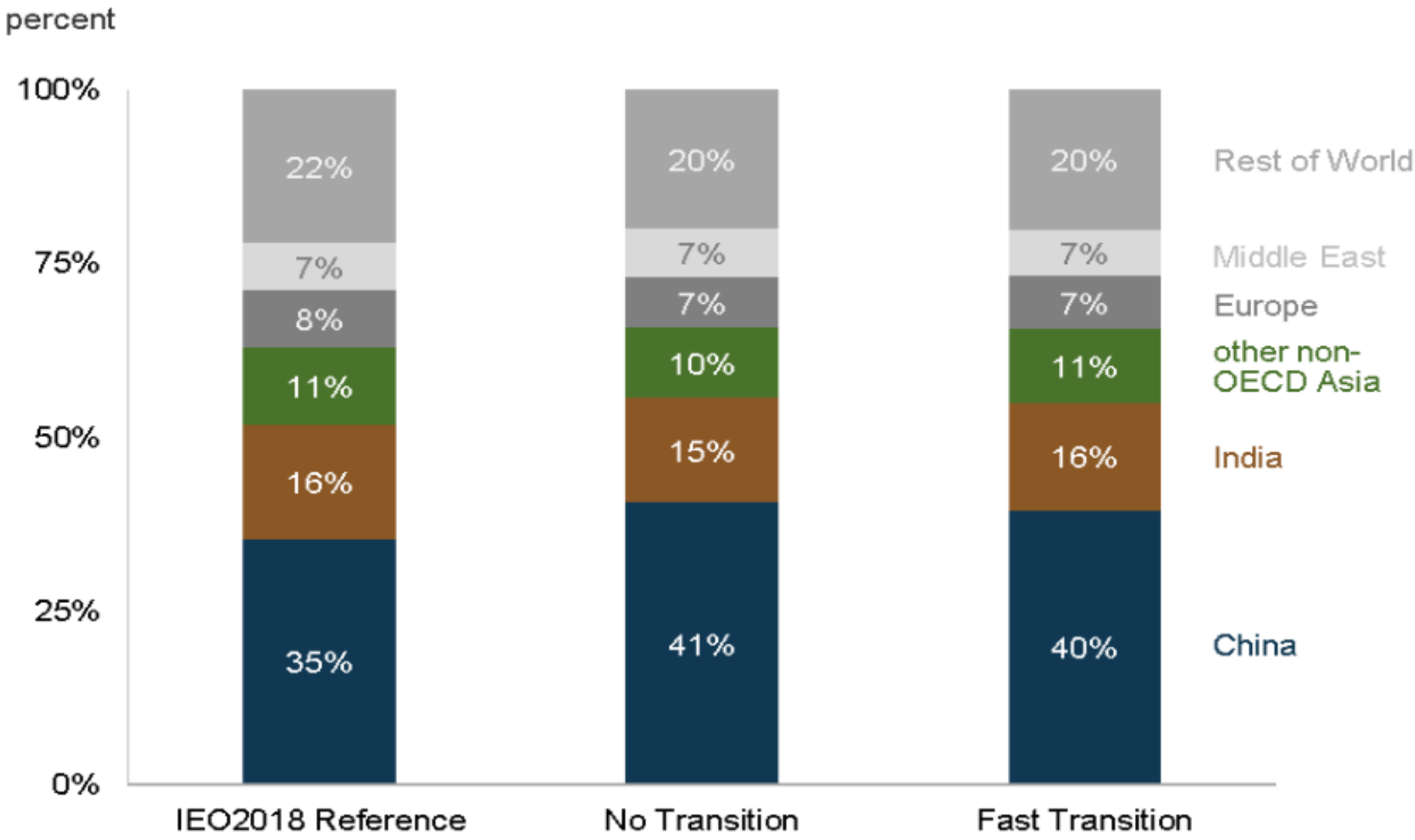
[a]The IEO2018 Reference case includes updates to the macroeconomic information, but no modeling changes have been made to other end-use sectors or assumptions

Sources: U.S. Energy Information Administration (EIA), World Energy Projection System Plus (2018), IEO2018 Reference case, run tPGDfix_AEO2018_Nov30dbs_180104.155422; No Transition case, run CHI_Hi_lowCpercent_trial2_180221.132410; and Fast Transition case, run, IEO18_hiCEIS_180314.133003

Source: DOE/EIA, **EIA's latest International Energy Outlook highlights analysis of China, India, and Africa; and** Energy implications of China's transition toward consumption-led growth, IEO 2018, July 24, 2018, https://www.eia.gov/outlooks/ieo/china/?src=-f2.

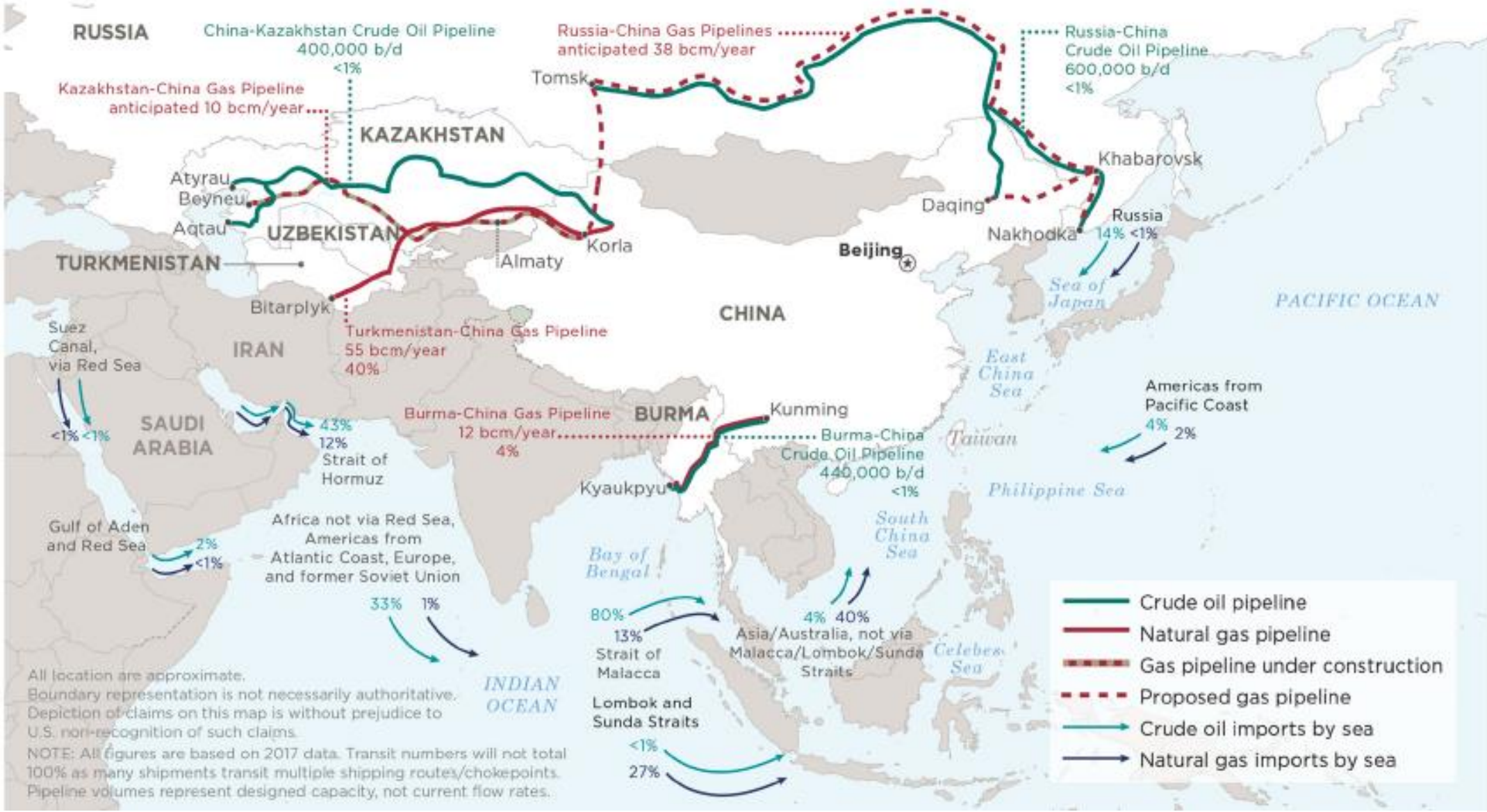
China's Dependence on Energy Intensive Manufacturing Through 2040:

U.S. EIA Estimate of Share of world energy-intensive manufacturing gross output by region in 2040



Source: DOE/EIA, Energy implications of China's transition toward consumption-led growth, July 2018.

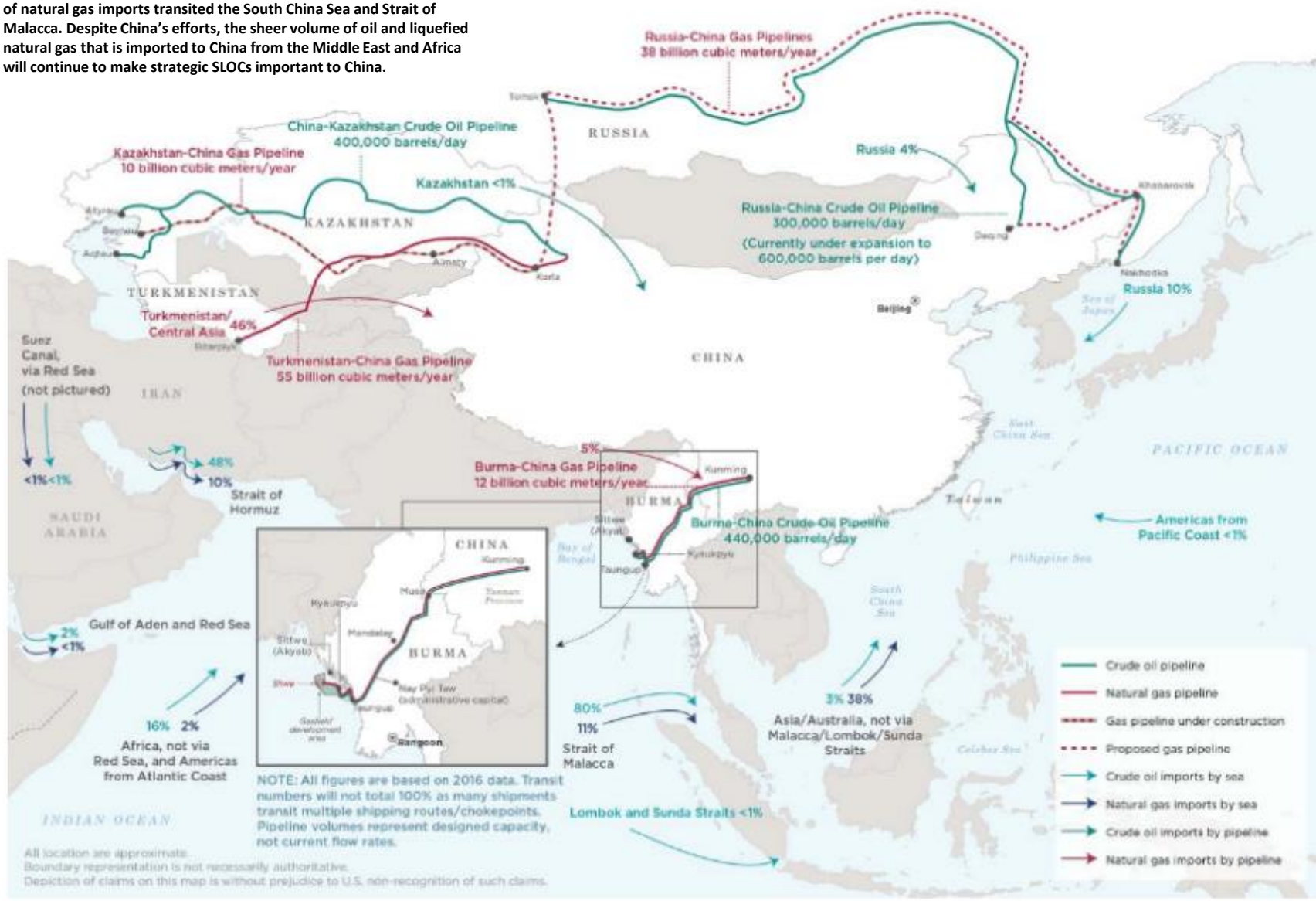
China's Energy Import Transit Routes - I



Office of the Secretary of Defense, *Military and Security Developments Involving the Republic of China, Annual Report to Congress*, May 16, 2018, Department of Defense. China Military Power 2018, pp. 56.

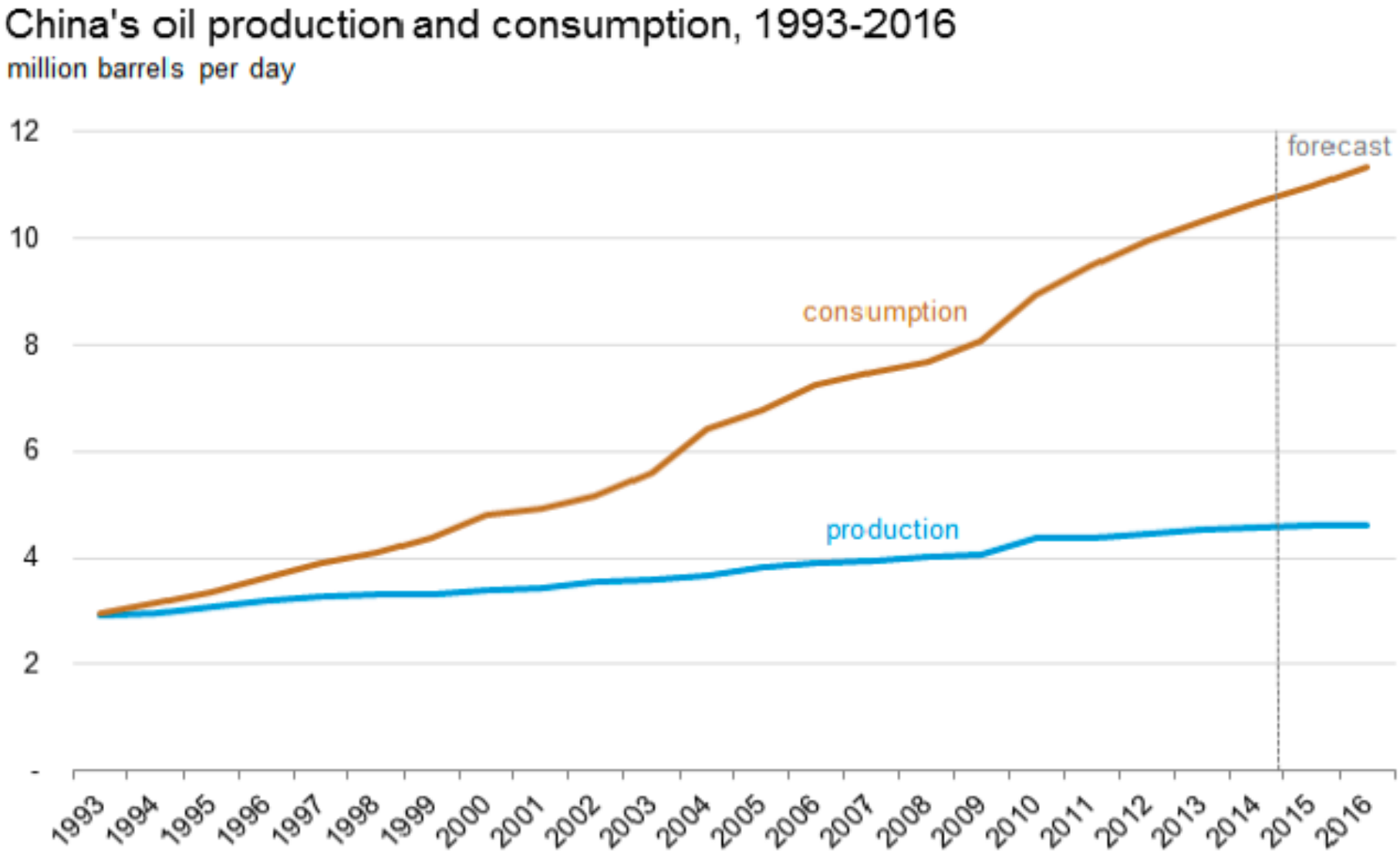
China's Energy Import Transit Routes - II

In 2016, approximately 80 percent of China's oil imports and 11 percent of natural gas imports transited the South China Sea and Strait of Malacca. Despite China's efforts, the sheer volume of oil and liquefied natural gas that is imported to China from the Middle East and Africa will continue to make strategic SLOCs important to China.



Office of the Secretary of Defense, *ANNUAL REPORT TO CONGRESS Military and Security Developments Involving the People's Republic of China 2017*, May 15, 2018, https://www.defense.gov/Portals/1/Documents/pubs/2017_China_Military_Power_Report.PDF, p. 44.

China’s Energy Vulnerability - I

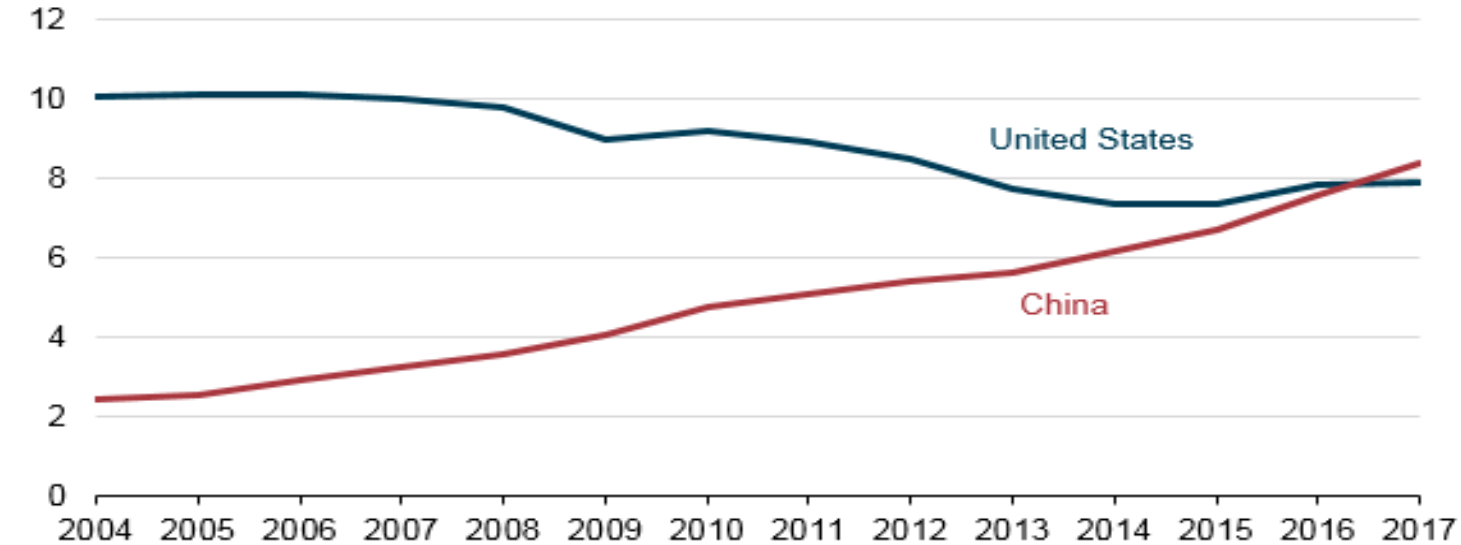


eia Source: Energy Information Administration and *Short-Term Energy Outlook, May 2015*

China's Energy Vulnerability - II

China surpassed the United States as the world's largest crude oil importer in 2017

Annual U.S. and China gross crude oil imports (2004-2017)
million barrels per day



Source: U.S. Energy Information Administration, *Petroleum Supply Monthly* and *Weekly Petroleum Status Report*, China General Administration of Customs, based on Bloomberg, L.P.
Note: December U.S. imports derived from weekly crude oil imports.

China surpassed the United States in annual gross crude oil imports in 2017, importing 8.4 million barrels per day (b/d) compared with 7.9 million b/d for the United States. China had become the world's largest net importer (imports minus exports) of total petroleum and other liquid fuels in 2013. New refinery capacity and strategic inventory stockpiling combined with declining domestic oil production were the major factors contributing to the recent increase in China's crude oil imports.

Source: EIA, **China surpassed the United States as the world's largest crude oil importer in 2017, Today in Energy,** February 5, 2018 , https://www.eia.gov/todayinenergy/detail.php?id=34812.

China's Energy Vulnerability - III

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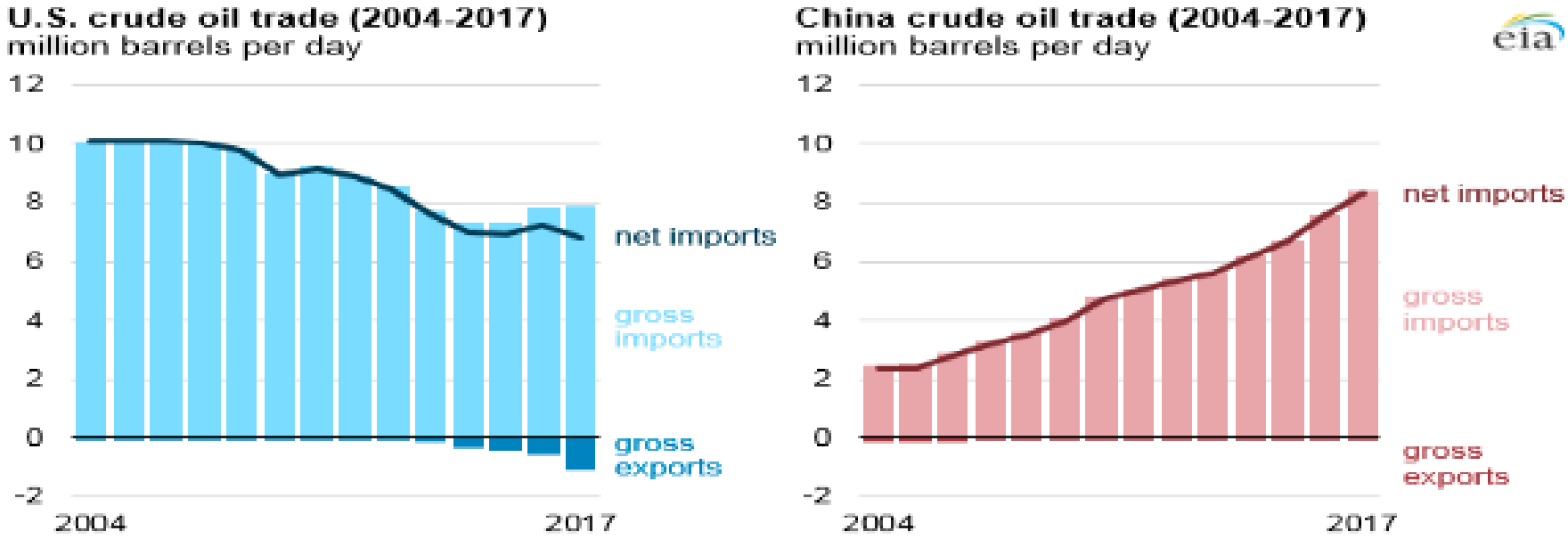


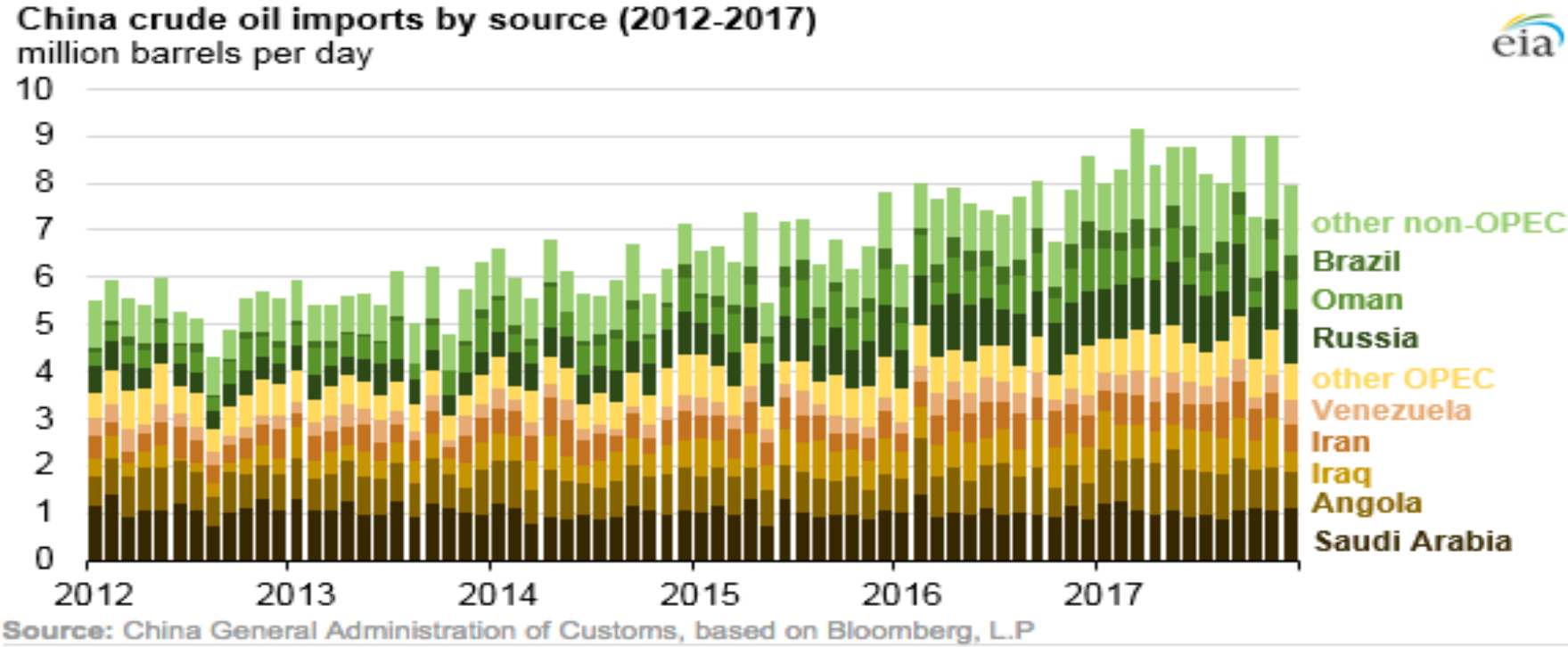
Source: U.S. Energy Information Administration, *Petroleum Supply Monthly* and *Weekly Petroleum Status Report*, China General Administration of Customs, based on Bloomberg, L.P.
Note: December U.S. imports derived from weekly crude oil imports.

In 2017, 56% of China's crude oil imports came from countries within the Organization of the Petroleum Exporting Countries (OPEC), a decline from the peak of 67% in 2012. More so than other countries, Russia and Brazil increased their market shares of Chinese imports between those years from 9% to 14% and from 2% to 5%, respectively.

EIA, **China surpassed the United States as the world's largest crude oil importer in 2017, Today in Energy,** February 5, 2018 , https://www.eia.gov/todayinenergy/detail.php?id=34812.

China's Energy Vulnerability - IV

Russia surpassed Saudi Arabia as China's largest source of foreign crude oil in 2016, exporting 1.2 million b/d to China in 2017 compared with Saudi Arabia's 1.0 million b/d. OPEC countries and some non-OPEC countries, including Russia, agreed to reduce crude oil production through the end of 2018, which may have allowed other countries to increase their market shares in China in 2017.



Several factors are driving the increase in China's crude oil imports. China had the largest decline in domestic petroleum and other liquids production among non-OPEC countries in 2016, and EIA estimates it will have had the second-largest decline in 2017. Total liquids production in China averaged 4.8 million b/d in 2017, a year-over-year decline of 0.1 million b/d (2%) from 2016, and further declines in both 2018 and 2019 are forecasted in EIA's January 2018 *Short-Term Energy Outlook* (STEO).

Source: EIA, **China surpassed the United States as the world's largest crude oil importer in 2017, Today in Energy,** February 5, 2018 , https://www.eia.gov/todayinenergy/detail.php?id=34812.

China's Energy Vulnerability - V

Several factors are driving the increase in China's crude oil imports. China had the largest decline in domestic petroleum and other liquids production among non-OPEC countries in 2016, and EIA estimates it will have had the second-largest decline in 2017. Total liquids production in China averaged 4.8 million b/d in 2017, a year-over-year decline of 0.1 million b/d (2%) from 2016, and further declines in both 2018 and 2019 are forecasted in EIA's January 2018 *Short-Term Energy Outlook* (STEO).

In contrast to declining domestic production, EIA estimates that growth in China's consumption of petroleum and other liquid fuels in 2017 was the world's largest for the ninth consecutive year, growing 0.4 million b/d (3%) to 13.2 million b/d. As China has built up inventories of strategic petroleum reserves, China's crude oil imports have increased faster than their domestic consumption.

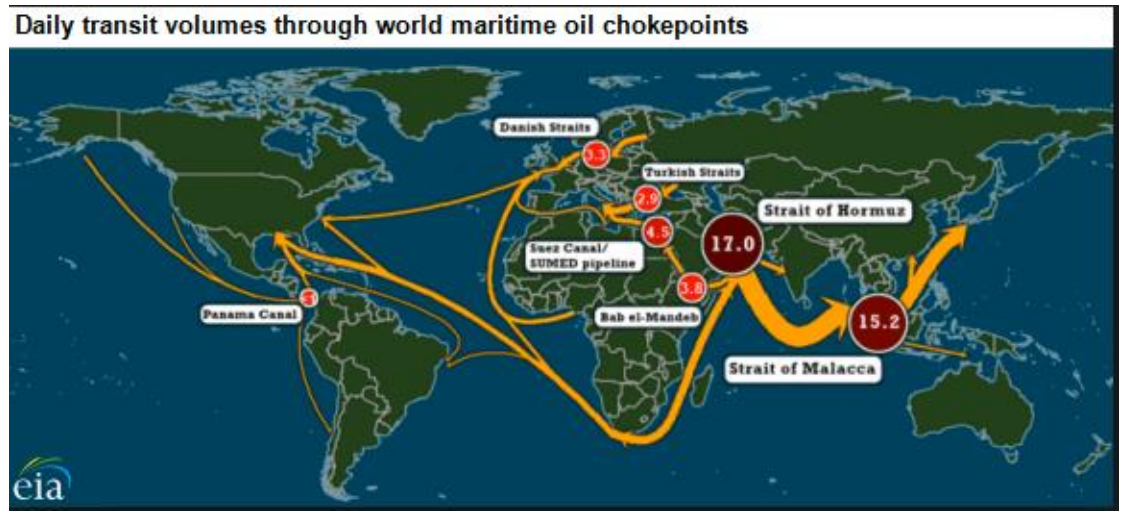
In addition, China has reformed its refining sector by reducing restrictions on both imports and exports. Since mid-2015, China granted crude oil import licenses to independent refineries in northeast China, which have since increased refinery utilization and crude oil imports.

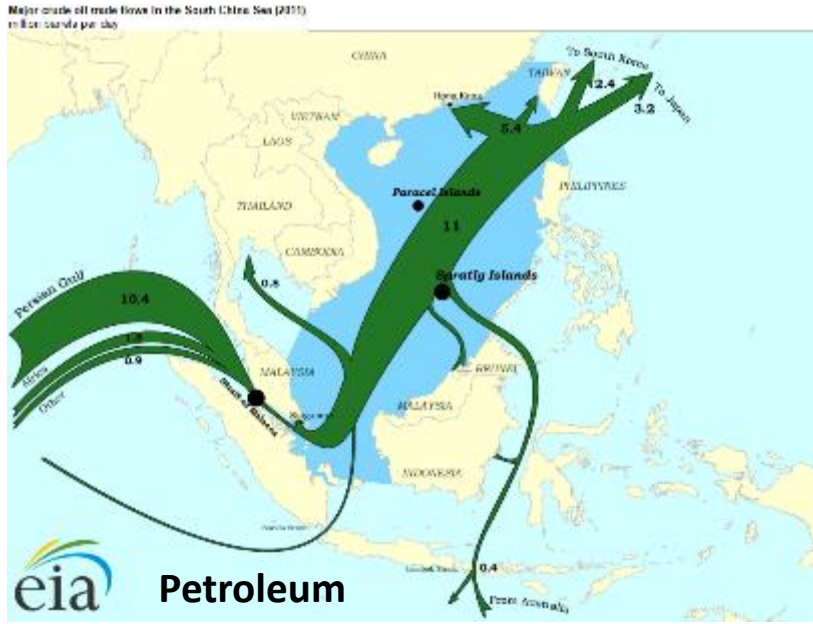
China's crude oil imports have also increased because of higher refinery runs and expanding refinery capacity. China's refinery runs increased by an estimated 0.5 million b/d in 2017 to 11.4 million b/d, driven in part by two refinery expansions in the second half of the year. A 260,000 b/d refinery in Anning in Yunnan province started operating in the third quarter of 2017. The China National Offshore Oil Corporation's (CNOOC) Huizhou refinery increased capacity by 200,000 b/d and increased its imports from various sources in the third and fourth quarters of 2017.

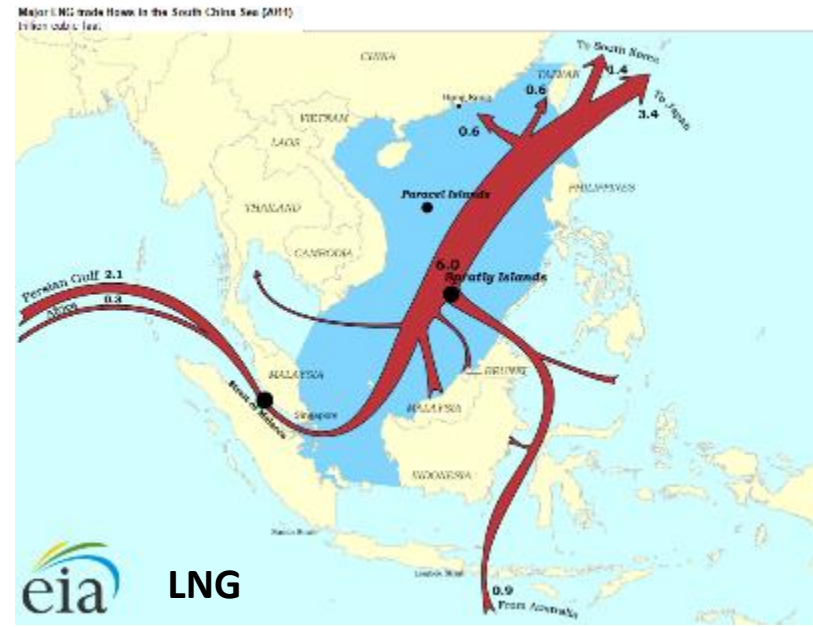
Ongoing infrastructure expansions will likely contribute to further increases in China's crude oil imports. In January 2018, China and Russia began operating an expansion of the East Siberia-Pacific Ocean (ESPO) pipeline, doubling its delivery capacity to approximately 0.6 million b/d. According to trade press reports, as much as 1.4 million b/d of new refinery capacity is planned to open in China by the end of 2019. Given China's expected decline in domestic crude oil production, imports will likely continue to increase over at least the next two years

EIA, **China surpassed the United States as the world's largest crude oil importer in 2017, Today in Energy,** February 5, 2018 , https://www.eia.gov/todayinenergy/detail.php?id=34812.

Chinese Dependence on the Flow of Petroleum Exports







https://www.eia.gov/todayinenergy/detail.php?id=10671, and https://www.eia.gov/beta/international/regions-topics.cfm?RegionTopicID=WOTC.

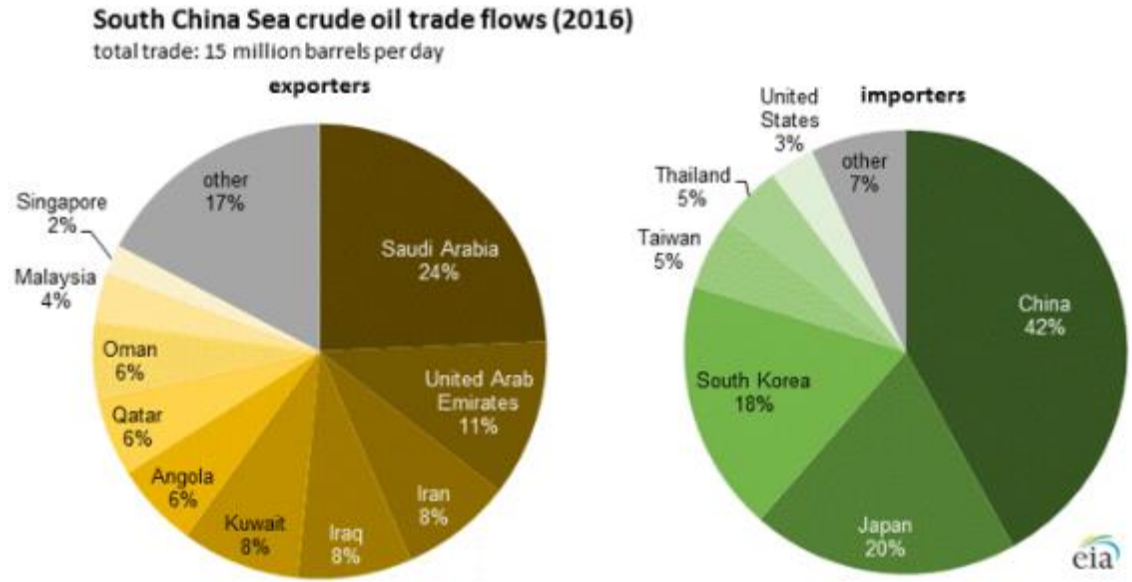
EIA: More Than 30% of Global Maritime Oil Trade Moves Through South China Sea - 2016

The South China Sea is a major trade route for crude oil, and in 2016, more than 30% of global maritime crude oil trade, or about 15 million barrels per day (b/d), passed through the South China Sea.

More than 90% of crude oil volumes flowing through the South China Sea in 2016 transited the Strait of Malacca, the shortest sea route between suppliers in Africa and the Persian Gulf and markets in Asia, making it one of the world's primary oil transit chokepoints. In addition, a significant amount of crude oil (about 1.4 million b/d) passes through the strait on its way to Singapore and the west coast of Peninsular Malaysia, where it is refined before transiting the South China Sea in the form of petroleum products.

Source: Candace Dunn, Justine Barden, More than 30% of global maritime crude oil trade moves through the South China Sea, *Today in Energy.* EIA, August 27, 2018, https://www.eia.gov/todayinenergy/detail.php?id=36952.

EIA: More Than 30% of Global Maritime Oil Trade Moves Through South China Sea - 2018



The South China Sea is a major trade route for the Middle East, which accounted for more than 70% of total South China Sea crude oil shipments in 2016. Saudi Arabia is the largest source of crude oil, making up almost one-fourth of crude oil volumes traversing the South China Sea. More than half of Saudi Arabia's global crude oil shipments traveled through the South China Sea in 2016.

Before the lifting of United Nations sanctions on Iran's crude oil exports in January 2016, Iran relied heavily on Asian markets for most of its exports. After the sanctions were lifted, Iran could once again export crude oil to Europe. However, the South China Sea route still accounted for 52% of Iran's crude oil exports in 2016.

Indonesia and Malaysia together accounted for 5% of crude oil loadings that passed through the South China Sea in 2016 and 2% of crude oil receipts. Most of the crude oil from these countries that passes through the South China Sea is exported to other countries. However, some intra-country trade also crosses the southern portion of the South China Sea as cargoes move between eastern and western ports within each country. Singapore accounted for 2% of crude oil loadings that passed through the South China Sea in 2016 and 1% of crude oil receipts. Although Singapore does not produce crude oil, it is a major hub for refining crude oil and for storing and transshipping crude oil and petroleum products. In 2016, 95% of Singapore's crude oil exports passed through the South China Sea. Most of these volumes originally came from the Middle East, and about half went to China.

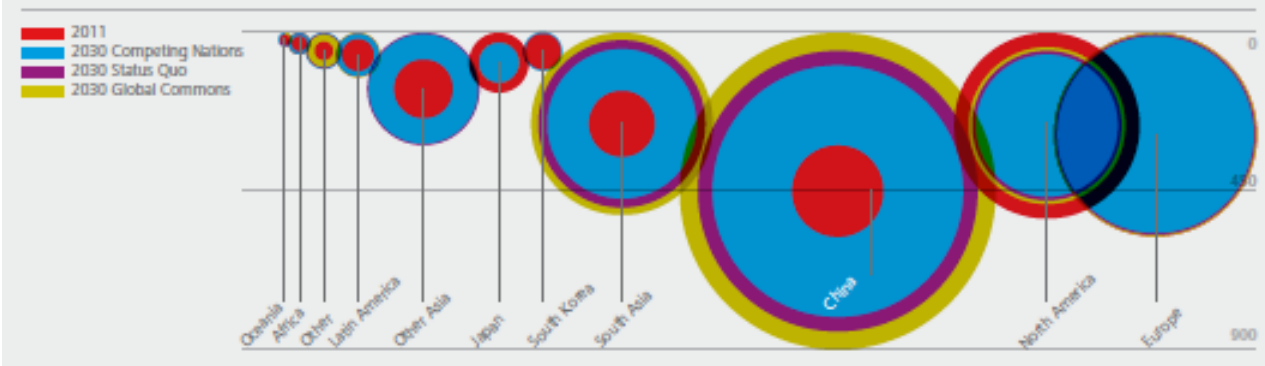
The three crude oil importers with the largest volumes passing through the South China Sea—China, Japan, and South Korea—collectively accounted for 80% of total crude oil volumes transiting the South China Sea in 2016. About 90% of China's 2016 maritime crude oil shipments were transported through the South China Sea. China's crude oil imports have increased substantially over the past few years as a result of the country's robust energy demand growth and stagnant crude oil production, and the country recently surpassed the United States as the world's largest crude oil importer. A significant portion of these incremental volumes that are sent to northern China from eastern Russia by pipeline and by shipping vessels does not pass through the South China Sea.

About 90% of the crude oil imported by Japan and South Korea was shipped through the South China Sea in 2016. Most of Japan's and South Korea's imports are from Middle Eastern suppliers and are transported through the Strait of Malacca and then the South China Sea.

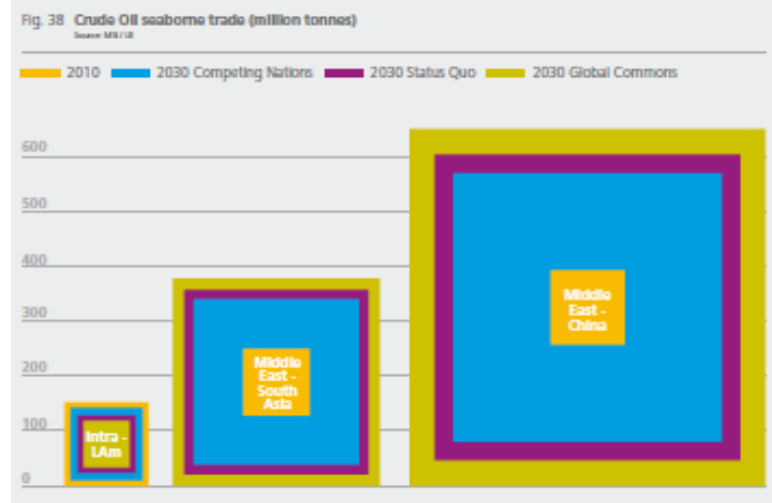
Candace Dunn, Justine Barden, More than 30% of global maritime crude oil trade moves through the South China Sea, *Today in Energ.* EIA, August 27, 2018, https://www.eia.gov/todayinenergy/detail.php?id=36952.

Guesstimate of increase in Crude Oil Flows and Seaborne Trade in Tons: 2010 vs. 2030

Crude Oil Imports in Million Tons

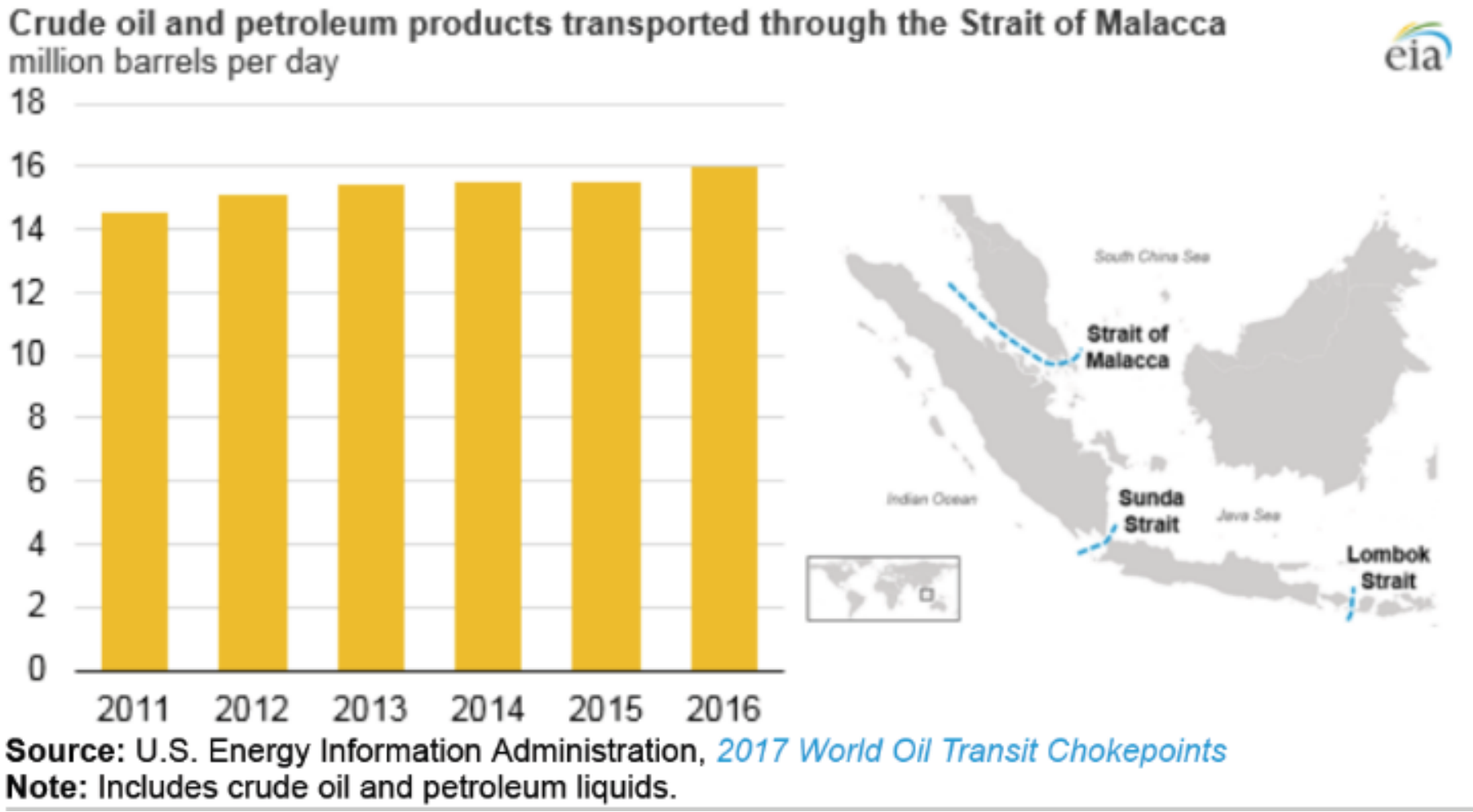


Crude Oil Seaborne trade in Million Tons



Source: *Global MarineTrends*, QunietiQ, Lloyds, University of Strathclyde, 2017.

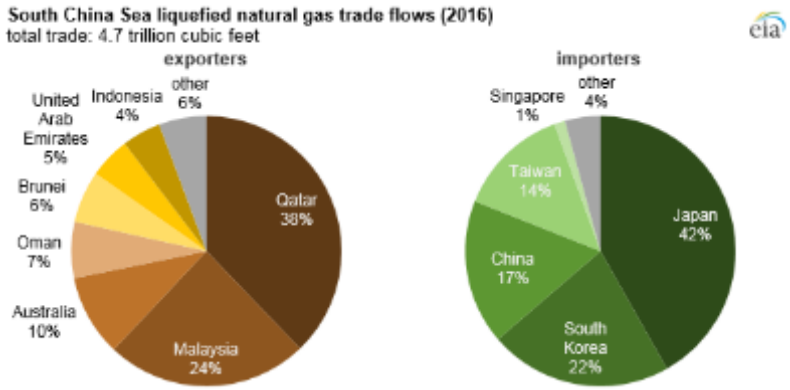
Oil Transit Through the Strait of Malacca

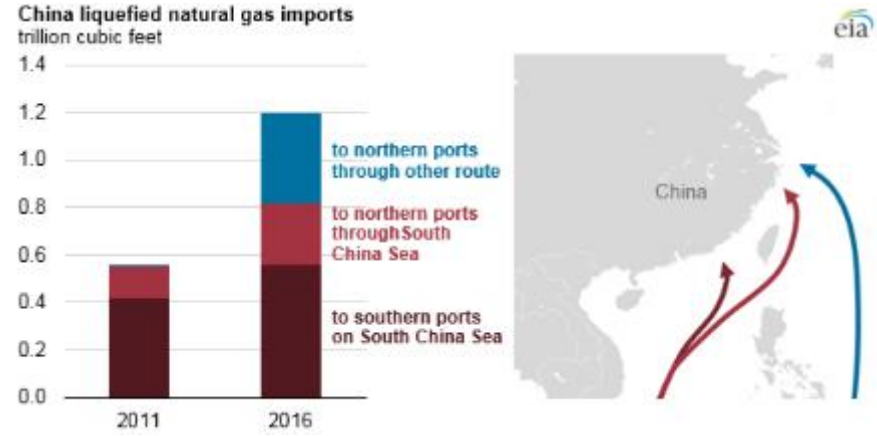


61% of all maritime petroleum and other liquids move through Strait of Malacca. 85% to 90% is crude oil.

Source: EIA, The Strait of Malacca, *A Key Oil Trade Chokepoint*, August 11,2017

LNG Trade Flows -2016





The South China Sea is a major route for liquefied natural gas (LNG) trade, and in 2016, almost 40% of global LNG trade, or about 4.7 trillion cubic feet (Tcf), passed through the South China Sea.

The South China Sea is an important trade route for Malaysia and Qatar. The two LNG exporters collectively accounted for more than 60% of total South China Sea LNG volumes in 2016. Almost half of Qatar's global LNG shipments traveled through the South China Sea in 2016. All of Malaysia's LNG exports pass through the South China Sea, as the country's one LNG export complex lies on the South China Sea coast.

Several other LNG exporters also use South China Sea trade routes to reach LNG importers. In 2016, Oman, Brunei, and the United Arab Emirates shipped between 84% and 100% of their total LNG exports through the South China Sea.

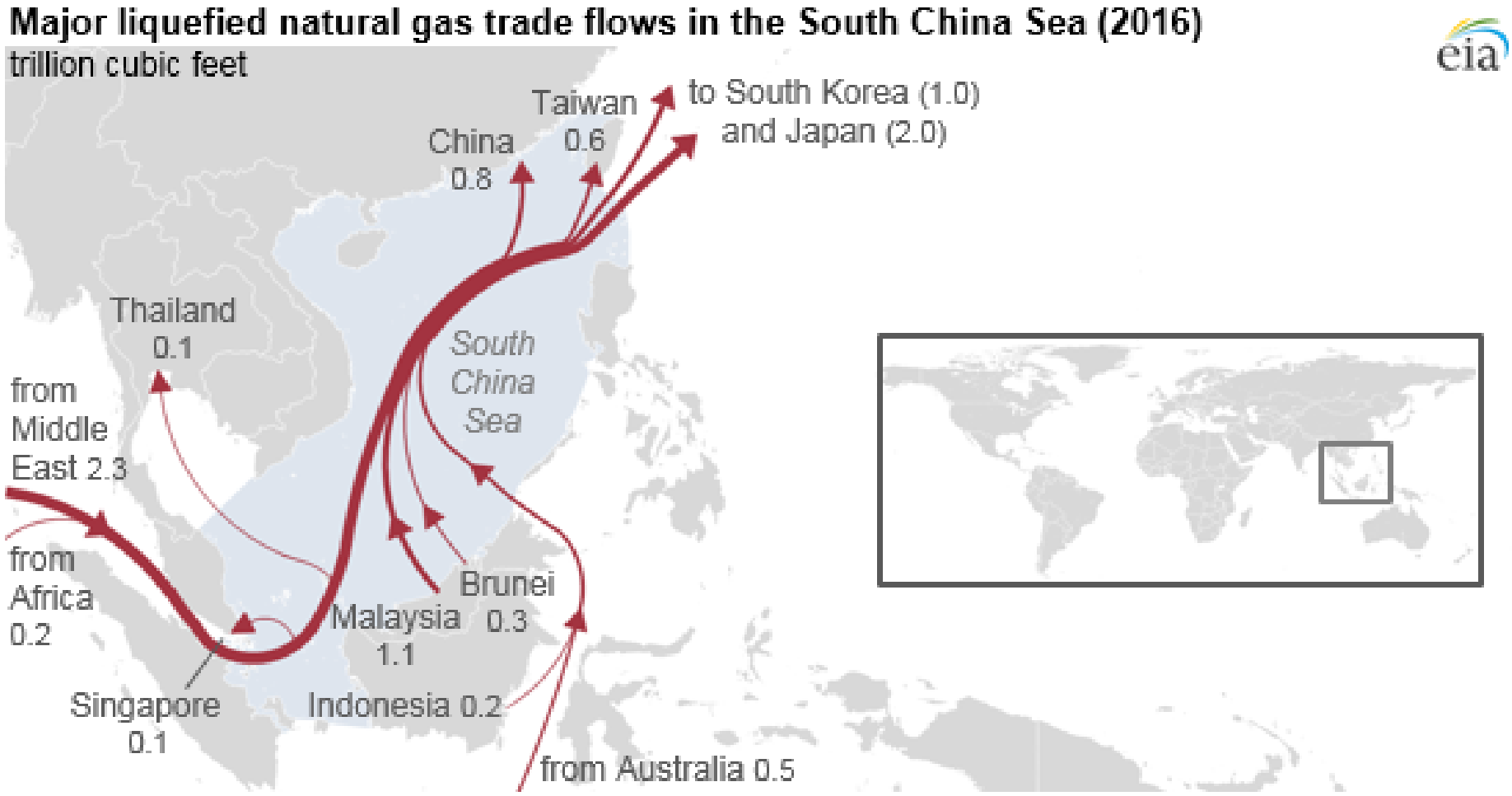
Other LNG exporters in the region, such as Australia and Indonesia, make more use of other trade routes to reach LNG markets. In 2016, about 23% of total Australian LNG exports and about 29% of Indonesian LNG exports were shipped by way of the South China Sea. Much of the remainder of Australia's and Indonesia's LNG exports passed to the east of the Philippines and Taiwan, avoiding the South China Sea on the way to customers in Japan, South Korea, and northern China.

The four LNG importers with the largest volumes passing through the South China Sea are Japan, South Korea, China, and Taiwan, collectively accounting for 94% of total LNG volumes going through the South China Sea in 2016. Japan is the world's largest LNG importer, and slightly more than half of all of Japan's LNG imports in 2016 were shipped by way of the South China Sea. Similarly, about two-thirds of the LNG imported by South Korea—the world's second-largest LNG importer—was shipped through the South China Sea that year.

More than two-thirds of China's LNG imports and more than 90% of Taiwan's LNG imports passed through the South China Sea in 2016. Total imports of LNG to China have more than doubled over the previous five years, from 0.56 Tcf in 2011 to 1.20 Tcf in 2016. However, more than half of the growth in China's LNG imports were volumes that went to northern ports without transiting the South China Sea. Based on projections in the *International Energy Outlook 2017*, EIA projects that China will surpass South Korea as the world's second-largest LNG importer by 2018 and nearly match Japan's level of LNG imports by 2040.

Source: EIA, "Today in Energy," November 2, 2017, https://www.eia.gov/todayinenergy/detail.php?id=33592; U.S. Energy Information Administration based on Chinese import statistics from Global Trade Tracker; *BP Statistical Review of World Energy 2017*.

40% of Global LNG (4.7 TCF) Moves Through the South China Sea



Source: EIA, "Today in Energy," November 2, 2017, https://www.eia.gov/todayinenergy/detail.php?id=33592.

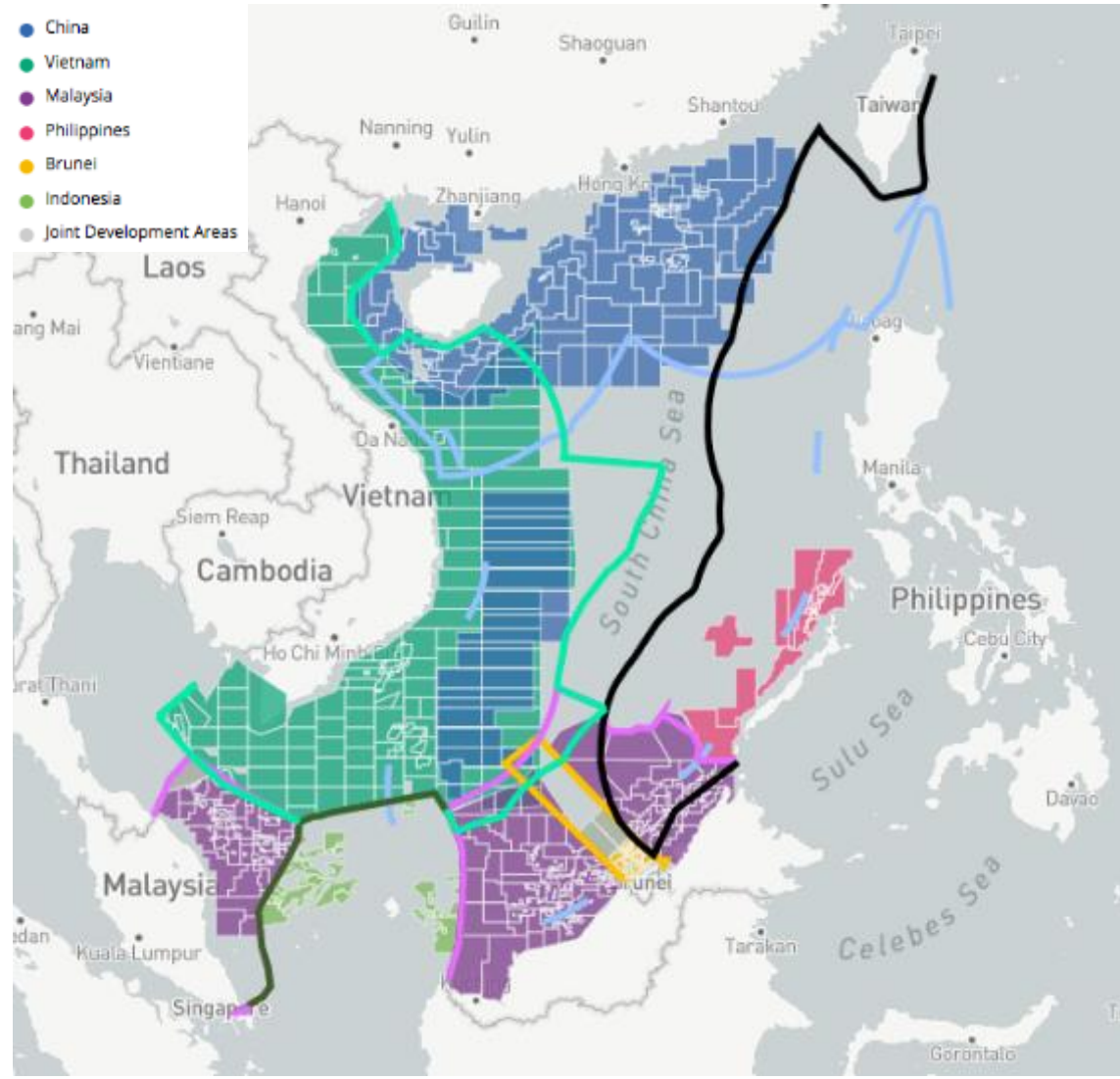
Possible Energy Reserves in the South China Sea

Experts disagree over the potential oil and gas reserves in the South China Sea, and such estimates can only be fully confirmed by actual exploration and development. These reserves may, however, be an important part of China's efforts to expand its claims and influence in the region and find ways to be less dependent on imports from the Gulf and through the Strait of Malacca

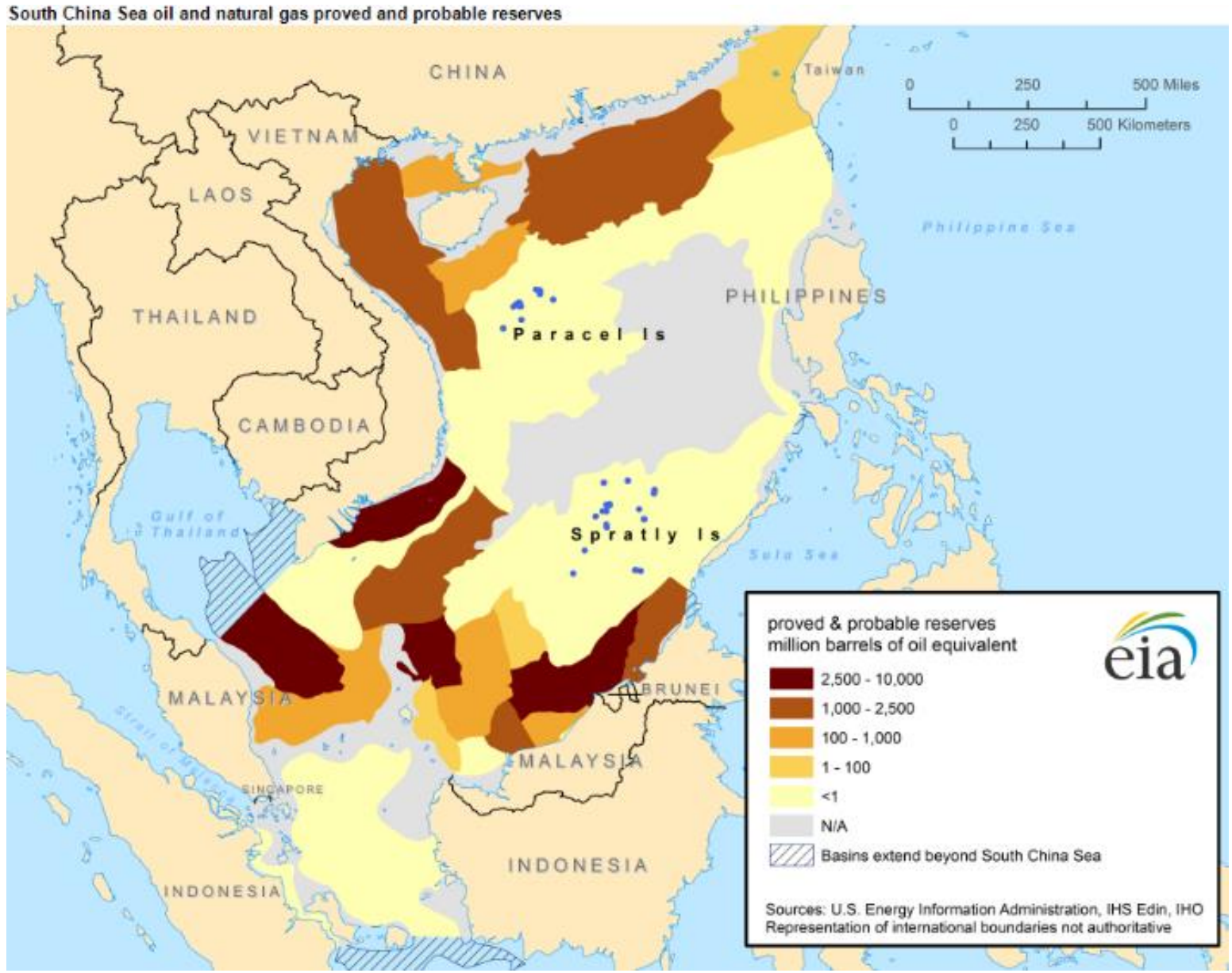
The Asia Maritime Transparency Initiative in the CSIS concludes that,

> The U.S. Energy Information Agency estimates that the South China Sea holds about 190 trillion cubic feet of natural gas and 11 billion barrels of oil in proved and probable reserves, most of which lie along the margins of the South China Sea rather than under disputed islets and reefs. The U.S. Geological Survey in 2012 estimated that there could be another 160 trillion cubic feet of natural gas and 12 billion barrels of oil undiscovered in the South China Sea. Beijing's estimates for hydrocarbon resources under the sea are considerably higher but still modest in relation to China's overall demand—the country's oil consumption in 2018 is expected to top 12.8 million barrels per day.

CSIS provides an interactive form of the map below on its web site that provides updated estimates of the possible energy reserves where such data are available. (https://amti.csis.org/south-china-sea-energy-exploration-and-development/).



South China Sea Energy Reserves (EIA)



Source: *EIA,* Contested areas of South China Sea likely have few conventional oil and gas resources, April 3, 2012, https://www.eia.gov/todayinenergy/detail.php?id=10651

South China Sea

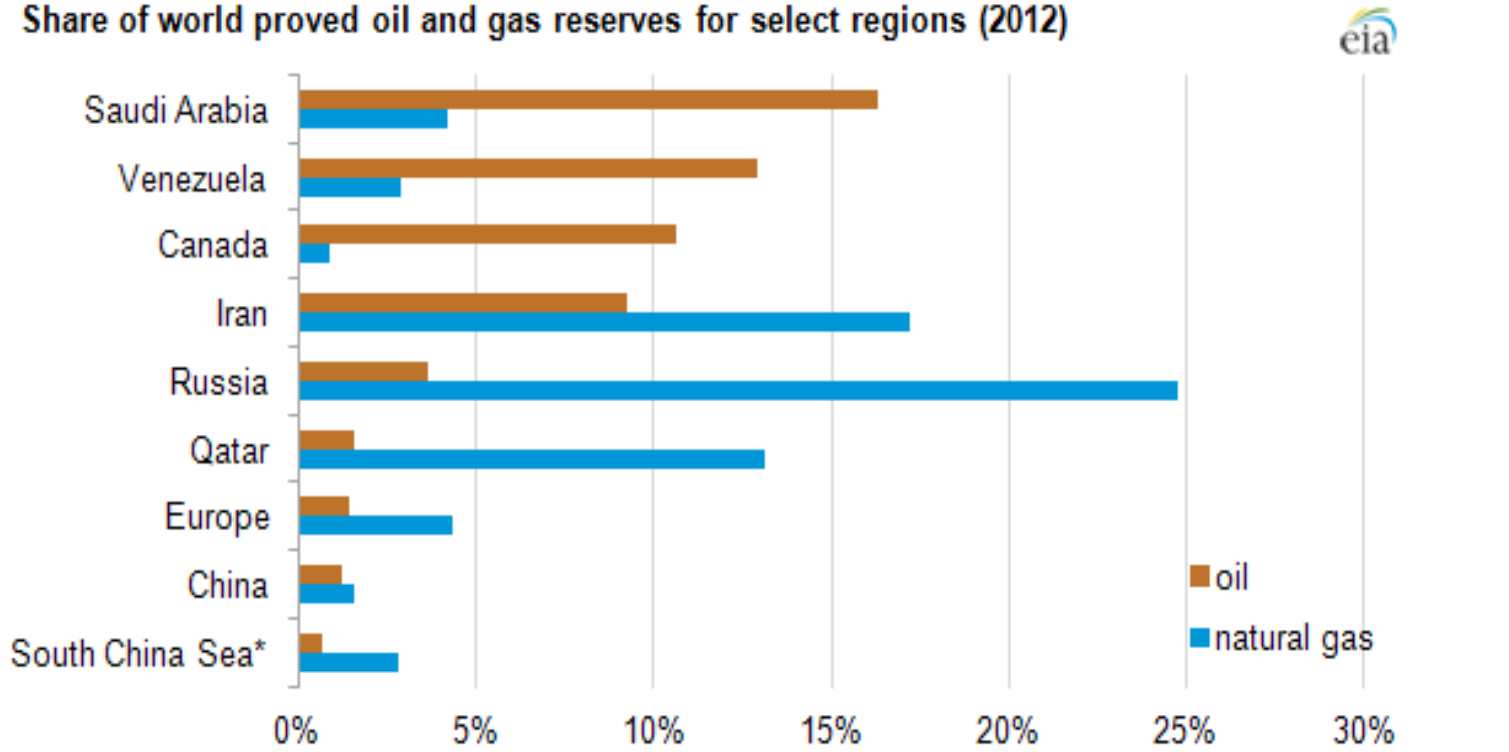
Limited Proven Oil & Gas Reserves (EIA)

EIA, Contested areas of South China Sea likely have few conventional oil and gas resources, April 3, 2012, https://www.eia.gov/todayinenergy/detail.php?id=10651

EIA's analysis shows that most fields containing discovered oil and natural gas are clustered in uncontested parts of the South China Sea, close to shorelines of the coastal countries, and not near the contested islands. Industry sources suggest almost no oil and less than 100 billion cubic feet of natural gas in proved and probable reserves exist in fields near the Spratly Islands. The Paracel Island territory has even less natural gas and no oil.

In total, the South China Sea has about 11 billion barrels of oil and 190 trillion cubic feet of natural gas rated as proved or probable reserves. These levels are similar to the amount of proved oil reserves in Mexico and about two-thirds of the proved natural gas reserves in Europe, not including Russia (see figure below).

Share of world proved oil and gas reserves for select regions (2012)



Source: U.S. Energy Information Administration, International Energy Statistics, South China Sea Regional Analysis Brief.
***Note:** South China Sea includes proved and probable reserves.

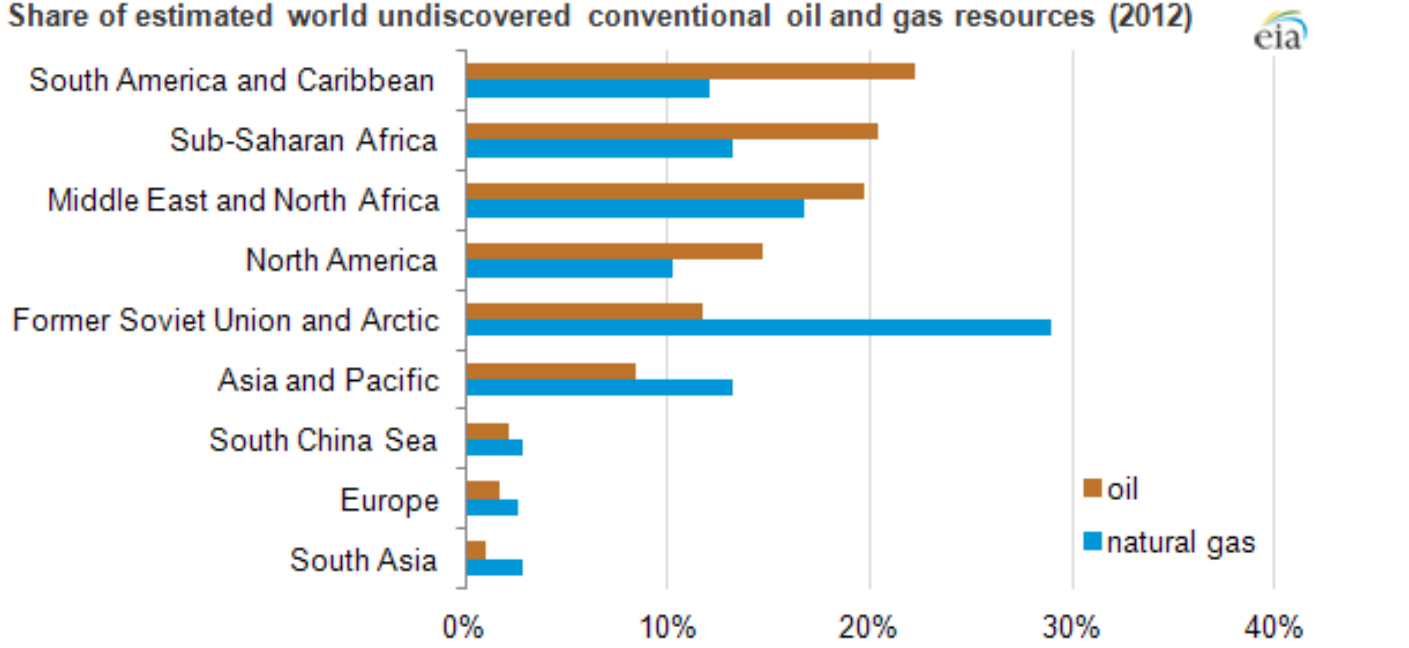
South China Sea

Little Discovery Potential for Oil & Gas Reserves (EIA)

EIA, Contested areas of South China Sea likely have few conventional oil and gas resources, April 3, 2012, https://www.eia.gov/todayinenergy/detail.php?id=10651

In addition to proved and probable reserves, the South China Sea may have additional hydrocarbons in underexplored areas. The U.S. Geological Survey (USGS) estimated in 2012 that about 12 billion barrels of oil and 160 trillion cubic feet of natural gas might exist as undiscovered resources in the South China Sea, excluding the Gulf of Thailand and other adjacent areas. About one fifth of these resources may be found in contested areas, particularly in the Reed Bank at the northeast end of the Spratly Islands, which is claimed by China, Taiwan, and Vietnam. These additional resources are not considered commercial reserves at this time; extracting them may not be economically feasible.

Share of estimated world undiscovered conventional oil and gas resources (2012)



Source: U.S. Energy Information Administration, International Energy Statistics, South China Sea Regional Analysis Brief, and U.S. Geological Survey, Estimate of Undiscovered Conventional Oil and Gas Resources of the World, 2012.

The Paracel Island area may also contain significant natural gas hydrate resources. While test drills are promising, commercial development of natural gas hydrates in the South China Sea is many years away given technological challenges and current natural gas prices.