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The Center for Advanced Defense Studies

A Report of the CSIS Asia Maritime Transparency Initiative and
the Center for Advanced Defense Studies

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Executive Summary

Since completing the construction of its artificial island outposts in the Spratly Islands in 2016, China has shifted its focus toward asserting control over peacetime activity across the South China Sea. A key component of this shift has been the expansion of China's maritime militia—a force of vessels ostensibly engaged in commercial fishing but which in fact operate alongside Chinese law enforcement and military to achieve Chinese political objectives in disputed waters.

The tactics employed by the militia pose a significant challenge to those interested in maintaining a maritime order rooted in international law. But open-source Chinese language research, remote sensing data, and maritime patrols conducted by actors operating in disputed waters have the power to expose the militia and diminish its effectiveness as a gray zone force.

This report presents the most comprehensive profile yet available of China's maritime militia in the South China Sea. Additionally, this report presents a methodology for identifying Chinese maritime militia vessels and a list of 122 militia vessels thus identified, as well as a list of 52 more ships highly likely to be militia.

Key Findings

HISTORY OF THE MILITIA

- China's modern use of fishing militias dates back to at least 1974, when they were employed in seizing the Paracel Islands from the Republic of Vietnam. Several developments in the 1980s, including the 1985 establishment of a militia force in Tanmen Township on Hainan and the establishment of China's first bases in the Spratlys in 1988, would lay the groundwork for a more active militia in the following decades.
- The militia's involvement in aggressive operations increased in the 2000s, when militia vessels physically interfered with the navigation of multiple U.S. Navy ships. This continued into the early 2010s, where the militia would play a key role in China's seizure of Scarborough Shoal in 2012, as well as the deployment of a Chinese oil rig into Vietnamese waters in 2014.
- Since the completion of China's artificial island outposts in 2016, militia boats have been deployed to the Spratlys in greater numbers and on a more constant basis than ever before. Militia have accompanied Chinese law enforcement at several oil and gas standoffs with Malaysia and Vietnam and have participated in mass deployments at targeted features; nearly 100 militia boats deployed near Philippine-occupied Thitu Island in 2018, and approximately 200 gathered at unoccupied Whitsun Reef in the spring of 2021.

THE MODERN MILITIA

- The militia as currently constituted in the South China Sea operates from a string of 10 ports in China's Guangdong and Hainan Provinces. Remote sensing data indicates that roughly 300 militia vessels are operating in the Spratly Islands on any given day.
- Militia ships fall into two major categories: professional militia vessels and commercial fishing

boats recruited into militia activity by subsidy programs and known as Spratly Backbone Fishing Vessels (SBFV). Professional vessels are generally built to more rigorous specifications that include explicitly military features, although even SBFVs are steel-hulled and measure at least 35 meters, with many measuring 55 meters or more. Both professional militia and SBFVs participate in large deployments aimed at asserting Chinese sovereignty, and both deny access to ships from foreign countries, but statements from Chinese officials suggest that more aggressive operations would first be entrusted to professional militia vessels.

- Militia activities violate several tenets of international law. Efforts to block the lawful activities of other claimant states within their exclusive economic zones are in violation of the United Nations Convention on the Law of the Sea and customary international law. Unsafe maneuvers intended to impede the operations of foreign ships by creating a risk of collision violate the International Maritime Organization's Regulations for Preventing Collisions at Sea, or COLREGS.

GOVERNMENT SUBSIDIES, FUNDING, AND SUPPORT

- A wide array of central and local government programs have been implemented in recent years to finance the militia. These include dual fuel subsidies for SBFVs operating in waters around the Spratly Islands, subsidies for the construction of fishing vessels (including SBFVs) targeting the Spratly waters, subsidies for construction of professional militia vessels, subsidies for the installation and renovation of equipment on board fishing vessels, construction loan interest subsidies, and training programs aimed at recruiting military veterans to work in the militia.
- Full-time maritime militia personnel working in state-owned fishing enterprises engaged in maritime militia operations receive salaries from those enterprises.
- Existing subsidy policies incentivize the operation of large vessels in disputed waters while providing no incentive to fish. Vessels at least 55 meters in length with an engine power of at least 1,200 kW operating in the Spratly Islands receive special fuel subsidies at a rate of CNY 24,175 (USD 3743.30) per day—a rate which well exceeds operational costs, allowing owners to easily profit by deploying to disputed waters without fishing at all.

ON-SHORE OWNERS

- The ownership structures of militia and likely militia vessels are simple: an examination of registered owners indicates that 90 percent of vessels analyzed are either directly owned by, or one entity removed from, their ultimate beneficial owner. This suggests owners are unconcerned with hiding their connection to the militia.
- Militia ownership appears to be concentrated in the localities from which they operate: of the 28 companies identified as directly owning militia vessels, 22 are based in Guangdong and 5 are based in Hainan.
- Despite geographic concentration, direct ownership of militia and likely militia vessels is only moderately centralized. The 96 vessels analyzed had a total of 64 direct owners, making for a ratio of roughly 1.5:1.
- Most militia and likely militia vessels' ownership networks were not found to be linked to the Chinese government.
- Professional militia vessels were underrepresented in ownership data, but they are likely both more centralized and more directly linked to government entities.

IDENTIFYING MILITIA VESSELS

- Direct identification in official Chinese sources or state media remains the most straightforward and conclusive indicator of militia activity. However, it is unlikely that most maritime militia vessels can be identified in this way. This makes behavior-based identification—informed by remote sensing data and traditional on-site reporting—the most promising avenue for continued identification.
- On-site photography and video, as well as ship-to-ship automatic identification system (AIS) data collection, offer the greatest potential to directly identify militia vessels and document their behavior. This both enhances the opportunities for follow-up research and creates an immediate impact by revealing the militia's size, scope, and activities to a broad audience in a convincing fashion.
- Commercial satellite imagery and AIS data play an important role in identifying and tracking militia deployments. These tools may prove even more effective in the future, given what has been learned about the militia's behavior and geographic distribution.
- Association with known militia vessels and ports are strong indicators that a vessel warrants further study, as are large subsidies indicating that a ship is an SBFV. Large vessels over 50 meters operating in disputed waters—especially understaffed vessels with less than 10 crew members—are also deserving of further scrutiny.
- By coupling continued reporting efforts from actors in the South China Sea with additional research using open-source Chinese-language materials and remote sensing data, the complete identification of the maritime militia is not only possible, but likely.

Introduction

China completed the construction of its artificial island outposts in the Spratly Islands in 2016. It finished most of the infrastructure on those outposts a year later. Since then, its focus in the South China Sea has shifted toward using those outposts to assert de facto control over peacetime activity across the South China Sea. A key component of this shift has been the expansion of China's maritime militia—a force that primarily consists of vessels ostensibly engaged in the business of commercial fishing, but whose true occupation is in achieving Chinese political and military objectives. Enabled by the proximity of China's outposts in the Spratly Islands, militia vessels join with Chinese law enforcement to contest Southeast Asian claimants' fishing and hydrocarbon activities in areas within its ambiguous nine-dash line claim. The militia's outward identity as a commercial fishing fleet affords Beijing a powerful degree of deniability, allowing this force to be used to apply pressure on other claimants with little cost.

The gray zone tactics employed by the militia pose a significant challenge to those interested in preventing coercion from interfering with a maritime order based on international law, or from influencing the management or peaceful settlement of the disputes. Competing claimants lack the maritime capacity to match the size and quantity of China's boats. Other powers that have an interest in preventing maritime coercion are often only equipped with the blunt instrument of naval power, the deployment of which against ostensible fishing vessels would be both escalatory and impractical.

In the interest of dissuading assertive behavior and lowering the risk of conflict in disputed waters, this report seeks to lift the shroud of uncertainty and deniability surrounding China's maritime militia. By providing a comprehensive overview of the militia, including extensive new findings on the government subsidies and ownership networks behind it, as well as a methodology for identifying militia vessels and a list of active militia vessels and owners, the findings presented here dispel any

doubt that the majority of Chinese fishing vessels operating in the disputed waters of the South China Sea are there to fulfill political rather than commercial objectives. It is the authors' hope that in making plain this reality, the report enables more effective responses to the militia's tactics and contributes to the peaceful and rules-based management of disputes.

This report is separated into five parts. Part I recounts the history of China's maritime militia from the 1970s to the present. Part II discusses key aspects of the militia as currently constituted, including its naming conventions and geographic distribution, categories of militia vessels, and status under international law. Part III examines in depth the regime of subsidies through which the Chinese government funds the militia and directs its operation. Part IV analyzes the ownership networks behind militia vessels. Part V presents a methodology for identifying militia vessels derived from the research conducted for this report and utilized to create Appendix A, a list of 122 militia vessels (with owners and ultimate beneficial owners as available) definitively identified during this project, as well as Appendix B, a list of 52 vessels highly likely to be militia.

Part I: The History of China's Maritime Militia in the South China Sea

China's maritime militia was not a major focus of Western scholarship before the shift in international attention toward the South China Sea over the last decade. The subsequent increase in scholarly attention, along with the militia's involvement in multiple recent incidents widely reported in international media, may create the false impression that the militia's existence itself is a recent phenomenon. In fact, the first use of fishing militias in the South China Sea by the People's Republic of China (PRC) dates back at least four decades, and the maritime militia has played a central role in asserting Chinese claims ever since. China's unprecedented efforts to gain control over waters within the nine-dash line over the last decade have led to a corresponding expansion in the size and activities of its militia forces.

The Militia's Development in the Late Twentieth Century

The first well-documented use of PRC fishing militias in the South China Sea was during the 1974 operation to seize the western Paracel Islands from the Republic of Vietnam. These nominally civilian fishing boats were the forerunners of today's professionalized Chinese maritime militia. Between October and December 1973, Chinese fishing vessels began operating around Vietnamese-held islands, raising flags and physically occupying at least one feature. In Guangxi Province's Beihai Port, People's Liberation Army (PLA) commandos boarded civilian fishing trawlers each day in December to train for the coming operation.¹

On January 14, 1974, a South Vietnamese navy frigate discovered two Chinese fishing vessels trying to set up a facility on unoccupied Robert Island. Vietnamese sources described the vessels as steel-hulled armed militia boats.² The Vietnamese drove them off and rushed a small group of commandos to the

scene. But when the commandos arrived on January 16, they found PRC forces already holding two unoccupied islands—Duncan and Drummond. Whether the Chinese forces were regular army or militia is unclear. Both sides reinforced their positions over the next day; according to Chinese sources, this included a group of Chinese militia troops from Woody Island in the eastern Paracels.³

Forty of these militia personnel were deposited on Drummond, Duncan, and Palm Islands on January 18, 1974. When Vietnamese commandos landed on Duncan and Palm the next morning, the militia opened fire, killing two of the commandos and injuring several others. This marked the real start of the “Battle of the Paracels” and the apparent end of the maritime militia’s active role in the fighting. The South Vietnamese ships retaliated by opening fire on their Chinese counterparts, starting a close-fought naval battle that the PLA ultimately won. Chinese commandos then assaulted and quickly overwhelmed the stranded Vietnamese forces on Robert, Money, and Pattle Islands.⁴

In 1984, China issued a new Military Service Law which remains in effect as of 2021. Article 36 of the law requires citizens to serve in the militia, without distinguishing land from maritime service.⁵ The work of Andrew Erickson, Conor Kennedy, and Ryan Martinson at the U.S. Naval War College is invaluable in understanding the formalization and growth of the maritime component of the militia in recent decades. Their work translating and publicizing Chinese-language media and online sources related to the militia shows that its existence has never been a secret in China.⁶

In 1985, a year after the new law took effect, the Chinese government approved the establishment of a new militia force in Tanmen Township on Hainan. The force made its first trip—involving five fishing boats—to Scarborough Shoal off the coast of Luzon, Philippines. They would return frequently in the years that followed.⁷ That same year, Beijing provided money for five other boats from Hainan to outfit themselves for a fishing trip to the Spratlys—the first documented case of Chinese fishing in the islands since before World War II. It is hard to draw a firm line between paid militia work and subsidized fishing activity during this period; they served the same purpose of asserting Chinese claims.

Chinese officials in the 1980s began to urge fishing boats to “maintain conspicuous presence” around the islands, pushing the slogan “Develop the Spratlys, fisheries go first.” China established its first bases in the Spratlys in 1988, and early the next year, state-owned Guangxi Beihai Fisheries General Company sent four trawlers to investigate fishing grounds around the islands. The boats began fishing west of the Spratlys over submerged banks claimed by Vietnam. Then in 1991, they moved south to operate over the Sunda Shelf, in the exclusive economic zone (EEZ) of Indonesia.⁸ The Chinese government started calling this area the “southwest fishing grounds.” It is still a prime target of subsidized Chinese fishing today.

In 1994, China’s Ministry of Agriculture published an *Atlas of Fishing Grounds in the South China Sea* showing 10 fishing grounds. These were clearly based on the nine-dash line, which has served as an official, but purposely undefined, illustration of China’s claims in the South China Sea since 1947.⁹ Beijing also introduced subsidies to cover fuel costs for boats that fished around the Spratlys that year—the start of a special subsidy regime for the South China Sea which would expand considerably over the years.¹⁰

The volume of Chinese fishing activity around Scarborough Shoal spiked in the late 1990s. This was likely a reaction to the Philippine Navy driving a group of nationalistic amateur radio operators from China off the shoal in 1997. By 1999, Chinese fishing boats were actively driving their Philippine

counterparts out of Scarborough; in one case, they collided with a Philippine Navy ship.¹¹ The timing and level of coordination of these activities strongly indicated state direction—a preview of the role the militia would play in provoking a major crisis at Scarborough in 2012.

A More Aggressive Militia in the 2000s

Over the course of the 2000s, the militia shifted its focus toward surveilling and harassing foreign military activity to which Beijing objected. In September 2002, for instance, a Chinese fishing vessel struck and damaged the USNS *Bowditch*'s towed sensor array while it operated in the Yellow Sea. Seven years later, the USNS *Victorious* was conducting surveillance in the Yellow Sea when it was harassed by fishing boats after being tailed by Chinese government vessels and planes. Two of the fishing boats maneuvered so dangerously that the *Victorious* was forced to make an emergency stop.¹² At the same time, its sister ship USNS *Impeccable* was confronted in the South China Sea by a mixed force of Chinese People's Liberation Army Navy (PLAN), coast guard, and militia vessels.

In March 2009, the *Impeccable* was surrounded by five Chinese vessels while operating 75 nautical miles south of Hainan. Three of the ships were government vessels, belonging to the PLAN, Fisheries Law Enforcement Command, and China Marine Surveillance respectively. The other two were fishing boats, which Erickson and Kennedy have since shown were part of the Sanya City militia in Hainan (a fact that was not known at the time).¹³ The government vessels maintained distance while the trawlers approached. One of the fishing boats crossed the *Impeccable*'s wake to try and damage the sonar array it was towing. Then the militia crew tried to grab the equipment with boat hooks. The *Impeccable* temporarily drove them off using a high-pressure water hose. Then it radioed for them to clear a path. Instead, the trawlers cut their engines in front of the *Impeccable* and dropped flotsam in its path. The operation was clearly being coordinated by the government vessels, as the China Marine Surveillance ship also moved into the path of the *Impeccable* while the PLAN ship loitered on its port side. The U.S. ship was forced to order an emergency all-stop to avoid a collision before finally being allowed to leave.¹⁴

The militia was soon enlisted in Beijing's escalating harassment of oil and gas operations in Southeast Asia. In May 2011, the Norwegian-flagged *Viking 2* was surveying an oil and gas block 150 nautical miles from the Vietnamese coast under contract with PetroVietnam and Japan's Idemitsu. Suddenly, an unidentified Chinese ship ran into the instruments it was towing, before being driven off by two boats providing security for the *Viking 2*. The survey vessel was harassed again two days later, and this time the aggressors were identified as a pair of Chinese fishing boats. They tried to damage its cables again but were stopped by the escort ships.¹⁵ The fishing boats were later reported to be members of the maritime militia.¹⁶

The timing and tactics pointed to government coordination. Just a few days earlier, another survey ship, the Vietnam-flagged *Binh Minh 02*, had been harassed by Chinese law enforcement vessels while operating farther north. One of the Chinese ships had intentionally run across and severed the *Binh Minh 02*'s exploration cables—the same maneuver that would soon be employed by the fishing boats targeting the *Viking 2*.¹⁷ The *Binh Minh 02* would be targeted again a year and a half later. Two Chinese fishing vessels, which Erickson later identified as militia, intentionally severed its exploration cables when it was operating just 40 nautical miles from the Vietnamese coast.¹⁸

When the slowly rising tension between China and the Philippines over Scarborough Shoal erupted into a full-scale crisis, the militia was again at the center of the action. A Philippine Navy patrol plane spotted eight Chinese fishing boats at the reef in April 2012. Manila dispatched the country's naval flagship, the *Gregorio del Pilar*, to have a look. It arrived two days later and sent a party to board and inspect the boats. In addition to fishing without permission in Philippines-claimed waters, they found that the ships were poaching endangered clams, sharks, and other species. But the fishing boats had sent out a distress call before they could be arrested, and two Chinese law enforcement vessels soon arrived.

The arrival of the vessels sparked a months-long standoff that eventually left China in control of Scarborough.¹⁹ Over the course of the crisis, Beijing deployed eight law enforcement vessels and dozens of fishing boats to the scene.²⁰ Chinese-language media analyzed by Kennedy and Erickson showed the latter to be members of the Tanmen militia.²¹ In acknowledgment of their service, President Xi Jinping visited the Tanmen militia in 2013 and hailed them as a model for others to follow.²² That same year, China's defense white paper called for strengthening the maritime militia's role in defending China's sovereignty claims.²³ In retrospect, it is clear that 2013 marked a watershed for the militia, as the new Xi government began pouring money into its expansion and professionalization.

Escalating Deployments under Xi

The first sign that the militia under Xi was becoming the vanguard of a more assertive Chinese strategy in the South China Sea emerged in May 2014. That month, Vietnam spotted the *Haiyang Shiyou 981* oil rig and three service ships sailing past the Paracel Islands.²⁴ The rig parked 120 nautical miles east of Vietnam's Ly Son Island and 180 nautical miles south of Hainan, in what were clearly disputed waters.²⁵ China's Maritime Safety Administration announced that the oil rig would conduct exploratory drilling in the area until August 15.²⁶ Vietnam immediately dispatched six law enforcement vessels to prevent the rig from operating.²⁷ Beijing responded with a mixed force of 40 PLAN, China Coast Guard (CCG), and militia vessels to protect it. They formed up in concentric rings, with the PLAN closest to the *Haiyang Shiyou 981* and the militia farthest out, where it would have the most contact with the Vietnamese.

No shots were fired, but there was plenty of violence from both sides, with intentional ramming and the use of high-pressure water hoses. By the middle of May 2014, Hanoi claimed that China had 130 vessels on the scene; Beijing said Vietnam had 60. But the Vietnamese, in addition to being outnumbered, were terribly outmatched. The CCG ships were larger and better armed than their Vietnamese counterparts. And China's large, steel-hulled militia vessels, which made up the bulk of those involved in the standoff, completely dwarfed Vietnam's own wooden militia boats. A Vietnamese fishing boat was eventually rammed and sunk, though the crew was rescued safely.²⁸

As the *Haiyang Shiyou 981* oil rig standoff was playing out, the world was also presented with evidence of the scale of China's artificial island building. Dredgers had first shown up at Johnson Reef in December 2013, and by the fall of 2015 they had already created over 3,200 acres of new land across China's outposts in the Spratly Islands. The largest of the new bases, built on Fiery Cross, Subi, and Mischief Reefs, each sported a 3,000-meter airstrip and sheltered ports. At Subi and Mischief, the entire lagoon at each reef was transformed into a huge port. By the end of 2017, Beijing largely completed the construction of military infrastructure at both these and its smaller facilities, as well as considerable upgrades in the Paracel Islands.²⁹



Chinese fishing vessels massed at Subi Reef, August 12, 2018

The ability to forward-deploy CCG and militia boats to China's outposts, 800 miles south of Hainan, radically changed the peacetime balance of forces in the South China Sea. Significant numbers of PLAN and CCG ships began regularly calling at Fiery Cross, Subi, and Mischief.³⁰ As a result, the number of maritime militia vessels consistently sailing to the area exploded. A six-month remote-sensing study by CSIS and Vulcan's Skylight Maritime Initiative in 2018 revealed that Chinese fishing vessels—the majority of them likely maritime militia—had become the largest fleet of ships operating in the Spratlys. The vessels clustered mostly in the huge harbors at Mischief and Subi Reefs. In 2017, while infrastructure at the islands was still being completed, there were never more than 100 boats at a time in those harbors; by August 2018, there were about 300. They averaged over 50 meters and about 550 tons—much larger than the fishing vessels of neighboring states, and a testament to the rapid success of the modernization effort.³¹

Later that year, China launched its largest ever deployment of militia vessels, signaling an important change in the deployment pattern of the militia force. It started in December 2018 when Manila began to build a beaching ramp and to repair its runway on Thitu Island, which sits just over 12 nautical miles from Subi Reef. In response, dozens of Chinese militia vessels left Subi and dropped anchor between 2 and 5.5 nautical miles from Thitu. The initial deployment peaked at 95 ships around December 20, 2018. None of them showed any signs of fishing activity.³² The massing of militia boats around Thitu has now continued for almost three years, averaging between 30 and 40 vessels for most of that time, but just 10 to 20 on most days in 2021.³³



Chinese militia vessels massed near Thitu Island, December 12, 2018

Recent Activity

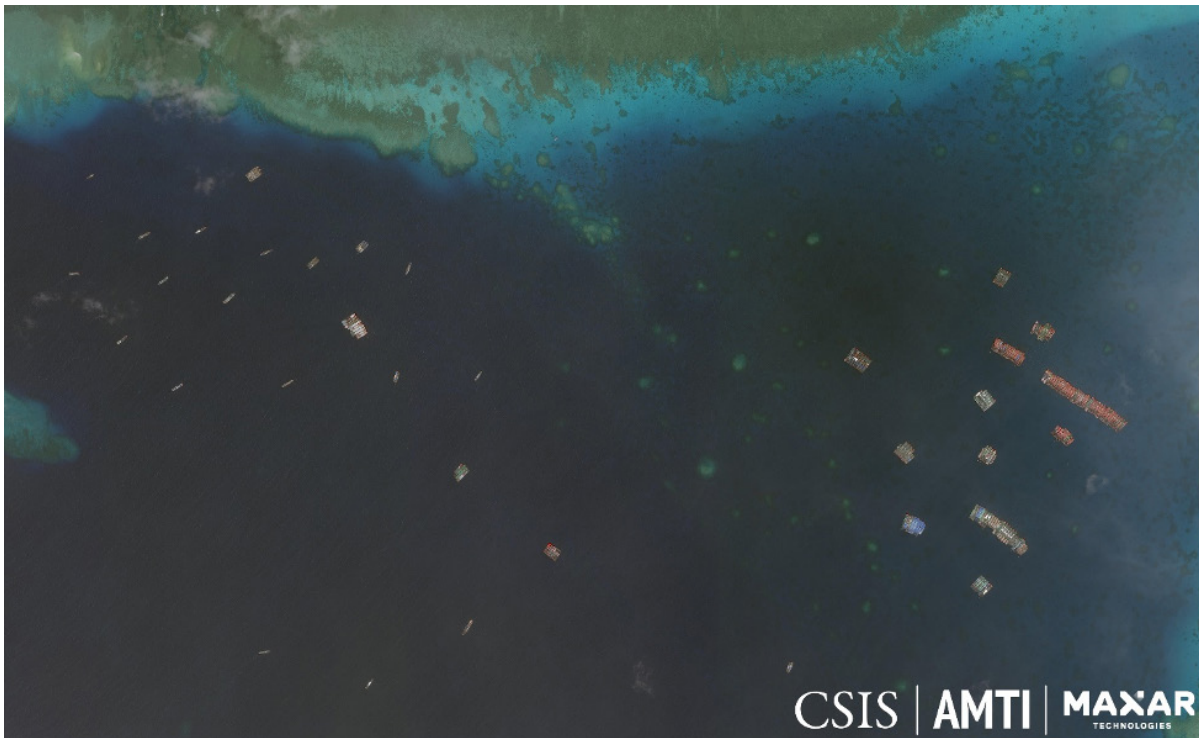
The display of force around Thitu has been the most sustained militia deployment, but not the only one. Chinese fishing vessels regularly cluster around the outposts of other claimants in the Spratlys without engaging in much fishing, if any. In March and April 2019, militia boats were regularly spotted anchoring as close as half a nautical mile from Philippine-held Loaita Island and Loaita Cay.³⁴ AMTI's research with Vulcan also showed Chinese militia vessels frequently gathering near Vietnamese outposts, especially those in the Union Banks section of the Spratlys. Of these, the nine vessels of the *Yue Mao Bin Yu* fleet were especially visible, operating near the Chinese outposts at Hughes and Johnson Reefs and approaching provocatively close to the nearby Vietnamese facilities at Collins, Lansdowne, and Grierson Reefs, and Sin Cowe Island.³⁵ It now appears that those vessels were just the vanguard of a growing Chinese militia focus on Union Banks.

To date, violence between China's maritime militia and other actors had been limited to dangerous maneuvering and the occasional shouldering or ramming. But in June 2019, an incident nearly led to the deaths of a Filipino fishing crew. The *Yue Mao Bin Yu* 42212 collided with and sunk the F/B *Gem-Ver* while it was anchored at night at Reed Bank. After the ramming, the *Yue Mao Bin Yu* 42212 reportedly turned off its lights and fled the scene, leaving the Filipino fishers to drown. They were luckily rescued by a passing Vietnamese boat. It is so far impossible to prove definitively that the *Yue Mao Bin Yu* 42212 is a militia vessel, but an investigation by AMTI and C4ADS uncovered considerable evidence to that effect.³⁶ The findings of this report only strengthen that case.

The maritime militia has also taken part in recent oil and gas standoffs. It joined the CCG in escorting a Chinese state-owned survey vessel, the *Haiyang Dizhi 8*, during separate months-long operations off Vietnam and Malaysia in late 2019 and early 2020. The exact number of vessels in those episodes is unclear, but sources reported that between 40 and 80 Chinese boats took part; some of those were CCG and PLAN, but most were likely maritime militia vessels.³⁷

The recent history of the militia suggests that its deployment pattern in the Spratlys has gone through several evolutions. Between late 2017 and late 2018, the number of likely militia vessels in the Spratlys rose to about 300 at any given time, most of which rode at anchor for weeks at a time in the harbors at Subi and Mischief. These fleets started dispersing more widely after December 2018, with the largest concentration being around Thitu. In early 2020, militia began congregating in larger numbers around Union Banks, particularly at Whitsun Reef. Those numbers reached 100 in May 2020, dipped again, and then approached 200 by the end of the year. The Whitsun Reef standoff is explored in greater detail later in this report.

Since it tapered off in April 2021, the militia presence in the Spratlys has grown more fluid but no smaller. In April, most of the vessels from Whitsun moved to nearby Hughes Reef, where their numbers peaked at over 150. A substantial contingent also headed to Tizard Banks farther north, which include China's base on Gaven Reefs and Vietnam's on Namyit Island. In May 2021, nearly all the ships from Hughes also moved to Tizard Banks, bringing the number gathered there to over 230. A month later, most of those moved back down to Union Banks, staying around Hughes Reef. By mid-June 2021, there were almost 240 boats around Hughes and 70 still at Gaven.³⁸ The big picture is that there have been about 300 maritime militia vessels deployed in large groups around



Chinese militia vessels massed at Whitsun Reef, March 25, 2021

the Spratly Islands since August 2018, relying on China's artificial islands for logistics support but no longer cloistering themselves within those harbors.

Part II: The Modern Militia

Known Militia Ports and Fleets

The maritime militia as currently constituted in the South China Sea operates from a string of ports in China's Guangdong and Hainan Provinces. Vessels identified with high confidence as being part of the militia in this report operate mainly from one of 10 ports—five in Guangdong and five in Hainan. The names of the vessels themselves reveal their homeports in the case of the Guangdong-based militia units but not necessarily for those from Hainan.

Under Chinese law, fishing vessels must be named as follows: a character signifying its province, one or two characters indicating its homeport, the character 渔 (*yu*) meaning “fish,” and then its five-digit hull number. The names of all fishing boats from Guangdong begin with 粤 (*Yue*), a classical name for the province. All those from Hainan similarly start with 琼 (*Qiong*). Vessels from other parts of the country follow the same pattern, such as 桂 (*Gui*) for Guangxi and 闽 (*Min*) for Fujian. Then comes the reference to homeport. For the Guangdong militia fleets, those include:

- 阳西 (*Yangxi*), which refers to Yangxi County under the administration of the prefecture-level city of Yangjiang. Vessels from this fleet operate from Puyuzhou Bay in Yangjiang.
- 湛 (*Zhan*), referring to the prefecture-level city of Zhanjiang. This fleet operates from Zhanjiang Port. Vessels with 霞 (*Xia*), 廉 (*Lian*), and 雷 (*Lei*), referring to Zhanjiang's Xiashan District and the county-level cities of Lianjiang and Leizhou, also operate from Zhanjiang Port.
- 茂滨 (*Mao Bin*), referring to the Maoming Binhai New Area, a subdivision of Dianbai District in the prefecture-level city of Maoming. Prior to the New Area's establishment in 2012, vessels in this fleet were named 电 (*Dian*) for “Dianbai.”

- 台 (*Tai*), referring to Taishan, a city under the administration of the prefecture-level city of Jiangmen. This fleet operates out from Shadi Bay.
- 新会 (*Xinhui*), referring to Xinhui District in Jiangmen where this fleet is based.

For the Hainan fleets, things have become less clear in recent years. Historically, as Erickson and Kennedy have shown, a handful of ports in the province accounted for most major militia deployments in the South China Sea. The oldest was likely the fleet operating from Baimajiang Harbor in the prefecture-level city of Danzhou. At least several ships from that port were involved in the 1974 Battle of the Paracels.³⁹ Next was the Tanmen militia, established in the eponymous town under the administration of Qionghai in 1985.⁴⁰ Then came the Sanya militia, based in the southern city's Yazhou District and located just a few miles from the Yulin Naval Base. This was the militia fleet tasked with harassing the *Impeccable* in 2009.

In 2012, China announced the establishment of a new prefectural-level city, Sansha, on Woody Island in the Paracels. The next year, the Sansha City militia was officially inaugurated. This coincided with the larger drive to expand and professionalize militia units in the South China Sea. In many ways, the Sansha militia has been at the forefront of those efforts. It is the only militia in the South China Sea that is explicitly managed by a state-owned company, Sansha Fisheries Development Co. Ltd. (三沙市渔业发展有限公司 *sansha shi yuye fazhan youxian gongsi*, or simply 三沙渔业公司 *sansha yuye gongsi*; SFDC), established in 2015. Zachary Haver, formerly of Radio Free Asia, has done extensive research on the size and operations of the Sansha militia using open-source Chinese documents and Automatic Identification System (AIS) tracking. One point uncovered in his research is that the Sansha militia doesn't operate entirely, or even primarily, from Sansha itself. Rather, SFDC has acquired long-term rights to space in the harbors at Baimajiang and Yazhou, from which the Danzhou and Sanya militias have long operated, along with Qinglan Harbor in the city of Wenchang. AIS suggests that the Sansha militia spends more time operating from these harbors than from Woody Island.⁴¹

This might explain why a significant portion of the Hainan-based militia vessels identified with high confidence in this report bear names indicating they come from Sansha (三沙): it seems likely that many vessels of the Danzhou and Sanya fleets may have been supplanted by or renamed as part of the Sansha fleet beginning around 2015. That said, there are still some ships identified in this report bearing the name of Sanya (三亚). The current size and status of the Tanmen militia is also unclear. Most of its documented activity predates the era of militia professionalization under Xi Jinping, which this report uses to divide current from historical militia activity. In such historical reports, Tanmen militia boats used the simple naming convention 琼海 (*Qionghai*), for the city to which Tanmen village belongs. Under current Chinese law, any Tanmen vessels still active should be named 琼琼海渔 (*Qiong Qionghai Yu*, the first "Qiong" signifying Hainan Province). Only one such vessel was positively identified with high confidence in this report.

Professional Militia versus Spratly Backbone Fishing Vessels

Chinese maritime militia vessels operating in the South China Sea mostly fall into two categories: professional Maritime Militia Fishing Vessels (海上民兵渔船 *haishang minbing yuchuan*; MMFV) and Spratly Backbone Fishing Vessels (南沙骨干渔船 *nansha guban yuchuan*; SBFV). There is some evidence of vessels not falling into either category participating in recent militia deployments, but the vast majority of those identified in this report do. MMFVs are fishing vessels that are specially designed,

constructed or renovated, and operated using funds dedicated to maritime militia affairs. SBFVs, on the other hand, are a subset of domestic fishing vessels that meet certain minimum requirements of length, tonnage, and power that operate in the Spratly Islands to fulfill political goals on behalf of the Chinese government. MMFVs and SBFVs often function identically, asserting China's sovereignty in disputed waters and (especially in recent years) grouping in large numbers and denying the fishing boats of other South China Sea claimants access to fishing grounds and other reefs.

There are, however, differences in the roles expected of MMFVs and SBFVs. In 2017, Taishan's Municipal Bureau of Oceans and Fisheries met with SBFV owners to remind them of their "political responsibilities" (政治责任 *zhengzhi zeren*) to operate in "specially designated waters" (特定水域 *teding shuixu*) to "defend national maritime rights and interests and declare national sovereignty."⁴² In the same meeting, however, the SBFVs were also instructed to avoid creating any major foreign incidents, suggesting that more aggressive actions such as ramming of other fishing vessels, interfering with the navigation of foreign warships, or other types of physical confrontation are primarily entrusted to the professional MMFVs.

This greater responsibility is consistent with the design of MMFVs: they include features such as weapons storage facilities and large water cannons.⁴³ Nevertheless, SBFVs do maintain some latent capacity to integrate with military operations. As disclosed by an employment contract for SBFVs owned by a fishery professional cooperative (渔业专业合作社 *yuye zhuanaye hezuoshe*) in Guangdong Province, SBFVs are required to operate and dock in special waters all year, must participate in training and sovereignty defense, and are required to provide assistance to the PLA in combat when needed.⁴⁴ Additionally, crew members are strictly prohibited from taking photos of the ports in which they dock at China's outposts in the Spratly Islands, or of the vessel's internal structure, without prior permission from the captain. SBFVs qualify for different types of government support compared to MMFVs, as detailed in Part III of this report.

This distinction between officially named maritime militia vessels and SBFVs lends the latter a greater degree of deniability. But given their explicit political responsibilities and role in defending China's national sovereignty, along with their charge to assist the PLA in combat if required, SBFVs clearly meet any reasonable definition of a militia force.

Legal Status

Over the last decade, the maritime militia has emerged as the frontline actor in most of China's efforts to assert control over disputed waters in the South China Sea and to block the lawful activities of its neighbors in their EEZs. To do so, militia vessels operate in ways that are clearly in violation of international maritime law. These vessels, along with the CCG, purposely maneuver unsafely and create risks of collision to coerce foreign ships. And they do so with the concurrence of Chinese authorities, who are often on the scene of such incidents and make no move to rein in the militia's dangerous behavior. Much of this amounts to a clear violation of the International Maritime Organization's Regulations for Preventing Collisions at Sea, or COLREGS.

The maritime militia regularly interferes with the fishing, seabed exploitation, and other lawful activities of Southeast Asian states within their own EEZs and continental shelves, in violation of the United Nations Convention on the Law of the Sea and customary international law. This behavior

also violates those articles within the convention which reiterate the responsibility of all flag states to ensure that their vessels maintain safety at sea and avoid collisions.

As detailed in Part III of this report, there is no longer any question about whether the militia is organized, funded, and directed by the government of China. This makes Beijing legally responsible for its behavior. China's domestic legislation, the public statements of PRC officials and state media, and the operational cooperation of government and militia vessels all make clear that the state endorses and facilitates the militia's activity.

Should the maritime militia step over the line and use lethal force against another claimant or support Chinese government forces in future military operations, it would raise additional questions about its legal status under the laws of war. In some cases, maritime militia personnel wear uniforms, fall under the direct command and control of the PLAN or CCG during operations, and otherwise fulfill the definition of armed combatants under the Geneva Conventions and subsequent jurisprudence. But in most cases, their status as civilians or combatants is purposely obfuscated, placing them in a legal gray zone. Whether they should legally be treated as armed combatants by foreign military forces, including whether they would be eligible for prisoner of war status in the case of hostilities, is a matter of some debate.⁴⁵

Part III: Government Subsidies, Funding, and Support

Open-source research into publicly available Chinese-language media and official documents and statements reveals a wide array of central and local government programs implemented in recent years to finance the maritime militia. These programs, which support the creation, training, and operation of maritime militia forces, conclusively demonstrate that the majority of Chinese fishing vessels in disputed areas of the South China Sea do not operate as independent commercial actors, but instead as paid agents of the Chinese government obligated to help fulfill its political and national security objectives.

China's central government provides at least four types of subsidies for fishing vessels that are involved in the maritime militia: dual fuel subsidies for SBFVs operating in waters around the Spratly Islands; subsidies for the construction of fishing vessels (including SBFVs) targeting Spratly waters; subsidies for the construction of professional MMFVs; and subsidies for the installation and renovation of communication, navigation, and safety equipment on board fishing vessels. China also provides militia operation expenditures (民兵事业费 *minbing shiye fei*) for maritime militia training and task implementation, as well as subsidies for maritime militia personnel. Full-time maritime militia personnel working in state-owned fishing enterprises engaged in maritime militia operations receive salaries from those enterprises. Provincial and local governments may also provide subsidies, though Guangdong, Guangxi, and Hainan are the only three provinces from which registered marine fishing vessels are allowed to operate in the Spratly waters.⁴⁶ In 2020, the government launched a program to train PLA veterans as captains and crew of fishing enterprises instead of directly providing capital subsidies to the enterprises. The maritime militia has also been prioritized for job placement.

Double Fuel Subsidies for Fishing Vessels in Spratly Waters

In 2015, the Ministry of Agriculture (MOA) released a fuel subsidy policy implementation plan announcing that fishing vessels operating in “specially designated waters” would receive fuel subsidies at specially designated rates.⁴⁷ Furthermore, when operating south of 12 degrees north latitude in the South China Sea (including in the Spratlys), fishing vessels receive fuel subsidies at these special rates along with the “regular” rates provided to ordinary fishing vessels operating in non-specially designated waters—meaning that they effectively receive double fuel subsidies.

The special fuel subsidy rate for ships fishing in the Spratlys is high, especially for the large vessels that qualify to operate as SBFVs. SBFVs must measure at least 35 meters in length and weigh at least 200 tons, but subsidy rates incentivize the operation of even larger ships.⁴⁸ According to government policy, trawlers and purse seiners measuring at least 55 meters in length with engine power of at least 1,200 kW receive special fuel subsidies at a rate of CNY 24,175 (USD 3,743.30) per day per vessel.⁴⁹ This figure was confirmed by other sources, including one news report that stated that Lianjiang City, Guangdong Province, was home to 20 SBFVs, including 10 large vessels—each measuring above 55 meters with engine power above 1,200 kW—that qualified for the special fuel subsidy rate of CNY 24,000 per day.⁵⁰ This dual provision of special fuel subsidies at high rates in addition to regular fuel subsidies would promote the use of large and powerful vessels by fishing enterprises in disputed waters.

In addition to fuel subsidies, Chinese government sources provide a one-time bonus (一次性奖励 *yici xing jiangli*) each year for fishing vessels operating in specially designated waters. This policy is mostly absent from public government documents but was acknowledged in the media by fishermen from Hainan Province in 2012.⁵¹ The interviewees revealed that any fishing vessel that visited or operated in the Spratly waters or at Scarborough Shoal in 2011 received a one-time bonus of CNY 35,000 (USD 5,419.57), in addition to fuel subsidies. They also said this bonus amount can vary from year to year, suggesting the policy predated 2011. The existence of this bonus was recently acknowledged by the municipal governments of Beihai and Qinzhou in Guangxi as well as Danzhou in Hainan.⁵² The bonus is mentioned alongside reporting of fuel subsidies, though the amount of the bonus is not included.

Table 1. Maximum Allowable Daily Fuel Subsidies (in CNY) for Fishing Vessels Operating in Specially Designated Waters, 2015–2019⁵³

VESSEL LENGTH (METERS) \ FISHING TYPE	拖网 TRAWLER	围网 PURSE SEINER	刺网 SPLINTER NET	钓具 HOOK GEAR	撑开掩网掩罩 LIGHT-FALLING NET	OTHER
12 ≤ L < 14	1,094	729	-	475	-	475
14 ≤ L < 16 (95 kW and above)	1,580	810	-	513	1,080	513
16 ≤ L < 18 (105 kW and above)	1,823	1,053	-	568	1,621	568
18 ≤ L < 20 (115 kW and above)	1,945	1,215	787	715	1,729	715

20 ≤ L < 24 (130 kW and above)	2,309	1,540	989	762	2,053	762
24 ≤ L < 30 (180 kW and above)	3,403	2,350	1,469	1,077	2,377	1,077
30 ≤ L < 35 (220 kW and above)	4,376	2,431	1,889	1,988	3,133	1,988
35 ≤ L < 40 (260 kW and above)	6,077	2,593	2,470	2,161	3,457	2,161
40 ≤ L < 45 (360 kW and above)	7,293	3,403	2,891	2,485	4,646	2,485
45 ≤ L < 50 (450–1,200 kW)	8,508	4,214	3,558	2,701	5,726	2,701
50 ≤ L < 55 (500 kW–1,200 kW)	-	4,700	-	3,241	-	3,241
55 ≤ L (600 kW–1,200 kW)	-	6,483	-	-	-	-
55 ≤ L (1,200 kW and above)	24,175	24,175	-	10,804	19,853	10,804

Source: 川岛新闻 [Chuan Dao News].

Subsidies for the Construction of Spratly Fishing Vessels

In 2014, the secretary of the Communist Party of China Hainan Provincial Committee touted a plan for Hainan Province to absorb into the maritime militia 200 large (high-tonnage) fishing vessels that were already being built or planned.⁵⁴ This strategy allows the government to convert regular fishing boats into maritime militia vessels. It also lets the government make use of existing subsidy policies for the construction of marine fishing vessels when expanding the maritime militia.

There is evidence that the allocation of subsidies for the construction or renovation of domestic marine fishing vessels may be more influenced by the Chinese military now than in years past. Chinese military stakeholders have advocated for the inclusion of funding for maritime militia fishing vessels in existing programs for the construction and renovation of government fishing vessels.⁵⁵ In 2016, the Hainan provincial military command (省军区 *sheng junqu*) and relevant government departments jointly promulgated a 13th Five-Year Plan for the building of the maritime militia, though it has not been released to the public.⁵⁶ The plan reportedly entails a systematic design for the construction, management, and use of maritime militia fishing vessels. Military stakeholders in Hainan Province may thus be making their preferred specifications for militia vessels known ahead of time to ensure that newly constructed fishing fleets are suitable for conversion.

Among all domestic marine fishing vessels, SBFVs are preferable for conversion, mainly because these vessels are designed to be physically capable of operating in the South China Sea at long distances from the coastline (and in disputed waters, more generally). Additionally, marine fishing vessels that do not have a Spratly fishing permit must remain in port during China's annual fishing moratorium in the northern South China Sea. But SBFVs are permitted to fish below the 12th degree of latitude that marks the limit of the moratorium, giving them flexibility to continue operating and conduct maritime militia tasks even during this time.⁵⁷ SBFVs, as high-tonnage vessels, can better resist high winds and waves compared to other domestic marine fishing vessels. They also have better communications systems, further enhanced by government efforts to develop civil-military

communications compatibility.⁵⁸

Renovation of the SBFVs, along with other marine fishing vessels, is supported by subsidies from the central government.⁵⁹ These subsidies come in the form of a special transfer payment (中央财政转移地方专项资金 *zhongyang caizheng zhuanyi difang zhaunxiang zijin*; STP). STPs for the fishing industry cover nine types of projects:

1. Reduction and conversion of marine fishing vessels
2. Construction of artificial reefs
3. Wind- and wave-resistant deep-water aquaculture bellows
4. Renovation of domestic fishing vessels
5. Public facilities such as fishing harbors and beacons
6. Construction of navigation and safety equipment for marine fishing vessels
7. Renovation of distant-water fishing vessels
8. Construction of distant-water fishing bases
9. Exploitation of international fishery resources⁶⁰

At the central-government level, these programs are included in an initiative called the Central Budget Vessel Decommissioning and Standardization Subsidy (中央财政船舶报废拆解和船型标准化补贴 *zhongyang caizheng chuanbo caofei chai jiehe chuanxing biao zhunhua butie*).⁶¹ Despite the name, STPs provided through this program support more than just vessel decommissioning and standardization, and the program is sometimes called the “STP for the Adjustment of the Fisheries Fuel Subsidies Policy” (渔业油价补贴政策调整专项转移支付 *yuye youjia butie zhengce tiaozheng zhuanxiang zhuanyi zhifu*).⁶² Provincial governments submit applications for STPs to the Ministry of Agriculture and Rural Affairs (MARA) and the Ministry of Finance (MOF) for review and approval. Once approved, the central government transfers funds to the provincial governments, which further allocate the funds to stakeholders (such as an enterprise or a lower-level government agency) for implementation.

Subsidies for the renovation of SBFVs (and other marine fishing vessels) apply to two types of vessel-construction materials: steel and fiberglass.⁶³ Maritime militia fishing vessels are usually constructed of steel, given their potential role in conflict with other vessels in disputed waters. Fiberglass vessels, made with environmentally friendly and fuel-saving goals in mind, are not well suited to militia work.

The central government subsidies for steel-hulled marine fishing vessels (including SBFVs) fall into 14 categories according to vessel length (see table below). For each vessel, the central government subsidies are not allowed to exceed 30 percent of the average cost of building or renovating a vessel in that category, and each category has a maximum allowable subsidy rate. Of the 14 categories, the maximum allowable subsidy rate is CNY 4 million (USD 619,367.60) per vessel, which applies to vessels measuring 55 meters or more in length and containing onboard freezing facilities. Onboard installation of freezing facilities is required for steel vessels

measuring 40 meters or more, if they wish to receive central government subsidies. This policy applies only to vessels for which construction started after October 1, 2015, and was completed before December 31, 2019, and to which a vessel operation permit has been issued by December 31, 2019. There will likely be an update to the policy in accordance with the 14th Five-Year Plan implementation process.

Table 2. Maximum Allowable Central Government Subsidies for Renovation of a Single Steel Fishing Vessel⁶⁴

LENGTH L (IN METERS)	SUBSIDIES (IN CNY) PER VESSEL
< 12	50,000
12 ≤ L < 15	100,000
15 ≤ L < 18	150,000
18 ≤ L < 21	200,000
21 ≤ L < 24	250,000
24 ≤ L < 27	400,000
27 ≤ L < 30	600,000
30 ≤ L < 33	750,000 ^a 900,000 ^b
33 ≤ L < 36	900,000 ^a 1,100,000 ^b
36 ≤ L < 40	1,200,000 ^a 1,600,000 ^b
40 ≤ L < 45	0 ^a 2,500,000 ^b
45 ≤ L < 50	0 ^a 3,000,000 ^b
50 ≤ L < 55	0 ^a 3,500,000 ^b
55 ≤ L	0 ^a 4,000,000 ^b

^aNot equipped with freezing facilities; ^bequipped with freezing facilities

Source: 农业部办公厅 [MOA General Office].

In 2012—the same year Sansha City was established on Woody Island—the MOA began to build or renovate 500 SBFVs.⁶⁵ The town of Tanmen was allotted nearly 50 SBFVs, accounting for a large portion of the provincial quota of 200 for Hainan Province.⁶⁶ SBFVs have “political responsibilities” to operate in “specially designated waters” to “defend national maritime rights and interests and declare national sovereignty.”⁶⁷

Fishing vessels other than SBFVs may also participate in maritime militia activities. For example, *Gui Bei Yu* 88603 and *Gui Bei Yu* 39198, two fishing vessels registered to Beihai, Guangxi Province, took part

in the militia deployment at Whitsun Reef in 2021. In 2018 and 2020, they were reported as not being SBFVs but as being newly constructed to replace a number of small, low-power vessels that were being decommissioned and demolished. Their construction was supported by subsidies.⁶⁸

Subsidies for the construction of non-SBFVs to be involved in maritime militia activities may be high in the provinces of Guangdong, Guangxi, and especially Hainan. In 2012, Sansha City announced a plan to build 1,118 fishing vessels at a cost of CNY 9.624 billion (USD 1.49 billion), of which CNY 360 million (USD 55.7 million) had already been allocated from the central government.⁶⁹

The provincial and local governments may provide supplementary subsidies in addition to the central government ones. These may be in the form of direct subsidies that are set in proportion to those of the central government, but also may be in the form of indirect subsidies, for instance as a means to offset loan interest.

Direct Subsidies

The government of Nan'ao (a county under the administration of Shantou City, Guangdong Province) provides supplementary subsidies that match up to 50 percent of the STP amount provided by the central government for any SBFV (regardless of length), and 30 percent of the central government STP subsidy for any regular fishing vessel measuring 30 meters and above in length.⁷⁰

The 50 percent and 30 percent ratios are applicable throughout Guangdong Province, as they are explicitly required in a Guangdong provincial plan for domestic fishery fuel subsidies for 2015–2019.⁷¹ The supplementary subsidies are provided through general transfer payments (GTPs), which are lump-sum payments from the central government to each province. The provincial government retains a portion of the payment for use by provincial-level projects and allocates the remaining amount to local governments for use at their discretion.

It is possible to use these ratios to determine whether a given fishing vessel is an SBFV. For example, an examination of the subsidies for Nan'ao county domestic fishing vessels in 2020 indicates that the vessels received both central and local subsidies, but that the local-to-central subsidy ratios were only 0.3, suggesting that none of the vessels are SBFVs.⁷²

In addition to local county subsidies, provincial subsidies may also be provided. Subsidies of this sort are provided by Hainan Province, for instance, as indicated by the government response to a proposal, made after Xi Jinping's 2013 visit to Tanmen, that Hainan Province should provide subsidies for Tanmen fishermen to build large fishing vessels.⁷³ As detailed in the response, Tanmen fishermen receive more than CNY 300,000 (USD 46,452.57) per large steel vessel from the provincial government, in addition to existing local subsidies and central subsidies.

However, requirements for direct provincial and local subsidies vary across provinces. Hainan only requires provincial subsidies to match central subsidies (unlike Guangdong), and the provincial-to-central ratio is low, ranging from 0.075 to 0.2 depending on the fishing method and target species for SBFVs.⁷⁴ In Guangxi, provincial and local subsidies are not explicitly mentioned at all in its plan for domestic fisheries fuel subsidies for 2015–2019.⁷⁵

Loan-Interest Subsidies

Sanya City in Hainan provides subsidies to offset interest on loans for the purpose of renovating SBFVs.⁷⁶ The municipal government will pay for 70 percent of the annual loan interest over a maximum period of five years for a maximum loan of CNY 4 million (USD 619,367.60) per vessel, while the cumulative subsidies are not allowed to exceed CNY 800,000 (USD 123,873.52) per vessel.

As disclosed in the policy, the limits are set in accordance with China Development Bank interest rate standards for agricultural project loans, which suggests that this bank may play a role in providing loans to renovate SBFVs. As a policy bank, China Development Bank has been involved in shipbuilding financing as a significant area of business since 2011.⁷⁷ China Development Bank has also been involved in shipbuilding financing in Sanya since 2003, through a special financing mode in which Sanya State-owned Assets Management Company (SSAMC; 三亚市国有资产管理有限公司 *sanya shi guoyou zichan guanli youxian gongsi*, or 三亚国资公司 *sanya guozi gongsi*) takes out loans from China Development Bank for building fishing vessels, which can be rented by fishermen or fishing enterprises, with ownership ultimately transferred to them upon repayment of SSAMC loans and interest.⁷⁸

Subsidies for the Construction of Professional Maritime Militia Fishing Vessels

Professional MMFVs are fishing vessels that are specially designed, constructed, renovated, and operated using funds dedicated to maritime militia affairs. Mention of such funds is scarce in public reports, except for an acknowledgment made in 2014 by the secretary of the Communist Party of China Hainan Provincial Committee that Hainan has a “special fund for the construction of MMFVs” (民兵渔船建造专项资金 *minbing yuchuan jianzao zhuanxiang zijin*).⁷⁹ This funding is unique because it is “supported with national financing.”⁸⁰ The fact that funding comes from the central government suggests a high importance placed on the construction of MMFVs.

China has a program for “militia operations funding” (民兵事业费 *minbing shiye fei*), which is regulated by the PRC Militia Operations Ordinance (中华人民共和国民兵工作条例 *zhonghua renmin gongheguo minbing gongzuo tiaoli*).⁸¹ The General Staff Department of the PLA is in charge of planning and development of militia armaments, while regional, provincial, sub-provincial, and municipal or prefecture-level military commands and departments allocate and use militia armaments.

The fact that this funding was mentioned in 2014—shortly after Xi Jinping’s 2013 visit to Tanmen’s maritime militia companies (海上民兵连 *haishang minbing lian*, “company” as in a military unit)—suggests that the town’s maritime militia continues to benefit from such funding. A government report disclosed that Hainan Province provided more than CNY 40 million (USD 6.19 million) to build four high-tonnage fishing vessels for Tanmen maritime militia companies in 2015, or about CNY 10 million (USD 1.55 million) per vessel.⁸²

It is possible to further estimate the total provincial subsidies for the construction and renovation of professional MMFVs in Hainan. As disclosed by the 2013 Hainan Yearbook, the province was home to 28 maritime militia companies in 2012, with 2,328 personnel and 186 vessels.⁸³ Assuming that all these vessels have been upgraded to large-scale steel vessels—which is very likely, in view of the fact that Hainan has been vigorously expanding and upgrading its maritime militia forces since Xi

Jinping's 2013 visit to Tanmen—it can be estimated that provincial subsidies for renovation of these 186 vessels totaled about CNY 1.86 billion (USD 288 million). This is a low estimate, and Hainan Province likely spends far more than this in total subsidies to upgrade militia forces; Sansha City's MMFVs, for instance, weigh at least 1,000 tons each, and are thus more expensive to upgrade than the Tanmen MMFVs.⁸⁴ The cost of building a large steel SBFV was about CNY 18 million (USD 2.79 million) in 2018; the present cost of building a MMFV of similar size is likely higher, as MMFVs are more structurally complex than regular fishing vessels.⁸⁵

Details from Sansha City's construction and financing of militia vessels support these conclusions. SFDC is a wholly state-owned enterprise in Sansha City, Hainan Province, with the Sansha Financial Bureau listed as the sole owner.⁸⁶ SFDC was founded on February 10, 2015.⁸⁷ Costs associated with the construction of SFDC's MMFVs are not publicly available, but construction costs may be estimated based on available figures. In October 2014, the Hainan provincial government signed a contract worth CNY 84 million with Taizhou 7816 Plant (台州7816工厂 *taizhou 7816 gongchang*) to construct four fishing vessels for Sansha City, and the four vessels were requested to be ready for use in March 2015—shortly after the SFDC's date of establishment. Taizhou 7816 Plant is an enterprise involved in military equipment manufacturing.⁸⁸ A recruitment plan released on May 31, 2015—soon after construction of the vessels would have been completed—indicated that SFDC was hiring four captains and other crew, for a total of 88 personnel.⁸⁹ Thus, it appears that the provincial government paid for the construction of four professional MMFVs to be operated by SFDC at a rate of 21 million CNY per vessel.

The above subsidy rate was more than double that of Tanmen's militia vessels (CNY 10 million [USD 15.48 million] each). The staffing rate of 22 crew per vessel was also double the 11-crew-per-vessel rate of the Tanmen vessels. With a tonnage of 1,000 tons per vessel, the SFDC vessels themselves are twice the size of the Tanmen vessels.

A 2015 report from the Hainan provincial government mentioned that Hainan was building 84 steel-hulled maritime militia vessels, though it did not specify whether the ships would also be used for fishing.⁹⁰ An online post from a later date states that these vessels are professional MMFVs owned and operated by SFDC, each weighing at least 1,000 tons and equipped with high-pressure water cannons, light weaponry, and strengthened armor, with 64 vessels already in operation by 2018.⁹¹ Assuming a construction cost of CNY 21 million (USD 3.25 million) per vessel, this 84-vessel fleet would cost CNY 1.76 billion (USD 272.52 million).

It is not clear whether the 84 vessels are all operational, but it is known that 12 of them were operating by 2015.⁹² Therefore, it can be inferred that the remaining 52 were built between 2016 and 2018, which would mean expenditures of CNY 1.092 billion (USD 169.09 million) during that time. This amount is much higher than the militia-related expenditures included in Hainan Province's annual reports on budget planning and implementation for the years 2016–2018, which totaled CNY 485.2 million (USD 75.13 million)—less than one-third the estimated cost of constructing the 52 SFDC vessels. Thus, funding for the construction of these 84 special MMFVs likely came directly from military budgets rather than from the provincial government, and thus may not be included in government budget reports. In this case, the provincial government's militia operations funding may cover militia-related expenditures other than construction.

In addition to Hainan, the provinces of Guangdong and Guangxi likely have similar policies to

subsidize and encourage the growth of the militia. It is unlikely that only Hainan Province would have responded to Xi Jinping's political signal in his 2013 visit to Tanmen.

Subsidies for Communications, Navigation, and Safety Equipment

From 2015 to 2019, the central government provided special transfer payments to help provincial and local governments with the installation and renovation of communication, navigation, and safety equipment on marine fishing vessels (海洋渔船通导与安全装备配备及升级改造 *haiyang yuchuan tongdao yu anquan zhuangbei peibei ji shengji gaizao*).⁹³ The program installed or upgraded ultra-shortwave radios, DSC VHF radios, shortwave radios, AIS equipment, Beidou (China's global positioning and two-way text communication system) terminals, maritime satellite phones, satellite beacons, and other terminal equipment necessary for the dynamic monitoring and management of fishing vessels on medium and large marine fishing vessels (measuring 12 meters and above).⁹⁴ Medium and large vessels were also be equipped with life rafts and other safety equipment.

The shipboard communication, navigation, and safety terminals for marine fishing vessels registered to Guangdong Province are integrated into the existing Guangdong Province Fisheries Safety Communication and Command System (广东省渔业安全生产通信指挥系统 *guangdong sheng yuye anquan shengchan tongxin zhihui xitong*), which integrates not only the relevant fisheries monitoring and enforcement authorities but also the provincial military command.⁹⁵ The military has cooperated with the relevant fisheries authorities to install new equipment on fishing vessels so they can communicate across long distances; this way, even if the fishing vessels are civilian, they can also be used for military purposes in wartime.⁹⁶

Similar subsidies were also provided before 2015. In 2013, at the request of the local military office, the Qinzhou local government in Guangxi Province provided financial support to install Beidou terminals and maritime satellite phones on maritime militia fishing vessels to be used on emergency duty.⁹⁷

Subsidies for Militia Operations Funding and Maritime Militia Personnel

The PRC Militia Operations Ordinance states that militia operations funding is mainly used for military training, weapons and equipment management and maintenance, organizational development (组织建设 *zuzhi jianshe*), political affairs, and other expenses. The fund is included in provincial budgets after the provincial military command makes proposals to the provincial government.⁹⁸ The ordinance also states that the provincial bureau of finance (省财政厅 *sheng caizheng ting*) provides militia operations funding for the logistics department (后勤部 *houqin bu*) of the provincial military command, leaving the military departments to decide how to allocate and use the funds. For example, military stakeholders may advocate for using the funding to construct maritime militia training bases in important coastal cities.⁹⁹

Hainan Province's annual reports on budget planning and implementation disclose militia operations funding expenditures incurred by the provincial government. Maritime militia subsidies are included under the general "militia" section, which includes land-based militia as well. Thus, it is impossible to directly obtain the exact amounts of maritime militia subsidies from the annual

reports. However, the aggregate data in the annual reports may still provide some understanding of the scale of maritime militia subsidies. Militia expenditures incurred by the Hainan provincial government were: CNY 0 (USD 0) in 2013, CNY 287.73 million (USD 44.55 million) in 2016, CNY 144.03 million (USD 22.3 million) in 2017, CNY 53.44 million (USD 8.27 million) in 2018, and CNY 35.86 million (USD 5.55 million) in 2019.¹⁰⁰ The years 2016 and 2017 had much higher subsidies than the other years, perhaps because of the “Hainan Province 13th Five-Year Plan for Maritime Militia Building,” which began in 2016.

In 2013, the provincial government received CNY 25 million (USD 3.87 million) for the militia as a STP from the central government. This funding was housed under “national defense” (国防 *guofang*). But the provincial government reported no expenditures on the militia that year. This seems abnormal, unless the provincial government received the STP late in the year after reporting its expenditures. The category of “national defense” houses seven items:

1. Active-duty forces (现役部队 *xianyi budui*),
2. Reserve forces (预备役部队 *yubeiyi budui*),
3. Militia (民兵 *minbing*),
4. Defense research and development (国防科研事业 *guofang keyan shiye*),
5. Special engineering (专项工程 *zhuanxiang gongcheng*),
6. Defense mobilization (国防动员 *guofang dongyuan*), and
7. Other defense expenditures (其他国防支出 *qita guofang zhichu*).

The 2013 budget report is the only one available that discloses the breakdown of the STP received by the Hainan provincial government for national defense.

Hainan Province’s annual reports on budget planning and implementation do not disclose the expenditure of militia operation funds at local governmental levels. However, beginning in 2014, Hainan Province adopted a 50/50 division of obligations to provide maritime militia subsidies between the provincial and local levels of government, with these subsidies including but not limited to duty allowance (执勤补助 *zhiqin buzhu*), fuel subsidies, pensions (抚恤金 *fulixujin*), and medical support.¹⁰¹ The provincial subsidies amounted to CNY 28 million (USD 4.34 million) in 2014, implying that total subsidies (including local-level subsidies) in Hainan would have been CNY 56 million (USD 8.67 million) that same year.¹⁰² Unfortunately, neither the provincial nor the local expenditures on militia operations funding are disclosed in the 2014 report.

Subsidies to Maritime Militia Personnel

Subsidies to militia personnel are generally not covered by militia operations funding. According to the PRC Militia Operations Ordinance, local governments should provide subsidies—in accordance with local economic conditions—to rural (农村的 *nongcun de*) individuals who participate in militia trainings, and enterprises and institutions (企业事业单位 *qiye shiye danwei*) should provide accommodation and travel allowances to their employees who participate in militia trainings while also paying their usual salaries.¹⁰³ There is no nationwide, one-size-fits-all standard for personnel

subsidies.¹⁰⁴ Therefore, training subsidies to maritime militia personnel are likely to vary greatly among regions and enterprises or institutions.

In addition to the “part-time” maritime militia personnel who still have commitments outside of the militia, there are also “full-time” maritime militia personnel who work as salaried employees of state-owned fisheries enterprises committed to maritime militia operations, such as SFDC. Maritime militia training is among the routine job responsibilities for such full-time personnel, alongside fishing operations and other activities.¹⁰⁵ For full-time maritime militia personnel, government subsidies come in the form of salaries (and any other additional benefits or payments) through the state-owned enterprises and are thus more covert and less transparent than those for part-time maritime militia personnel.

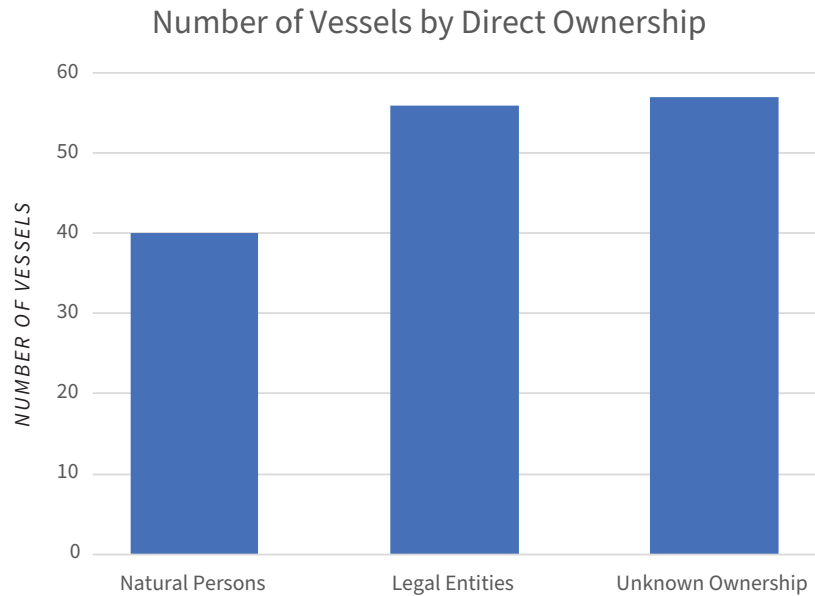
Subsidies for the Recruitment of Veterans

In August 2020, the Ministry of Transport and the Ministry of Veterans Affairs launched a nationwide initiative entitled the “Spindrift Program” (浪花计划 *langhua jihua*), a vocational skills program featuring “government + universities/colleges + enterprises + veterans,” to provide crew training and subsequent job placement for veterans.¹⁰⁶ Guangxi Province was the first to implement this initiative, through a partnership with Guangxi Hongxiang Shipping Company Ltd. (广西鸿翔船务有限公司 *guangxi hongxiang chuanwu youxian gongsi*). The company trained and hired 100 veterans, of which 40 were employed on distant-water fishing vessels and 60 were hired for domestic vessels. The company prioritizes the training of veterans to serve as maritime militia forces, presumably streamlining the process of maritime militia mobilization if new recruits already have military experience.¹⁰⁷ While Guangxi Hongxiang Shipping Company is involved in maritime militia affairs through this program, the company is not a fishing enterprise and does not own or operate fishing vessels.¹⁰⁸ It is unclear whether the company only provides training opportunities or has a deeper involvement in maritime militia affairs by providing other types of support.

Part IV: On-Shore Owners¹⁰⁹

All vessel activity at sea is enabled by owners on shore. The registered owner of a vessel is responsible for funding its operations, either through direct management of its maintenance and operations or through contractual agreement with another party. The owners of militia vessels are thus inherently responsible for their operations in the South China Sea—including those that violate international law. The characteristics of militia vessel ownership structures also offer important insight into the maritime militia’s organization and operations. Links between vessel owners and Chinese government entities may also play a useful role in identifying militia vessels, though this report’s findings suggest that these should only serve as supporting indicators and that, in most cases, they are not sufficient to determine whether a vessel is or is not a part of the maritime militia. Further details on the indicators used to identify militia vessels in this report are presented in the Methodology section.

Of the 169 militia and likely militia vessels analyzed, the registered owners of 96 were found using publicly available information such as provincial fishing vessel oil subsidy lists, corporate lawsuits, and references in media.¹¹⁰ The owners of 40 of these vessels are natural persons, whom this study considers likely to be the ultimate directors and beneficiaries of at-sea activity. The owners of the remaining 56 vessels for which ownership information was found are legal entities, such as companies or fishing cooperatives. Since these legal entity owners are themselves subordinate to corporate networks of shareholders and directors, Chinese corporate registry documents were used to identify individuals who hold a majority stake in the entity serving as a vessel’s registered owner or who are the majority stakeholders of a series of corporate entities that ultimately own the vessel.



Maritime militia vessels by direct owner type

Source: Based on the authors' research and analysis.

The full list of immediate and ultimate owners of maritime militia vessels can be found in Appendix A of this report.

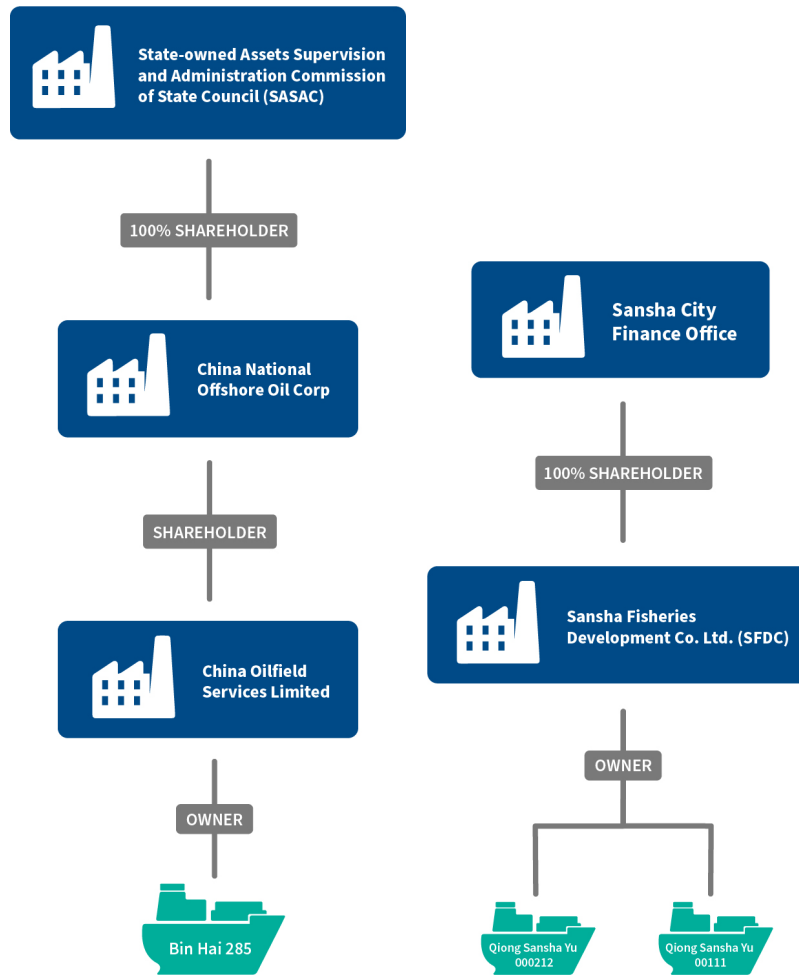
Corporate Links to Chinese Government Entities

For three suspected maritime militia vessels, this study's corporate network mapping ended not in a natural person but rather a Chinese government entity, establishing a clear link between activity at sea and the government entities ultimately responsible for the vessels. For example, the vessel *Bin Hai* 285—involved in the ramming of the Vietnamese surveillance vessel *KN-951* in the South China Sea in 2014¹¹¹—is directly owned by China Oilfield Services Ltd., which is ultimately wholly owned by the Chinese state-owned Assets Supervision and Administration Commission of State Council (SASAC).¹¹² In another case, the vessels *Qiong Sansha Yu* 000212 and *Qiong Sansha Yu* 00111 are both directly owned by SFDC, which is itself owned in full by the Sansha City Finance Office. Though conclusive ownership information was not found for the 45 other suspected militia vessels identified in this report registered to Sansha, most are also likely owned by SFDC, which was established in 2015 specifically for the management of Sansha militia vessels.

Simple, Concentrated, and Centralized Ownership Networks

Analysis reveals three unifying characteristics of the ownership structure of militia and likely militia vessels.

First, the ownership networks are simple. 90 percent of the vessels identified in this study are either directly owned by, or are one entity removed from, their ultimate beneficial owner (UBO).¹¹³ The remaining 10 percent have three levels of separation from their ultimate beneficial owner.



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Corporate networks revealing links between maritime militia vessels and Chinese government entities

Source: Based on the authors' research and analysis.

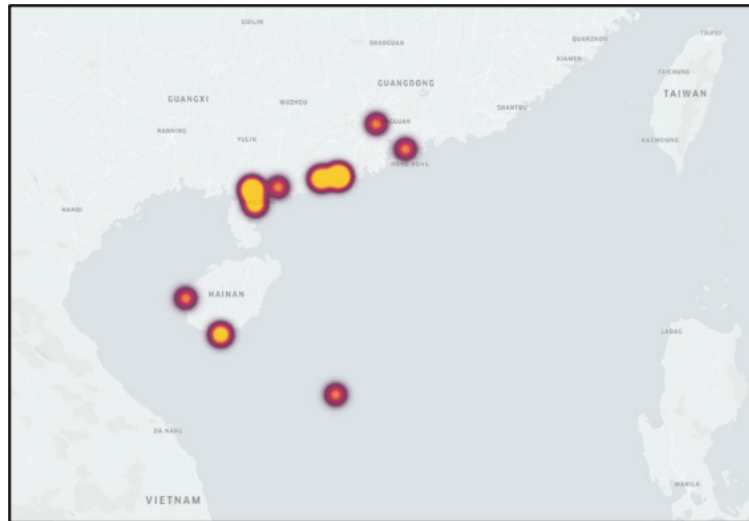
Complex ownership networks are often constructed in cases where ultimate beneficial owners desire to hide their links to illegal or unpopular activity. The simplicity of maritime militia ownership networks suggests the opposite: owners are apparently unconcerned with hiding their connection to the militia.

Table 3. Levels of Separation between Militia and Likely Militia Vessels and Their Ultimate Beneficial Owner

LEVELS OF SEPARATION TO UBO	VESSELS
1	39
2	47
3	10

Source: Based on the authors' research and analysis.

Second, the ownership of militia and likely militia vessels is geographically concentrated along the Chinese coast closest to the South China Sea. This is consistent with the purpose of the maritime militia as a whole: to advance China’s claims through gray zone operations. Of the 28 companies and fishing cooperatives identified as directly owning one or more militia or likely militia vessels, 22 are based in Guangdong Province and 5 are based in Hainan Province. One of the Hainan-based companies is located on Woody Island, in the disputed Paracel Islands. Only one company was based in China’s interior, in northeastern Hebei Province near Beijing.



Heatmap of direct owners based on Guangdong and Hainan Provinces

Third, despite this geographic concentration, the ownership of militia and likely militia vessels is only moderately centralized. The majority of vessels analyzed do not appear to have an overlapping or organized ownership network. The 96 vessels for which ownership information was found have a total of 64 direct owners, indicating a moderately concentrated direct ownership “vessel to owner” ratio of roughly 1.5 to 1.

Notably, ownership type was correlated with the average number of vessels controlled by a single entity. Just 8 percent of natural person direct owners controlled more than one suspected maritime militia vessel identified in this report, as compared to 54 percent of the legal entity direct owners (which are supported by corporate networks). Those direct owners of multiple vessels are highlighted in the table below.

Table 4. Entities That Directly Own Two or More Militia or Likely Militia Vessels

DIRECT OWNER	VESSELS
Taishan Fancheng Fisheries Development Co. Ltd.	9
Maoming Desheng Fisheries Company Ltd.	7
Guangdong Xingchen Marine Fishery Co. Ltd.	3
Lin Ling	3

Sansha Fisheries Development Co. Ltd. (SFDC)	3
Zhanjiang Yanghai Fishery Professional Cooperative	3
Deng Fengjuan	2
Guangdong Shunxin Marine Fishery Group Co. Ltd.	2
Guangzhou Pelagic Fishery Company	2
Hainan Fugang Ocean Fishery Co. Ltd.	2
Jiangmen Xinhui District Honghai Fishery Professional Cooperative	2
Leizhou Wushi Runming Fishery Professional Cooperative	2
Lianjiang Haishunfeng Fishery Co. Ltd.	2
Lin Ningyu	2
Sanya Yufeng Fishermen Professional Cooperative	2
Shenzhen Bangchong Agricultural Technology Co. Ltd.	2
Taishan Xierun Marine Fisheries Co. Ltd.	2
Yangjiang Sansha Fisheries Co. Ltd.	2

Source: Based on the authors' research and analysis.

Although many militia vessels have sister ships, the vessels studied in this report are rarely linked at higher levels of ownership, such as through intermediary companies or ultimate beneficiaries. Only two direct owners, collectively responsible for three maritime militia vessels, had higher-tier beneficiary owners in common. This lack of umbrella ownership may reflect the decentralized nature of China's maritime militia organizational structure.¹¹⁴

Two of the most well-known maritime militia fleets contrast with these findings—the *Qiong Sansha Yu* and *Qiong Qionghai Yu* fleets. SFDC is known to own a significant number of *Qiong Sansha Yu* professional MMFVs. But while 47 vessels from this fleet are identified in this report, the authors were able to find conclusive ownership information for only two of them. Similarly, Tanmen Maritime Militia Company is known to have owned up to 40 professional MMFVs named *Qiong Qionghai Yu*.¹¹⁵ But it is unclear how many remain active as of 2021—only one was identified using the indicators in this report. These two fleets, and the ways in which their MMFVs contrast with the SBFVs that likely make up the majority of militia and likely militia boats identified in this report, warrant further study.

Deep Dive: Taishan County's Maritime Militia

In order to further illustrate the links among maritime militia vessels and between these vessels and the Chinese government, this report examines in depth the ownership networks of those vessels based out of Taishan County, Guangdong Province.

Taishan is a hub for maritime militia activity; of the 169 vessels analyzed in this report, 26 (17 percent) are registered as fishing boats in Taishan. This geographic grouping is the second largest among the militia and likely militia vessels identified in this report, and the largest for which all vessels' ownership information was found.¹¹⁶

Table 5. Militia and Likely Militia Vessels Based in Taishan, Guangdong Province (as adapted from Appendices A and B)

VESSEL NAME	MMSI	DIRECT OWNER	ULTIMATE BENEFICIAL OWNER
Yue Tai Yu (粤台渔) 11098	412463494	Taishan Juxing Fisheries Co. Ltd. (台山市聚兴渔业有限公司)	Ye Guiqing (叶桂清)
Yue Tai Yu (粤台渔) 11981	412471002	Zhang Guiyou (张贵优)	Zhang Guiyou (张贵优)
Yue Tai Yu (粤台渔) 23688	412472931	Fang Hongbin (方鸿宾)	Fang Hongbin (方鸿宾)
Yue Tai Yu (粤台渔) 61188	412463149	Lei Jianhui (雷建惠)	Lei Jianhui (雷建惠)
Yue Tai Yu (粤台渔) 61868	412461574	Lin Bingjia (林炳家)	Lin Bingjia (林炳家)
Yue Tai Yu (粤台渔) 62338	412463354	Zhu Haojie (朱浩杰)	Zhu Haojie (朱浩杰)
Yue Tai Yu (粤台渔) 11028	412461607	Taishan Runhe Marine Fisheries Fishing Co. Ltd. (台山市润和海洋渔业捕捞有限公司)	Lin Rixi, He Rizhao (林日喜, 何日照)
Yue Tai Yu (粤台渔) 11302	412470993	He Rizhuang (何日庄)	He Rizhuang (何日庄)
Yue Tai Yu (粤台渔) 11266	412472887	Taishan Zhaoxi Pelagic Fisheries Fishing Co. Ltd. (台山市照喜远洋渔业捕捞有限公司)	Mo Meixing (莫美兴)
Yue Tai Yu (粤台渔) 12588	412472784	Taishan Xierun Marine Fisheries Co. Ltd. (台山市协润海洋渔业有限公司)	
Yue Tai Yu (粤台渔) 12589	412472785		
Yue Tai Yu (粤台渔) 12898	412464567	Lin Jinbo (林进波)	Lin Jinbo (林进波)
Yue Tai Yu (粤台渔) 18168	412474203	Taishan Changhesheng Fisheries Development Co. (台山市帆程渔业发展有限公司)	Huang Guichang (黄桂昌)

Yue Tai Yu (粤台渔) 18000	412472778	Taishan Fancheng Fisheries Development Co. Ltd. (台山市帆程渔业发展有限公司)	Weng Yilan, Weng Jianxin (翁一岚, 翁健心)
Yue Tai Yu (粤台渔) 18111	412472779		
Yue Tai Yu (粤台渔) 18222	412472781		
Yue Tai Yu (粤台渔) 18333	412472782		
Yue Tai Yu (粤台渔) 18555	412472783		
Yue Tai Yu (粤台渔) 18666	412472884		
Yue Tai Yu (粤台渔) 18777	412472885		
Yue Tai Yu (粤台渔) 18888	412472883		
Yue Tai Yu (粤台渔) 18999	412472882		
Yue Tai Yu (粤台渔) 61166	412463291	Tan Hongwei (谭红卫)	Tan Hongwei (谭红卫)
Yue Tai Yu (粤台渔) 61999	412463147	Chen Songhan (陈松汉)	Chen Songhan (陈松汉)
Yue Tai Yu (粤台渔) 62098	412464942	Tan Dahuan (谭达欢)	Tan Dahuan (谭达欢)
Yue Tai Yu (粤台渔) 63888	412463784	Zhu Xuefeng (朱雪峰)	Zhu Xuefeng (朱雪峰)

Source: Based on the authors' research and analysis.

Historic corporate affiliations and current investments of individuals involved in the ownership networks of these vessels, as well as open-source reporting on these individuals, reveals previously unseen links to the Chinese government.¹¹⁷ Examination of supplier relationships also uncovers potential connections between vessels and the Chinese government, as well as links to U.S. companies.

Ownership Network Consistency

The characteristics of Taishan-based vessel owners are consistent with the maritime militia's ownership network as a whole. Like the broader set of vessels identified in this study, the *Yue Tai Yu* vessels are directly owned by a mixture of legal entities (57.7 percent, representing six legal entities) and natural persons (42.3 percent, representing 11 natural persons). The largest grouping of vessels is controlled by Taishan Fancheng Fisheries Development Co. Ltd., which operates no less than nine maritime militia vessels.¹¹⁸ Most owners of Taishan-based vessels, however, are in control of only one vessel (three legal entities, 11 natural persons) or two vessels (two legal entities) identified in this report.

The ownership network of Taishan-based militia and likely militia vessels is also simple. Six vessels are directly owned by their ultimate beneficial owner, six vessels have two levels of

separation to their ultimate beneficial owner, and nine vessels have three levels of separation. Additionally, as suggested by the vessel naming structure, all direct legal entity owners of *Yue Tai Yu* vessels are physically located in Taishan County. It is noteworthy that these appear to be recently established businesses; five of six legal entity owners were established between April 2015 and December 2016, with the sixth established in May 2014.

And, finally, the ownership of Taishan-based militia and likely militia vessels is moderately centralized. The 26 *Yue Tai Yu* vessels for whom ownership was identified are owned by a total of 17 direct owners, which results in the same “vessel to owner” ratio of 1.5 to 1 that is seen in this report’s broader analysis of maritime militia ownership.

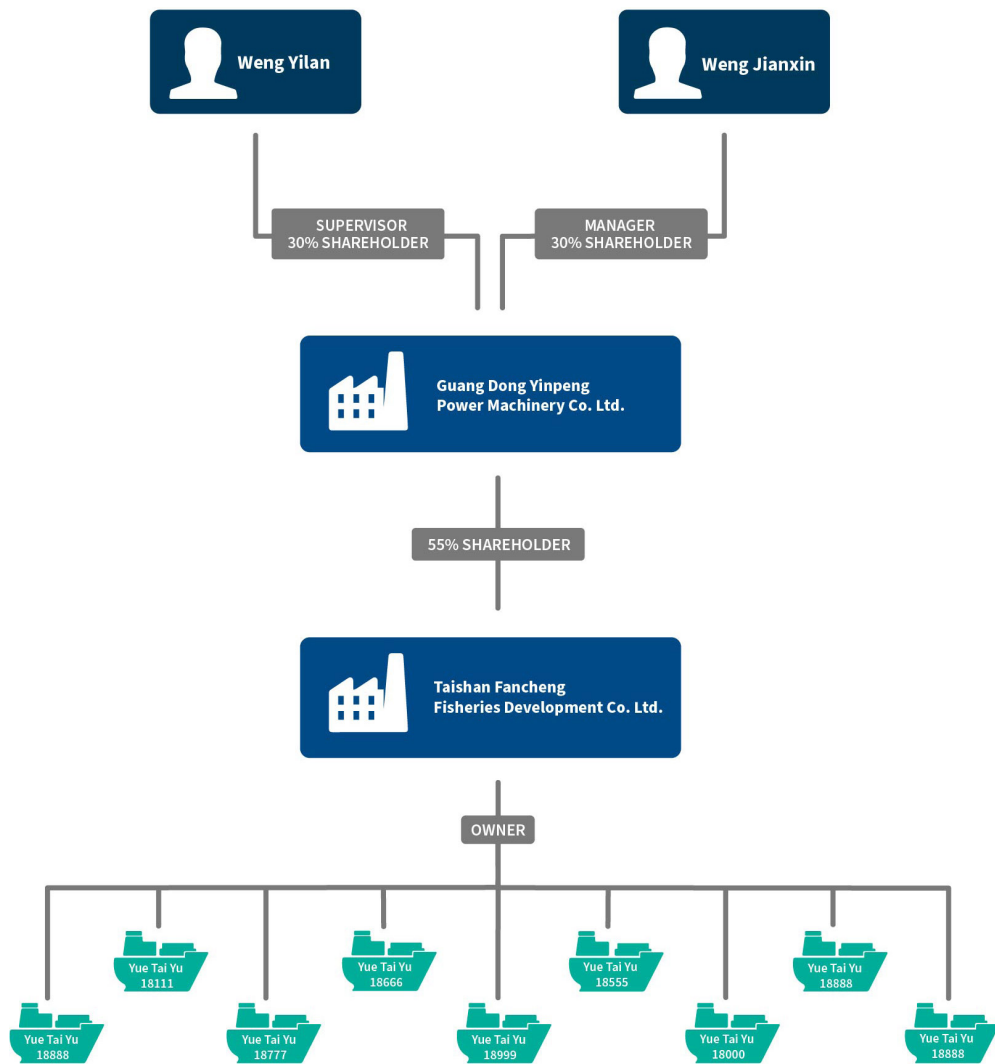
Chinese Government Links

Yue Tai Yu militia and likely militia vessel owners do not have one common type of government connection—the depth and substance of ties varies by owner. Furthermore, although ownership among *Yue Tai Yu* vessels is relatively distinct among current owners and directors, ownership networks begin to overlap when one considers former owners and directors.

Taishan Fancheng Fisheries Development is the immediate owner of nine Taishan-based vessels: *Yue Tai Yu* 18000, 18111, 18222, 18333, 18555, 18666, 18777, 18888, 18999. Evidence suggests that the company was established for the express purpose of building maritime militia vessels: in August 2016, the Ministry of Agriculture approved an investment of over CNY 200 million (USD 30 million) to build nine SBFVs through the establishment of Taishan Fancheng Fisheries Development (台山市帆程渔业发展有限公司 *taishan fancheng yuye fazhan youxian gongsi*).¹¹⁹ This direct link to the Chinese government is further evidenced by the attendees of a hand-over ceremony hosted by the Guangxin Haigong shipyard on December 5, 2017. The ceremony, marking the delivery of nine 62.8-meter-long steel distant-water trawlers to Taishan Fancheng Fisheries Development, was attended by Deputy Commander Wan Liangan and Director of Warfare Construction Division Zhang Yuanfa, both of the Jiangmen Military Sub-district (江门军分区 *jiangmen junfenqu*) in Taishan County.¹²⁰

The nine vessels are further linked to the Chinese government through an intermediary owner, Guangdong Yinpeng Power Machinery Co. Ltd. (广东银鹏动力设备有限公司 *guangdong yinpeng dongle shebei youxian gongsi*).¹²¹ Guangdong Yinpeng Power Machinery is a 55 percent shareholder of Taishan Fancheng Fisheries Development, and it has ties to the Chinese government through its corporate ownership and activities. Weng Yilan, a 30 percent owner of Guangdong Yinpeng Power Machinery, was selected as a representative for the 12th National People’s Congress (NPC) in January 2016 and was recommended to be a representative for the 13th NPC of Guangdong Province in December 2020.¹²² Weng Yilan’s association with the NPC continued into secondary events, such as in May 2018 when she was invited to serve as a representative of the 13th NPC for the Shanwei City Ocean and Fishery Association’s first general meeting.¹²³ Among the goals of the meeting was to strengthen ties between government and industry.

Guangdong Yinpeng Power Machinery also maintains at least two investments in entities whose other shareholder is linked to the Chinese government.¹²⁴ First, Guangdong Yinpeng Power Machinery is the majority shareholder (80 percent) of Guangdong Guangyuan Investment, of which the only other investor is Guangdong Guangyuan Fishery Group, a fishery company established in 1987 wholly owned by the



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Simplified corporate network map of nine Taishan-based maritime militia vessels

Source: Based on the authors' research and analysis.

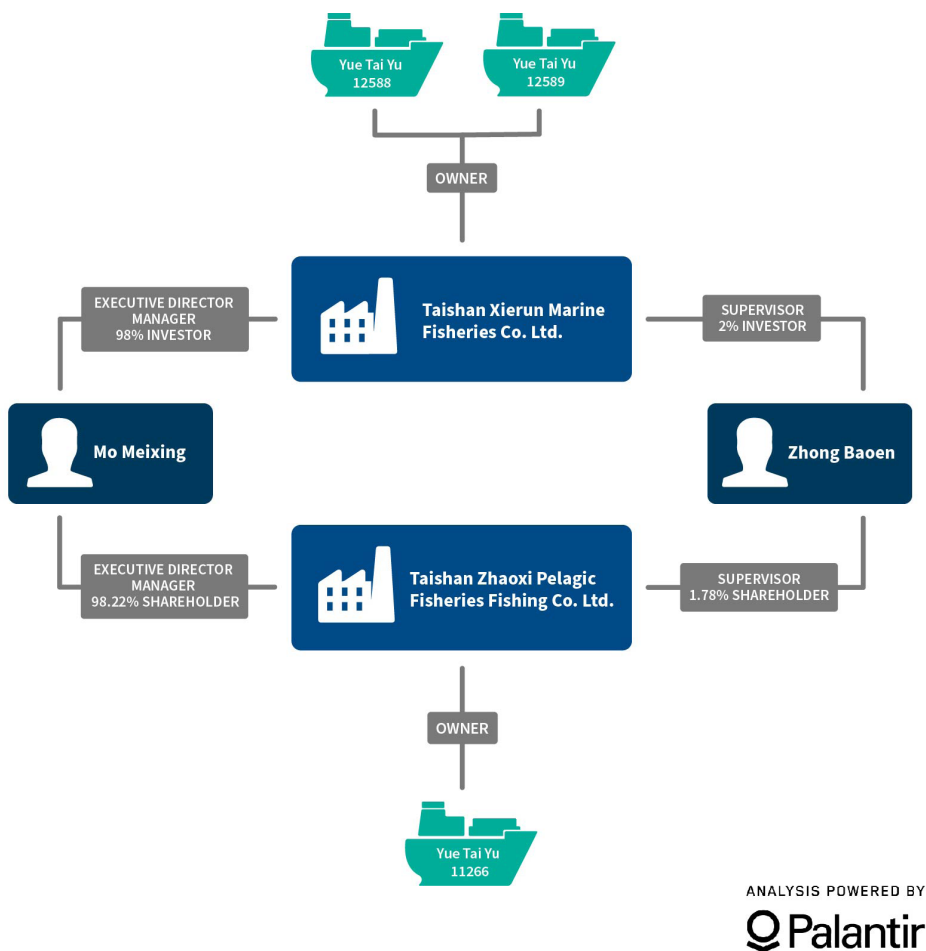
Guangdong Province Department of Agriculture.¹²⁵ Second, Guangdong Yinpeng Power Machinery is a minority shareholder (38 percent) of Anshan Xinbo Electromechanical Engineering Co. Ltd., in which the remaining shares are owned by Angang Group Mining Industry Development General Co. The ultimate beneficial owner of this latter company is China's state-owned SASAC.¹²⁶

It is noteworthy that Guangdong Yinpeng Power Machinery may also be linked to U.S. companies and investors. Guangdong Yinpeng Power Machinery is part of a larger conglomerate called the Yinpeng Group, which has branch offices throughout China and Singapore. Yinpeng Group companies reportedly have commercial ties to Cummins Inc., a U.S. multinational corporation that manufactures and distributes engines and machinery.¹²⁷ Specifically, Guangdong Yinpeng claims to be an authorized agent of Cummins Engine Co. Ltd; an original equipment manufacturer (OEM) for Chongqing Cummins Engine Co. Ltd.; an

OEM factory for Mitsubishi Corporation of Japan; and an OEM factory for Stanford-Cummins Technology (China) Co. Ltd.¹²⁸ Most recently, the website of Fujian Yinpeng noted a contract with Cummins to supply 1,200 kW generators to Ukrainian oil and gas fields in 2019.¹²⁹

The nine Taishan Fancheng Fisheries Development-owned ships are the most clearly government-linked militia vessels from Taishan County analyzed in this report; their ultimate beneficial owner, Weng Yilan, is politically involved, and their intermediate corporate owner, Guangdong Yinpeng Power Machinery, is linked to the government through corporate investments. Other militia and likely militia vessels from Taishan are more distantly linked to Chinese government entities through historic or tertiary investments or linked company business activities.

Three Taishan-based vessels, belonging to two different direct owners, have the same ultimate beneficial owner. Taishan Zhaoxi Pelagic Fisheries Fishing Co. Ltd., owner of *Yue Tai Yu* 11266, and Taishan Xierun Marine Fisheries Co. Ltd., owner of *Yue Tai Yu* 12588 and 12589, are both currently owned by the same shareholders: Mo Meixing (98 percent owner) and Zhong Bao'en (2 percent owner).



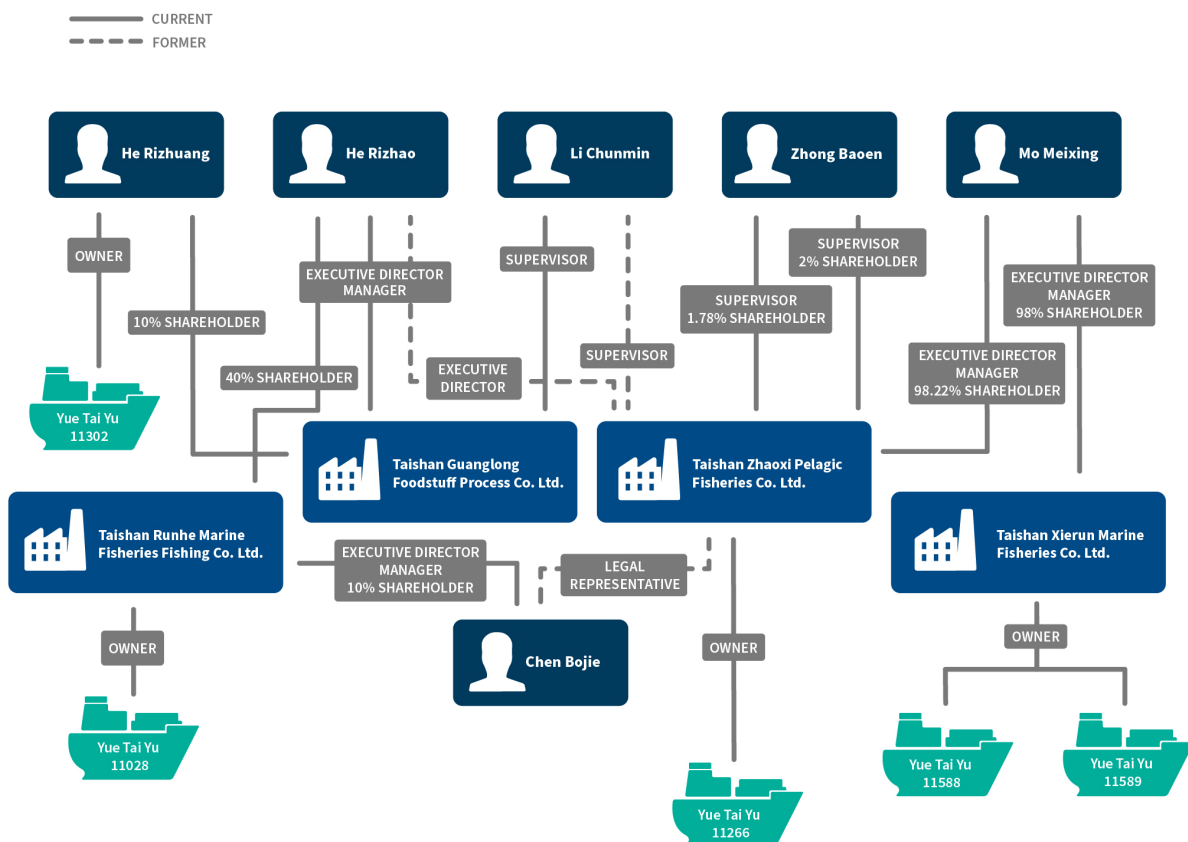
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Ultimate beneficial owner network of Yue Tai Yu vessels 11266, 12589, and 12588

Source: Based on the authors' research and analysis.

Mo Meixing is also a manager and executive director owner of Jiangmen Gongxifacai Import & Export Limited, whose majority (80 percent) shareholder is Zhang Huasheng. Zhang’s other investments include a 35 percent share of Zhongshan Hongcheng Commercial Co. Ltd., which previously supplied China MCC22 Group Corporation Ltd.—a company whose ultimate beneficial owner is state-owned SASAC. China MCC22 is wholly owned by the Metallurgical Corporation of China, whose plurality (29.19 percent) shareholder is China Metallurgical Group Corporation, a company wholly owned by China Minmetals, which is itself wholly owned by SASAC.

This network, loosely connected to Chinese government entities through supplier relationships, is linked through shared historic ownership to an additional suspected militia vessel identified in this report: *Yue Tai Yu* 11028. He Rizhao, the direct owner of *Yue Tai Yu* 11302, is also 40 percent owner of Taishan Runhe Marine Fisheries Fishing Co. Ltd. and executive director of a Taishan-based foodstuffs company. He was previously the executive director of Taishan Zhaoxi Pelagic Fisheries, owner of the *Yue Tai Yu* 11266. One of He Rizhao’s fellow directors at the foodstuffs company, Li Chunmin, was also previously a supervisor of Taishan Zhaoxi Pelagic Fisheries. A third individual, Chen Bojie, is a 10 percent owner of Taishan Runhe Marine Fisheries and was previously legal representative for Taishan Zhaoxi Pelagic Fisheries.



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Corporate networks linking several different direct owners of *Yue Tai Yu* vessels

Source: Based on the authors’ research and analysis.

This business network includes several individuals linked to Chinese government entities. He Rizhao was likely a representative of Taishan City for the Chinese People’s Political Consultative Conference in December 2020 and may be a legal representative for Guanghai Town’s supply and marketing cooperative.¹³⁰ Additionally, the five founding shareholders of Taishan Xierun Marine Fisheries—owner of *Yue Tai Yu* 12588 and 12589—appear to be loosely linked to government entities through their current corporate affiliations, including work as suppliers or contractors.

But not all militia and likely militia vessel owners are as clearly connected to the government. This report found no significant links to the Chinese government among the direct natural person owners or the remaining two legal entity owners of Taishan-based maritime militia vessels identified in this report. The latter—Taishan Juxing Fisheries, which owns *Yue Tai Yu* 11098, and Taishan Changhesheng Fisheries Development, which owns *Yue Tai Yu* 18168—do not have discernable political involvement based on business dealings or media mentions through tertiary owners.

Significance for the Identification of Maritime Militia

Given the similarities between ownership characteristics of militia and likely militia vessels from Taishan and the broader dataset of vessels identified in this report, it is likely that similar in-depth investigations of the natural persons involved in other maritime militia vessel ownership networks would also reveal historic or tertiary links to the Chinese government. Regardless, this report’s findings regarding both the overall ownership analysis of militia and likely militia vessels and the deep dive into Taishan-based vessels indicate that, although there are common characteristics of ownership networks, the links between vessels and the Chinese government are not consistent.

Within this report’s total dataset of militia and likely militia vessels, there were both immediate links to the Chinese government—such as those ultimately owned by a state enterprise or by politically exposed persons—and looser political links, such as ownership connected to the Chinese government through business activities or tertiary legal entities. However, most of the vessels identified in this report could not be linked to the Chinese government through open-source reporting or corporate registry documents. This emphasizes that a Chinese government link through ownership should not be a primary metric for determining a vessel’s affiliation with the maritime militia, but rather a supporting indicator within a larger evaluation.

Identifying Militia Vessels

A Methodology

This report follows an indicator-based methodology for evaluating the affiliation of Chinese fishing vessels with the country’s maritime militia. These indicators were defined to categorize and appropriately weight the types of evidence for maritime militia affiliation uncovered during research. Two categories of indicator were defined: primary and supporting. Vessels that meet the criteria of a primary indicator are identified in Appendix A as maritime militia with high confidence. Vessels that meet supporting indicators are considered likely to be maritime militia but are requiring of additional research; they are listed in Appendix B at medium confidence. The authors of this report are hopeful that future studies of China’s maritime militia can utilize and iterate upon this methodology.

Primary Indicators

Indicator 1: Is the fishing vessel identified as belonging to the maritime militia or linked to maritime militia-related terms through Chinese-language open-source media reporting?

This report considers maritime militia to be any Chinese fishing vessel identified as such by name in Chinese-language open-source media. Reports containing both vessel names and keywords such as “militia (民兵 *minbing*),” “maritime militia (海上民兵 *haishang minbing*),” and “distant-water maritime militia (远海民兵 *yuanhai minbing*)” were collected and examined to identify the nature of the vessel’s connection to the militia. Reports containing the following scenarios were considered evidence of a positive indicator:

1. the vessel is directly referred to as a maritime militia vessel;¹³¹
2. the vessel is mentioned as being owned or operated by a maritime militia organization;¹³²
3. the vessel is mentioned as being constructed, renovated, or used for maritime militia affairs;
4. military officials or maritime militia leaders are mentioned or photographed at the construction site or inauguration ceremony of the vessel;¹³³
5. military officials or maritime militia leaders are mentioned or photographed making an onboard visit or inspection of the vessel; or
6. maritime militia personnel are mentioned or photographed on duty aboard the vessel.

Indicator 2: Is the fishing vessel observed loitering in disputed South China Sea areas without fishing, or engaged in known militia deployments?

Chinese fishing vessels observed operating at known militia deployments—such as those near Thitu Island and at Whitsun Reef—and loitering for substantial amounts of time near disputed features in the South China Sea were also considered by this report to be militia vessels identified with high confidence. In practice, the vessels identified in this report by this indicator fell into two categories:

1. Ships photographed at Whitsun Reef during 2020 and 2021
2. Ships broadcasting an AIS signal from Whitsun Reef, Thitu Island, or oil and gas standoffs off the coast of Malaysia and Vietnam

The militia deployments at both Whitsun Reef and Thitu Island were eventually publicized and documented by the Philippine government and, in the case of Whitsun, by Vietnamese state media. However, both militia deployments had already been publicly identified as such earlier by international observers employing commercially available remote sensing tools, including satellite imagery and AIS data.

A key aspect of discerning militia activity from fishing activity is identifying whether the vessels actually engage in fishing. This can usually be discerned through photographs, video, or high-resolution satellite imagery, in combination with AIS. Chinese fishing vessels in the Spratlys consist mostly of trawlers and falling-net vessels. Trawlers fish by towing nets through the water or along the seabed. Falling-net vessels fish by attracting fish to the vessel through the use of bright lights and extending long arms carrying a large net that is then dropped around the target catch. Trawlers observed to be stationary, or falling-net vessels observed without arms extended, cannot be engaged in fishing. When vessels loiter for days or weeks without ever trawling or deploying gear, it is extremely compelling evidence they are not commercially fishing.

In practice, however, it is often even easier to tell that Chinese fishing vessels are not engaged in fishing because they “raft-up,” tying themselves together in a tightly grouped line for increased stability at anchor and easier communication between ships during long periods of inactivity. Chinese vessels can often be observed in such a fashion when they are anchored within Subi or Mischief Reef, as well as when they are deployed to the sandbars west of Philippine-occupied Thitu Island or in Union Banks, including at Whitsun Reef.



Chinese militia vessels tied up at Whitsun Reef, March 25, 2021

There is no commercial rationale for a large fleet of fishing vessels to operate in this manner. Remote sensing data shows that Chinese maritime militia vessels loiter in large clusters for weeks at a time. If they were full-time fishers, they would be losing money by the day. And in fact, it would be virtually impossible for the fleets China now deploys regularly to the Spratlys to fish commercially: if they all did so, their estimated catch rates would overwhelm the Spratly Islands fishery in short order.¹³⁴

AIS data alone cannot determine whether a falling-net vessel is fishing—that ultimately requires satellite or on-the-water imagery. But it can often prove whether a trawler is fishing, since it can show whether the vessel is moving or stationary. In almost all cases, AIS is a least part of the puzzle in identifying and tracking militia deployments. AIS was originally designed for collision avoidance and thus only intended to be received by receivers on shore or on nearby ships. Over the last decade and a half, however, satellite-based sensors have been launched to receive AIS signals across the globe. These can be viewed on commercial platforms such as MarineTraffic and Windward (both used in the production of this report).

The use of an AIS transceiver—which broadcasts a vessels' name and position—along with a variety of other data is mandated in international waters for all vessels over 300 tons by the International Maritime Organization's International Convention for the Safety of Life at Sea, to which China is a party. Beijing doesn't consider the South China Sea to be international waters, even those parts beyond its EEZ. But its domestic regulations still require all domestic fishing vessels to be equipped with AIS as a safety measure. Some of these Chinese fishing vessels, particularly the largest and most modern, are equipped with Class A AIS transceivers that can be consistently tracked by satellite and viewed on commercial platforms; the

Yue Tai Yu fleet numbered 18000 to 18999 is an example of this. However, the vast majority of Chinese militia vessels are equipped with Class B transceivers, which are weaker and can be tracked by satellite only rarely, if at all. As a result, their positions can only be reliably detected by other vessels within range, or when they approach shore-based receivers (usually while entering or leaving port). This often makes commercial AIS platforms valuable tools for corroborating and expanding on information derived from other sources, but not sufficient to identify militia activity.

Supporting Indicators

Indicator 3: Is the fishing vessel linked to known militia vessels, officers, companies, or activities in publicly available sources?

A ship's links to known militia vessels, officials, companies, or activities can indicate that the ship might be part of the maritime militia itself. A typical scenario is that the suspected vessel is photographed alongside or near known militia vessels in port or at sea. Such an appearance may be regarded as a coincidence if there is no obvious pattern of militia activity at the site. However, if the suspected vessel is docked or positioned with known militia vessels in a patterned manner—for example a layout in which the suspected vessel and known militia vessels are arranged in order of hull number, or the suspected vessel is clustered with known militia vessels—it is reasonable to assume a relationship that is worth further investigation.

Another typical scenario is one in which the suspected vessel is photographed or described as appearing in or around the same location as Chinese military, coast guard, or fishery law enforcement vessels, and where the vessel participates in non-fishery activities (e.g., maritime rescue drill) organized by these government departments. Taking part in such activities aligns with the obligations of maritime militia vessels, which include not only defending “national rights and interests,” but also participating in civilian activities such as maritime rescue drills. A good example of this latter scenario is *Qiong Sansha Yu* 00111, which was photographed as participating in a maritime rescue drill with government vessels.¹³⁵

Indicator 4: Is the ship receiving subsidies from the Chinese government greater than those given to comparable fishing vessels?

Receiving government subsidies substantially greater than comparable fishing vessels can be an indication that the boat is a SBFV and therefore part of the militia—though caution should be taken when judging a suspected vessel solely according to the amount of fuel subsidies it receives.

Fishing vessels operating in specially designated waters in the South China Sea receive subsidies for fuel consumption; they might also receive additional one-time bonuses. Regular fishing vessels operating in specially designated waters would also receive such subsidies, however, meaning that the receipt of large subsidies alone does not prove that a ship is part of the maritime militia. That said, fishing vessels receiving the most generous fuel subsidies—of at least CNY 6,769,000 (USD 1,048,124.82) annually for operation—in specially designated waters appear extremely likely to be maritime militia vessels for the following reasons:

1. Evidence suggests that vessels receiving this amount are SBFVs (which, as elaborated on earlier in this report, is one category of maritime militia vessel). SBFVs are required to operate for a

minimum of 280 days in “specific maritime areas delineated for the purpose of national rights defense (国家维权特定海域范围 *guojia weiquan teding haiyu fanwei*)” before “receiving basic salaries in full (发放足额的基本工资 *fafang zu'e de jiben gongzi*).”¹³⁶ Governmental disclosures of fuel subsidies reveal that fishing vessels meeting the size and power requirements for SBFVs and operating for 280 days in specially designated waters receive CNY 24,175 (USD 3,743.30) per day for a total of CNY 6,769,000 (USD 1,048,124.82).¹³⁷

2. Such fuel subsidies exceed the operational costs of CNY 4 million (USD 619,367.60) per year on average for a Chinese fishing vessel operating in waters around the Spratly Islands.¹³⁸ Owners receiving these subsidies easily profit by simply deploying their vessels in specially designated waters without fishing at all.¹³⁹ The only apparent reason for the Chinese government to allow for such lucrative fuel subsidies is to convince more China-flagged fishing vessels to assert maritime claims, as it provides no incentive to boost fishing activity.

Indicator 5: Is the fishing vessel anomalous to other fishing vessels in size, equipment, staffing, or operations in specially designated waters?

“Anomalous” fishing vessels are those that have an abnormally large size, are understaffed, have unusual equipment or specifications that suggest a military or militia purpose, operate in specially designated waters, or navigate along unusual routes compared with other fishing vessels. As elaborated below, one or more of these anomalous features may signal that a given fishing ship is a maritime militia vessel.

Chinese military stakeholders seek large, steel-hulled vessels to absorb into the maritime militia force for defense and other advantages (such as wind and wave resistance).¹⁴⁰ For this reason, members of the SBFV fleet are required to have a length of over 35 meters and a minimum vessel tonnage of over 200 tons.¹⁴¹

Many SBFVs are much longer than 35 meters. A 2019 public notice from the Taishan municipal government in Guangdong Province indicates that, among the 49 SBFVs built between 2015 and 2017 and qualified to receive vessel construction or renovation subsidies from the central government, 38 (77.6 percent) measured at least 55 meters, nine (18.4 percent) measured 45–47 meters, and two (4.1 percent) measured 43.2 meters.¹⁴² Therefore, large fishing vessels with a license to operate in the South China Sea, especially those measuring at least 55 meters, are likely to be absorbed into the maritime militia, thereby making abnormally large vessel size a strong supporting indicator.

Understaffing is another important indicator. Understaffing is defined as a vessel having a smaller number of crew onboard than expected for full engagement in fishing operations. For example, a 58-meter-long light-falling-net vessel targeting the Spratly waters ordinarily requires 15 fishermen on board.¹⁴³ If a similarly sized fishing vessel operating in the same waters has a significantly smaller crew (e.g., six), it is understaffed. Understaffing of fishing vessels operating in geopolitically sensitive waters (south of 12 degrees north latitude in the South China Sea), especially on large vessels, is a strong secondary indicator that those vessels are not fully engaged in fishing.

The number of crew on board a given vessel can be obtained from government reports of fishermen covered by mandatory personal safety insurance. It is unlikely that a vessel owner who can afford to finance an expensive, large fishing vessel would be unable or unwilling to purchase the relatively cheap personal safety insurance for fishermen that is required by law. A 2020 insurance report from

the Taishan municipal government shows that large fishing vessels (47–64 meters in length) with a history of appearance south of the 12th parallel in the South China Sea, whether owned by companies or individuals, are significantly understaffed when compared either to the aforementioned 15-crew “standard” fishing vessel or to similarly sized fishing boats that are owned by the same company or individual but that do not operate in disputed waters.¹⁴⁴

Indicator 6: Is the fishing vessel’s ownership connected to the Chinese government?

In some instances, the presence of Chinese government entities within the corporate chain of a vessel’s ownership may also be an indication of potential militia affiliation. But as links between vessel ownership and the Chinese government were not found for the majority of maritime militia vessels identified in this report, this should be considered strictly a supporting indicator.

Ownership information was found through publicly available sources, such as provincial fishing vessel subsidy lists, corporate lawsuits, and media references to vessels. Where the registered owner of a suspected vessel was a legal entity, such as a company or fishing cooperative, Chinese corporate records were consulted to identify the legal entity’s shareholders. If the legal entity owner’s majority shareholder was another legal entity, corporate records were again consulted to find their shareholders, with this process continuing until either a natural person majority shareholder or an entity which could not be built out using corporate records—such as a government financial office, like China’s State-owned Assets Supervision and Administration Commission of State Council (SASAC)—was found. These networks were then surveyed for any government entities.

Whitsun Reef: Implications for Militia Identification

In March and April 2021, both the Philippines and Vietnam made efforts to gather and publicly release video and photographs of Chinese maritime militia vessels massed at Whitsun Reef, a mostly submerged and unoccupied feature in the Spratly Islands’ Union Banks. This event would turn out to have a major influence on the production of this report, especially regarding the identification of militia vessels. The photographs and information gathered by ships on site at Whitsun Reef, supplemented by follow-up research on remote sensing platforms, served as the single largest source of positive militia identifications for this project. The incident was, to some extent, a crucible which helped to test and form the above methodology. It also revealed the power of conventional reconnaissance to uncover crucial information about the militia that would have been unavailable through remote sensing alone.

THE MILITIA DEPLOYMENT

In many ways, the actions of the Chinese militia vessels at Whitsun Reef were not particularly special. The presence of significant numbers of Chinese fishing vessels at Whitsun Reef had been reported by Radio Free Asia a year earlier, and reviews of historical satellite imagery suggest it may have begun even earlier, in the fall of 2019.¹⁴⁵ And while over 200 Chinese fishing vessels gathered in one location is unusual, it is not unprecedented: similar “swarming” activities have occurred near Philippine-occupied Thitu Island with some regularity for at least the past three years.¹⁴⁶ And though the ultimate intent of the Chinese militia vessels that gathered at Whitsun Reef remains subject to speculation, the potential for conflict would seem to have been lower than at other deployments to occupied features or hydrocarbon standoffs.

Nevertheless, the Whitsun deployment became one of the most important recent events in the South China Sea because of the Philippine response. In early March, the National Task Force on the West Philippine Sea, an interagency body housed within the Presidential Office in Manila, began releasing photos from patrols conducted by the Philippine Coast Guard at Whitsun Reef. The first of these patrols occurred on March 7 and captured Chinese vessels anchored and tied together, many with visible vessel names and bow numbers. These photo releases were coupled with demands from Secretary of National Defense Delfin Lorenzana and Secretary of Foreign Affairs Teodoro Locsin Jr. for China to withdraw the vessels.



Video stills released by the Philippines showing Yue Zhan Yu 08043, 08042 and Yue Xin Hui Yu 60138, 60139 at Whitsun Reef, April 12, 2021. Credit: National Task Force on the West Philippine Sea

The Philippine patrols provided photographic and video proof of the Chinese fishing flotilla's presence, leading to the identification of 14 previously unknown militia vessels.¹⁴⁷ This triggered other parties to follow up on these efforts. Vietnam, which occupies several features near Whitsun, followed Manila's lead by publishing its own photos of Chinese vessels at Whitsun in 2020 and 2021 in a series of articles in state media outlet Thanh Nien. This led to the identification of an additional 10 militia vessels.¹⁴⁸ In addition to these publicly released photos, a source provided CSIS with photographs of ship-to-ship AIS data collected at Whitsun that had not been visible on commercial satellite-based platforms. This revealed identifying information for over 80 more Chinese vessels involved in the deployment.

Along with providing new photos, the Thanh Nien articles reported previously unknown details about China's militia activity, including some derived from interviews with Vietnamese military and fishers operating out of Vietnam's outposts at Grierson Reef and Sin Cowe Island. One article cited officials from Vietnam Fisheries Resources Surveillance saying that the nine *Yue Tai Yu* vessels owned by Taishan Fancheng Fisheries Development conduct water cannon exercises weekly, calling them "shock ships" that specialize in protecting Chinese oil rigs and construction ships and repelling those of other claimants.¹⁴⁹ Another article reported that in mid-April 2021, approximately 100 boats coming from Whitsun Reef dropped anchor at unoccupied Kennan Reef, where speedboats carrying PLA soldiers from China's outpost on nearby Hughes Reef were seen driving among them.¹⁵⁰ A photograph in an April 30 article showed a suspected Chinese militia vessel near Hughes without any name or number painted on its hull; it was reported to have erased it in order to conduct reconnaissance without being

identified.¹⁵¹ Additionally, several articles feature interviews describing Vietnamese efforts to destroy and remove Chinese buoys placed at Whitsun and other features in the Union Banks—a practice dating back as far as 1988 and which reportedly continues today.¹⁵²

By May 2021, nearly all Chinese vessels had left Whitsun Reef, suggesting that the Philippine publicity campaign—and the international follow-up it triggered—had succeeded in a narrow sense. Most of the Chinese vessels simply went to nearby features permanently occupied by China, including Hughes, nine nautical miles to the southwest of Whitsun, and Gaven Reef, 27 nautical miles to the northwest.

TAKEAWAYS

In the end, the Whitsun Reef deployment had unique implications for both the public knowledge of China's maritime militia and the future of monitoring gray zone operations in the South China Sea.

This report identified 103 Chinese maritime militia vessels present at Whitsun. The vast majority of these identifications came from on-site photographs and ship-to-ship AIS. Remote sensing data served mostly to provide additional background on these vessels once identified, and to corroborate when they had left their homeports en route to Whitsun. Only a small number could be identified at the reef through remote sensing data alone.

That so many Chinese vessels were visible over ship-to-ship AIS disabused the authors of an assumption that they, along with the wider analytic community, previously held: that most Chinese maritime militia boats spoof or disable their AIS transceivers when operating in disputed waters. Whitsun suggests that many, if not most, do broadcast AIS, but that they are equipped with Class B transponders that prevent them from being regularly tracked by satellite-based receivers. Most of the militia vessels that appeared on ship-to-ship AIS had entries in commercial AIS databases and could be seen heading south from ports on the Chinese mainland in the weeks and months prior to their appearance at Whitsun—but their signals were lost as they moved farther from the coast. This all suggests that the militia can still be monitored using AIS by coast guard and naval patrols around the Spratlys, as well as by transceivers based on the islands.

Whitsun Reef demonstrated the limitations of satellite-based remote sensing and showcased the unique powers of on-site reporting. While commercial satellite imagery taken of Whitsun in March and April allowed for the counting of vessels and a general distinction between vessel types, video and photographs taken on the water were able to identify individual vessels by name and demonstrate to even the most skeptical audience that these were, in fact, Chinese fishing vessels, gathered en masse, not fishing. Vietnamese interviews with eyewitnesses revealed additional details about militia activity that would have been impossible to discover otherwise.

This, in turn, suggests that regional actors such as the Philippines, Vietnam, and others with the capability to operate vessels and aircraft around the Spratly Islands can play an indispensable role in identifying and publicizing China's maritime militia deployments. Militaries and law enforcement agencies with these capabilities are naturally predisposed toward protecting the information they gather rather than releasing it publicly, but this episode demonstrates how the public release of such information may play to their advantage. By exposing ongoing gray zone operations with video, photographic, and other convincing evidence, regional actors can create opportunities for others to join them in support of international rules and norms. They can simultaneously reduce the effectiveness of misinformation or disinformation that is released to distract from or explain away

ongoing events. And by doing so, they can impose reputational costs on Beijing for its use of these paramilitary actors. Such information, released publicly, can then be utilized by academics and civil society groups to uncover even more about the militia.

Open-source and commercially available data is necessary to comprehensively map the Chinese maritime militia force, but it is insufficient. The on-the-water capabilities of regional governments are a key ingredient, as they were at Whitsun.

Conclusions

The findings of this report should put to rest many of the doubts that have until now precluded a shared public understanding of China’s maritime militia.

The militia is no secret; a wealth of publicly available Chinese government documents, media reports, academic articles, and other materials openly discuss its affairs. It consists of professional militia—uniformed crew operating vessels constructed with military features, such as weapons storage facilities—as well as large and powerful civilian fishing vessels either recruited and renovated or purpose-built as SBFVs to fulfill China’s political objectives in disputed waters. At present, roughly 300 such vessels operate at any given time in disputed areas of the South China Sea, hailing mostly from 10 ports across Hainan and Guangdong Provinces. Their operations are funded by the Chinese government through subsidies that incentivize local actors to construct vessels in accordance with military specifications and to operate them in disputed waters, ready to assist Chinese law enforcement and naval forces when necessary. The corporate structures behind militia vessels are not complex creations designed to obfuscate the ultimate owners, but are simple and direct, and they correspond to the localities where these vessels are homeported. With the exception of professional fleets operated by dedicated companies in Hainan, the ownership of militia vessels is diversified among a large number of companies. This phenomenon reflects the overall decentralized nature of the current militia, which involves local entities and businesses responding to funding signals sent by larger policy initiatives over the last decade.

In constructing a methodology for identifying militia vessels, this report also comes to several conclusions. First, direct identification in official Chinese sources or state media remains the most straightforward and conclusive indicator of militia activity. That said, it is unlikely that all, or even most, maritime militia vessels can be identified in this way. There is also always the risk that Chinese

sources once willing to openly publish militia vessel names or photos cease to do so amid heightened international scrutiny.

This makes behavior-based identification, informed by remote sensing data and traditional on-site reporting, the most promising avenue for continued identification of militia vessels. Commercial satellite imagery and AIS data play an important role in identifying and tracking militia deployments. These tools may prove even more effective in the future, given what has been learned about the militia's behavior and geographic distribution. But the results of this study indicate that on-site photography and video, as well as ship-to-ship AIS collection, offer the greatest potential to directly identify militia vessels and document their behavior in a way that not only enhances the opportunities for follow-up research, but also creates an immediate impact by revealing the militia's size, scope, and activities to a much broader audience in a convincing fashion.

Those working to identify militia vessels should couple such efforts with research into supporting indicators that can often provide additional evidence of militia affiliation. Association with known militia vessels, ports, and large subsidies indicating that a ship is an SBFV are strong indicators that a vessel warrants further study. Large vessels over 50 meters operating in disputed waters, and especially understaffed vessels with less than 10 crew members, are also deserving of further scrutiny. And though corporate connections to Chinese government entities proved inconclusive as a means of identifying militia vessels outright, ships that do have such connections, especially on top of other militia indicators, are worth investigating.

This report has already identified 122 militia vessels, with an additional 52 likely to be militia. By coupling continued reporting efforts from actors in the South China Sea with additional research using open-source Chinese language materials and remote sensing data, the complete identification of the maritime militia is not only possible, but likely. And if the militia can be identified and mapped in its entirety, with its motives and methods widely known, it will lose its effectiveness as a gray zone force.

About the Authors

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The Center for Advanced Defense Studies (C4ADS) is a 501(c)(3) nonprofit organization dedicated to data-driven analysis and evidence-based reporting of conflict and security issues worldwide. It seeks to alleviate the analytical burden carried by public sector institutions by applying manpower, depth, and rigor to questions of conflict and security. Its approach leverages nontraditional investigative techniques and emerging analytical technologies. It recognizes the value of working on the ground in the field, capturing local knowledge, and collecting original data to inform its analysis. At the same time, it employs cutting edge technology to manage and analyze that data. The result is an innovative analytical approach to conflict prevention and mitigation.

Appendices

APPENDIX A: IDENTIFIED MARITIME MILITIA VESSELS, OWNERS, AND ULTIMATE BENEFICIAL OWNERS

This list contains ships this study identifies as maritime militia vessels with high confidence due to their meeting one or more primary indicators (as detailed in Part V).

VESSEL NAME	CITY OF REGISTRATION	MMSI	DIRECT OWNER	ULTIMATE BENEFICIAL OWNER
Bin Hai (滨海) 285		412300330	China Oilfield Services Limited (中海油田服务股份有限公司) ¹⁵³	State-owned Assets Supervision and Administration Commission of State Council (SASAC) (国务院国有资产监督管理委员会)
Gui Bei Yu (桂北渔) 39198	Beihai, Guangxi	412501101	Lu Dinglian (卢定莲) ¹⁵⁴	Lu Dinglian (卢定莲)
Gui Bei Yu (桂北渔) 80699	Beihai, Guangxi	412500677	Li Rirong (李日荣) ¹⁵⁵	Li Rirong (李日荣)
Qiong Lin Yu (琼临渔) 01456	Lingao, Hainan	412524861	-	-
Qiong Lin Yu (琼临渔) 11587	Lingao, Hainan	412520361	Huang Zaibai (黄在百) ¹⁵⁶	Huang Zaibai (黄在百)
Qiong Lin Yu (琼临渔) 60017	Lingao, Hainan	412524858	-	-
Qiong Lin Yu (琼临渔) 60018	Lingao, Hainan	412520251	-	-
Qiong Lin Yu (琼临渔) 60019	Lingao, Hainan	412520252	-	-
Qiong Lin Yu (琼临渔) 60020	Lingao, Hainan	412524877	-	-
Qiong Qiong Hai Yu (琼琼海渔) 1101	Tanmen, Hainan	-	-	-
Qiong Sansha Yu (琼三沙渔) 00101	Sansha, Hainan	412520152	-	-
Qiong Sansha Yu (琼三沙渔) 00111	Sansha, Hainan	412520163	Sansha Fisheries Development Co. Ltd. (SFDC) (三沙市渔业发展有限公司 (三沙渔业公司)) ¹⁵⁷	Sansha City Finance Office (三沙市财政局)
Qiong Sansha Yu (琼三沙渔) 00114	Sansha, Hainan	412520166	-	-
Qiong Sansha Yu (琼三沙渔) 00212	Sansha, Hainan	-	Sansha Fisheries Development Co. Ltd. (SFDC) (三沙市渔业发展有限公司 (三沙渔业公司)) ¹⁵⁸	Sansha City Finance Office (三沙市财政局)
Qiong Sansha Yu (琼三沙渔) 00301	Sansha, Hainan	212520221	-	-
Qiong Sansha Yu (琼三沙渔) 00312	Sansha, Hainan	412520233	-	-
Qiong Sansha Yu (琼三沙渔) 00315	Sansha, Hainan	412520194	-	-

VESSEL NAME	CITY OF REGISTRATION	MMSI	DIRECT OWNER	ULTIMATE BENEFICIAL OWNER
Qiong Sanya Yu (琼三亚渔) 72108	Sanya, Hainan	412168668	Sanya Yufeng Fishermen Professional Cooperative (三亚榆丰渔民专业合作社) ¹⁵⁹	Liang Fujiao (梁符娇)
Qiong Sanya Yu (琼三亚渔) 72113	Sanya, Hainan	412524557	Hainan Fugang Ocean Fishery Co. Ltd. (海南福港远洋渔业有限公司) ¹⁶⁰	Lin Xinrui (林心瑞)
Qiong Sanya Yu (琼三亚渔) 72118	Sanya, Hainan	412523272	-	-
Qiong Sanya Yu (琼三亚渔) 72122	Sanya, Hainan	412523671	-	-
Qiong Sanya Yu (琼三亚渔) 72125	Sanya, Hainan	412721269	-	-
Qiong Sanya Yu (琼三亚渔) 72126	Sanya, Hainan	412523256	-	-
Qiong Sanya Yu (琼三亚渔) 72127	Sanya, Hainan	412524461	-	-
Qiong Sanya Yu (琼三亚渔) 72130	Sanya, Hainan	412524449	-	-
Qiong Sanya Yu (琼三亚渔) 72131	Sanya, Hainan	412524443	-	-
Qiong Sanya Yu (琼三亚渔) 72132	Sanya, Hainan	412524436	-	-
Qiong Sanya Yu (琼三亚渔) 72135	Sanya, Hainan	412524433	-	-
Qiong Sanya Yu (琼三亚渔) 72136	Sanya, Hainan	412523613	-	-
Qiong Sanya Yu (琼三亚渔) 72137	Sanya, Hainan	412520344	Sanya Yufeng Fishermen Professional Cooperative (三亚榆丰渔民专业合作社) ¹⁶¹	Liang Fujiao (梁符娇)
Qiong Sanya Yu (琼三亚渔) 72199	Sanya, Hainan	412520903	-	-
Taisha (台沙) 2083	Hong Kong/Macau	-	-	-
Yue Jiang Cheng Yu (粤江城渔) 60666	Yangjiang, Guangdong	412474386	Yangjiang Sansha Fisheries Co. Ltd. (阳江市三沙渔业有限公司) ¹⁶²	Lin Xingsong (林杏松)
Yue Jiang Cheng Yu (粤江城渔) 60668	Yangjiang, Guangdong	-	-	-
Yue Lei Yu (粤雷渔) 07888	Leizhou, Guangdong	412473656	Luo Erchuan (罗儿川) ¹⁶³	Luo Erchuan (罗儿川)

VESSEL NAME	CITY OF REGISTRATION	MMSI	DIRECT OWNER	ULTIMATE BENEFICIAL OWNER
Yue Lei Yu (粤雷渔) 08888	Leizhou, Guangdong	412472879	Leizhou Wushi Run-ming Fishery Professional Cooperative (雷州市乌石润明渔业专业合作社) ¹⁶⁴	Song Lihua (宋丽花)
Yue Lei Yu (粤雷渔) 09999	Leizhou, Guangdong	412472878	Leizhou Wushi Run-ming Fishery Professional Cooperative (雷州市乌石润明渔业专业合作社) ¹⁶⁵	Song Lihua (宋丽花)
Yue Lei Yu (粤雷渔) 12066	Leizhou, Guangdong	412472809	Zhanjiang Kaixuan Ocean Fishery Co. Ltd. (湛江市凯旋远洋渔业有限公司) ¹⁶⁶	Zheng Yao (郑要)
Yue Lei Yu (粤雷渔) 77777	Leizhou, Guangdong	412473002	Guangdong Xingchen Marine Fishery Co. Ltd. (广东星晨海洋渔业有限公司) ¹⁶⁷	Mo Junzhong (莫骏忠)
Yue Lei Yu (粤雷渔) 88888	Leizhou, Guangdong	412473003	Guangdong Xingchen Marine Fishery Co. Ltd. (广东星晨海洋渔业有限公司) ¹⁶⁸	Mo Junzhong (莫骏忠)
Yue Lei Yu (粤雷渔) 99999	Leizhou, Guangdong	412473004	Guangdong Xingchen Marine Fishery Co. Ltd. (广东星晨海洋渔业有限公司) ¹⁶⁹	Mo Junzhong (莫骏忠)
Yue Lian Yu (粤廉渔) 11113	Lianjiang, Guangdong	412472872	Li Yatong (李亚统)	Li Yatong (李亚统)
Yue Lian Yu (粤廉渔) 11688	Lianjiang, Guangdong	412390125	Qiu Shiyang (邱石养) ¹⁷⁰	Qiu Shiyang (邱石养)
Yue Lian Yu (粤廉渔) 11999	Lianjiang, Guangdong	412463949	Qiu Rilai (邱日来) ¹⁷¹	Qiu Rilai (邱日来)
Yue Lian Yu (粤廉渔) 12333	Lianjiang, Guangdong	412464002	Lianjiang Tenglong Fishery Co. Ltd. (廉江市腾龙渔业有限公司)	Long Chengxin (龙成鑫)
Yue Lian Yu (粤廉渔) 21666	Lianjiang, Guangdong	412470814	Huang Ping (黄平) ¹⁷²	Huang Ping (黄平)
Yue Lian Yu (粤廉渔) 22266	Lianjiang, Guangdong	412464018	Lianjiang Haishun-feng Fishery Co. Ltd. (廉江市海顺风渔业有限公司) ¹⁷³	Chen Chengquan (陈成全)
Yue Lian Yu (粤廉渔) 22288	Lianjiang, Guangdong	412464003	Lianjiang Haishun-feng Fishery Co. Ltd. (廉江市海顺风渔业有限公司) ¹⁷⁴	Chen Chengquan (陈成全)
Yue Lian Yu (粤廉渔) 22888	Lianjiang, Guangdong	412473147	Lianjiang Jindong Fishery Co. Ltd. (廉江市锦东渔业有限公司)	Qi Jindong (戚锦东)
Yue Lian Yu (粤廉渔) 24666	Lianjiang, Guangdong	412463728	He Tai (何太) ¹⁷⁵	He Tai (何太)

VESSEL NAME	CITY OF REGISTRATION	MMSI	DIRECT OWNER	ULTIMATE BENEFICIAL OWNER
Yue Lian Yu (粤廉渔) 24999	Lianjiang, Guangdong	412463726	He Zeji (何泽基) ¹⁷⁶	He Zeji (何泽基)
Yue Lian Yu (粤廉渔) 28128	Lianjiang, Guangdong	412464445	Lianjiang Hongde Fisheries Co. Ltd. (廉江市红德渔业有限公司)	Li Zhongde (李忠德)
Yue Lie Yu (粤猎渔) 12388	Guangzhou, Guangdong	412464836	-	-
Yue Long Gang Yu (粤龙岗渔) 82818	Shenzhen, Guangdong	412463539	Shenzhen Bangchong Agricultural Technology Co. Ltd. (深圳市邦潮农业科技有限公司) ¹⁷⁷	Qin Jun (邱军)
Yue Long Gang Yu (粤龙岗渔) 82828	Shenzhen, Guangdong	412463538	Shenzhen Bangchong Agricultural Technology Co Ltd (深圳市邦潮农业科技有限公司) ¹⁷⁸	Qin Jun (邱军)
Yue Ma Yu 60228		412465077	-	-
Yue Mao Bin Yu (粤茂滨渔) 42812 ¹⁷⁹	Maoming, Guangdong	412474531	Maoming Desheng Fisheries Company Ltd. (茂名市德胜渔业有限公司) ¹⁸⁰	Ling Lianwei (凌联伟)
Yue Mao Bin Yu (粤茂滨渔) 42812	Maoming, Guangdong	412474531	Maoming Desheng Fisheries Company Ltd. (茂名市德胜渔业有限公司) ¹⁸¹	Ling Lianwei (凌联伟)
Yue Mao Bin Yu (粤茂滨渔) 42881	Maoming, Guangdong	412472796	Maoming Desheng Fisheries Company Ltd. (茂名市德胜渔业有限公司) ¹⁸²	Ling Lianwei (凌联伟)
Yue Mao Bin Yu (粤茂滨渔) 42882	Maoming, Guangdong	412472795	Maoming Desheng Fisheries Company Ltd. (茂名市德胜渔业有限公司) ¹⁸³	Ling Lianwei (凌联伟)
Yue Mao Bin Yu (粤茂滨渔) 42883	Maoming, Guangdong	412472794	Maoming Desheng Fisheries Company Ltd. (茂名市德胜渔业有限公司) ¹⁸⁴	Ling Lianwei (凌联伟)
Yue Mao Bin Yu (粤茂滨渔) 42885	Maoming, Guangdong	412472793	Maoming Desheng Fisheries Company Ltd. (茂名市德胜渔业有限公司) ¹⁸⁵	Ling Lianwei (凌联伟)
Yue Mao Bin Yu (粤茂滨渔) 42886	Maoming, Guangdong	412472792	Maoming Desheng Fisheries Company Ltd. (茂名市德胜渔业有限公司) ¹⁸⁶	Ling Lianwei (凌联伟)
Yue Shan Cheng Yu (粤汕城渔) 16117	Shanwei, Guangdong	412472657	-	-
Yue Shan Cheng Yu (粤汕城渔) 16118	Shanwei, Guangdong	412474783	-	-

VESSEL NAME	CITY OF REGISTRATION	MMSI	DIRECT OWNER	ULTIMATE BENEFICIAL OWNER
Yue Shan Cheng Yu (粤汕城渔) 20341	Shanwei, Guangdong	412488833	-	-
Yue Shan Cheng Yu (粤汕城渔) 20346	Shanwei, Guangdong	412483535	-	-
Yue Shan Cheng Yu (粤汕城渔) 20361	Shanwei, Guangdong	412485279	-	-
Yue Tai Yu (粤台渔) 11028	Taishan, Guangdong	412461607	Taishan Runhe Marine Fisheries Fishing Co. Ltd (台山市润和海洋渔业捕捞有限公司) ¹⁸⁷	Lin Rixi, He Rizhao (林日喜, 何日照)
Yue Tai Yu (粤台渔) 11266	Taishan, Guangdong	412472887	Taishan Zhaoxi Pelagic Fisheries Fishing Co. Ltd (台山市照喜远洋渔业捕捞有限公司) ¹⁸⁸	Mo Meixing (莫美兴)
Yue Tai Yu (粤台渔) 11302	Taishan, Guangdong	412470993	He Rizhuang (何日庄) ¹⁸⁹	He Rizhuang (何日庄)
Yue Tai Yu (粤台渔) 12588	Taishan, Guangdong	412472784	Taishan Xierun Marine Fisheries Co Ltd (台山市协润海洋渔业有限公司) ¹⁹⁰	Mo Meixing (莫美兴)
Yue Tai Yu (粤台渔) 12589	Taishan, Guangdong	412472785	Taishan Xierun Marine Fisheries Co Ltd (台山市协润海洋渔业有限公司) ¹⁹¹	Mo Meixing (莫美兴)
Yue Tai Yu (粤台渔) 12898	Taishan, Guangdong	412464567	Lin Jinbo (林进波) ¹⁹²	Lin Jinbo (林进波)
Yue Tai Yu (粤台渔) 18000	Taishan, Guangdong	412472778	Taishan Fancheng Fisheries Development Co. Ltd. (台山市帆程渔业发展有限公司) ¹⁹³	Weng Yilan, Weng Jianxin (翁一岚, 翁健心)
Yue Tai Yu (粤台渔) 18111	Taishan, Guangdong	412472779	Taishan Fancheng Fisheries Development Co. Ltd. (台山市帆程渔业发展有限公司) ¹⁹⁴	Weng Yilan, Weng Jianxin (翁一岚, 翁健心)
Yue Tai Yu (粤台渔) 18168	Taishan, Guangdong	412474203	Taishan Changhesheng Fisheries Development Co. (台山市帆程渔业发展有限公司) ¹⁹⁵	Huang Guichang (黄桂昌)
Yue Tai Yu (粤台渔) 18222	Taishan, Guangdong	412472781	Taishan Fancheng Fisheries Development Co. Ltd. (台山市帆程渔业发展有限公司) ^{196, 197}	Weng Yilan, Weng Jianxin (翁一岚, 翁健心)

VESSEL NAME	CITY OF REGISTRATION	MMSI	DIRECT OWNER	ULTIMATE BENEFICIAL OWNER
Yue Tai Yu (粤台渔) 18333	Taishan, Guangdong	412472782	Taishan Fancheng Fisheries Development Co. Ltd. (台山市帆程渔业发展有限公司) ¹⁹⁸	Weng Yilan, Weng Jianxin (翁一岚, 翁健心)
Yue Tai Yu (粤台渔) 18555	Taishan, Guangdong	412472783	Taishan Fancheng Fisheries Development Co. Ltd. (台山市帆程渔业发展有限公司) ¹⁹⁹	Weng Yilan, Weng Jianxin (翁一岚, 翁健心)
Yue Tai Yu (粤台渔) 18666	Taishan, Guangdong	412472884	Taishan Fancheng Fisheries Development Co. Ltd. (台山市帆程渔业发展有限公司) ²⁰⁰	Weng Yilan, Weng Jianxin (翁一岚, 翁健心)
Yue Tai Yu (粤台渔) 18777	Taishan, Guangdong	412472885	Taishan Fancheng Fisheries Development Co. Ltd. (台山市帆程渔业发展有限公司) ²⁰¹	Weng Yilan, Weng Jianxin (翁一岚, 翁健心)
Yue Tai Yu (粤台渔) 18888	Taishan, Guangdong	412472883	Taishan Fancheng Fisheries Development Co. Ltd. (台山市帆程渔业发展有限公司) ²⁰²	Weng Yilan, Weng Jianxin (翁一岚, 翁健心)
Yue Tai Yu (粤台渔) 18999	Taishan, Guangdong	412472882	Taishan Fancheng Fisheries Development Co. Ltd. (台山市帆程渔业发展有限公司) ²⁰³	Weng Yilan, Weng Jianxin (翁一岚, 翁健心)
Yue Tai Yu (粤台渔) 61166	Taishan, Guangdong	412463291	Tan Hongwei (谭红卫) ²⁰⁴	Tan Hongwei (谭红卫)
Yue Tai Yu (粤台渔) 61999	Taishan, Guangdong	412463147	Chen Songhan (陈松汉) ²⁰⁵	Chen Songhan (陈松汉)
Yue Tai Yu (粤台渔) 62098	Taishan, Guangdong	412464942	Tan Dahuan (谭达欢) ²⁰⁶	Tan Dahuan (谭达欢)
Yue Tai Yu (粤台渔) 63888	Taishan, Guangdong	412463784	Zhu Xuefeng (朱雪峰) ²⁰⁷	Zhu Xuefeng (朱雪峰)
Yue Xia Yu (粤霞渔) 90121	Zhanjiang, Guangdong	412463331	Zhanjiang Yanghai Fishery Professional Cooperative (湛江市洋海渔业专业合作社) ²⁰⁸	Chen Xiuzhen (陈秀珍)
Yue Xia Yu (粤霞渔) 90122	Zhanjiang, Guangdong	412463345	Zhanjiang Yanghai Fishery Professional Cooperative (湛江市洋海渔业专业合作社) ^{209 210}	Chen Xiuzhen (陈秀珍)

VESSEL NAME	CITY OF REGISTRATION	MMSI	DIRECT OWNER	ULTIMATE BENEFICIAL OWNER
Yue Xia Yu (粤霞渔) 90126	Zhanjiang, Guangdong	412472812	Zhanjiang Yanghai Fishery Professional Cooperative (湛江市洋海渔业专业合作社) ²¹¹	Chen Xiuzhen (陈秀珍)
Yue Xin Hui Yu (粤新会渔) 20089	Jiangmen, Guangdong	412464873	Liang Wenliang (梁文亮) ²¹²	Liang Wenliang (梁文亮)
Yue Xin Hui Yu (粤新会渔) 60126	Jiangmen, Guangdong	412461406		
Yue Xin Hui Yu (粤新会渔) 60128	Jiangmen, Guangdong	412461626	Jiangmen Xinhui District Honghai Fishery Professional Cooperative (江门市新会区宏海渔业专业合作社) ²¹³	Yang Liuan, Yang Yexing (杨六安, 杨业兴)
Yue Xin Hui Yu (粤新会渔) 60129	Jiangmen, Guangdong	412465949	Jiangmen Xinhui District Honghai Fishery Professional Cooperative (江门市新会区宏海渔业专业合作社) ²¹⁴	Yang Liuan, Yang Yexing (杨六安, 杨业兴)
Yue Xin Hui Yu (粤新会渔) 60136	Jiangmen, Guangdong	412460094	Chen Wuxiang (陈务祥) ²¹⁵	Chen Wuxiang (陈务祥)
Yue Xin Hui Yu (粤新会渔) 60138	Jiangmen, Guangdong	412465085	Deng Fengjuan (邓凤娟) ²¹⁶	Deng Fengjuan (邓凤娟)
Yue Xin Hui Yu (粤新会渔) 60139	Jiangmen, Guangdong	412461637 ²¹⁷	Deng Fengjuan (邓凤娟) ²¹⁸	Deng Fengjuan (邓凤娟)
Yue Yang Dong Yu (粤阳东渔) 16288	Yangjiang, Guangdong	412472849	Yangjiang Yangdong Xingsheng South China Sea Fishing Co. Ltd. (阳江市阳东兴盛南海捕捞有限公司) ²¹⁹	Rao Huiqing (饶惠清)
Yue Yang Jiang Yu (粤阳江渔) 05127	Yangjiang, Guangdong	412476964	Lin Jinwang (林进旺) ²²⁰	Lin Jinwang (林进旺)
Yue Yang Jiang Yu (粤阳江渔) 05128	Yangjiang, Guangdong	-	Lin Jincal (林进才) ²²¹	Lin Jincal (林进才)
Yue Yang Xi Yu (粤阳西渔) 31668	Yangjiang, Guangdong	412467396	Lin Xingping (林杏平) ²²²	Lin Xingping (林杏平)
Yue Yang Xi Yu (粤阳西渔) 31669	Yangjiang, Guangdong	412460951	Lin Juhe (林举何) ²²³	Lin Juhe (林举何)
Yue Yang Xi Yu (粤阳西渔) 96491	Yangjiang, Guangdong	412470588	Lin Jinzhan (林进栈) ²²⁴	Lin Jinzhan (林进栈)
Yue Yang Xi Yu (粤阳西渔) 96492	Yangjiang, Guangdong	412460654	Lin Ling (林玲) ²²⁵	Lin Ling (林玲)
Yue Yang Xi Yu (粤阳西渔) 96493	Yangjiang, Guangdong	412460655	Lin Ling (林玲) ²²⁶	Lin Ling (林玲)
Yue Yang Xi Yu (粤阳西渔) 96512	Yangjiang, Guangdong	412474275	Lin Ling (林玲) ²²⁷	Lin Ling (林玲)

VESSEL NAME	CITY OF REGISTRATION	MMSI	DIRECT OWNER	ULTIMATE BENEFICIAL OWNER
Yue Yang Xi Yu (粤阳西渔) 96515	Yangjiang, Guangdong	412472839	Lin Ningyu (林宁宇) ²²⁸	Ling Ningyu (林宁宇)
Yue Yang Xi Yu (粤阳西渔) 96517	Yangjiang, Guangdong	412472842	Lin Ningyu (林宁宇)	Ling Ningyu (林宁宇)
Yue Yang Xi Yu (粤阳西渔) 96518	Yangjiang, Guangdong	412474276	Lin Shiyang (林仕养)	Lin Shiyang (林仕养)
Yue Yang Xi Yu (粤阳西渔) 96519	Yangjiang, Guangdong	412472844	Lin Zhenru (林振如)	Lin Zhenru (林振如)
Yue Yang Xi Yu (粤阳西渔) 96520	Yangjiang, Guangdong	412472845	Yang Xingxiang (杨幸祥)	Yang Xingxiang (杨幸祥)
Yue Yang Xi Yu (粤阳西渔) 96523	Yangjiang, Guangdong	412473364	Guangdong ShunXin Marine Fishery Group Co. Ltd. (广东顺欣海洋渔业集团有限公司) ²²⁹	Lin Zhi (林织)
Yue Yang Xi Yu (粤阳西渔) 96526	Yangjiang, Guangdong	412473378	Guangdong ShunXin Marine Fishery Group Co. Ltd. (广东顺欣海洋渔业集团有限公司) ²³⁰	Lin Zhi (林织)
Yue Zhan Yu (粤湛渔) 00237	Zhanjiang, Guangdong	412341917	Zhanjiang Donghai Island Economic Development Zone Caifeng Fisheries Professional Cooperative (湛江东海岛经济开发区彩丰渔业专业合作社) ²³¹	Li Jiusan, Tan Feique, Liang Libin, Xiao Linqiang, Fu Feiwei, Wu Linhe, Li Junteng (李玖三, 谭妃雀, 梁李彬, 肖林强, 符妃尾, 吴林河, 李骏腾)
Yue Zhan Yu (粤湛渔) 08037	Zhanjiang, Guangdong	412463331	-	-
Yue Zhan Yu (粤湛渔) 08038	Zhanjiang, Guangdong	412463345	-	-
Yue Zhan Yu (粤湛渔) 08039	-	-	-	-
Yue Zhan Yu (粤湛渔) 08040	Zhanjiang, Guangdong	412472812	-	-
Yue Zhan Yu (粤湛渔) 08041	-	-	-	-
Yue Zhan Yu (粤湛渔) 08042	-	-	-	-
Yue Zhan Yu (粤湛渔) 08043	Zhanjiang, Guangdong	-	-	-

Source: Based on the authors' research and analysis.

Appendix B:

Likely Maritime Militia Vessels, Owners, and Ultimate Beneficial Owners

This list contains ships this study considers likely to be militia vessels due to their meeting one or more supporting indicators (as detailed in Part V).

VESSEL NAME	CITY OF REGISTRATION	MMSI	DIRECT OWNER	ULTIMATE BENEFICIAL OWNER
Qiong Lin Yu (琼临渔) 19002	Lingao, Hainan	412345687	Lingao Wangle Fishery Professional Cooperative (临高旺乐渔业专业合作社) ²³²	Chen Buhuan (陈不换)
Qiong Sansha Yu (琼三沙渔) 00001	Sansha, Hainan	-	-	-
Qiong Sansha Yu (琼三沙渔) 00002	Sansha, Hainan	412520142	-	-
Qiong Sansha Yu (琼三沙渔) 00006	Sansha, Hainan	412520146	-	-
Qiong Sansha Yu (琼三沙渔) 00008	Sansha, Hainan	412520146	-	-
Qiong Sansha Yu (琼三沙渔) 00009	Sansha, Hainan	412011573	-	-
Qiong Sansha Yu (琼三沙渔) 00010	Sansha, Hainan	413011561	-	-
Qiong Sansha Yu (琼三沙渔) 00106	Sansha, Hainan	412520157	-	-
Qiong Sansha Yu (琼三沙渔) 00111	Sansha, Hainan	412520163	-	-
Qiong Sansha Yu (琼三沙渔) 00112	Sansha, Hainan	412520164	-	-
Qiong Sansha Yu (琼三沙渔) 00115	Sansha, Hainan	412520167	-	-
Qiong Sansha Yu (琼三沙渔) 00119	Sansha, Hainan	412520172	-	-
Qiong Sansha Yu (琼三沙渔) 00201	Sansha, Hainan	-	-	-
Qiong Sansha Yu (琼三沙渔) 00206	Sansha, Hainan	412520206	-	-
Qiong Sansha Yu (琼三沙渔) 00207	Sansha, Hainan	412520207	-	-
Qiong Sansha Yu (琼三沙渔) 00208	Sansha, Hainan	412520208	-	-
Qiong Sansha Yu (琼三沙渔) 00209	Sansha, Hainan	412520176	-	-
Qiong Sansha Yu (琼三沙渔) 00210	Sansha, Hainan	412520177	-	-

VESSEL NAME	CITY OF REGISTRATION	MMSI	DIRECT OWNER	ULTIMATE BENEFICIAL OWNER
Qiong Sansha Yu (琼三沙渔) 00211	Sansha, Hainan	412520178	-	-
Qiong Sansha Yu (琼三沙渔) 00214	Sansha, Hainan	412520182	-	-
Qiong Sansha Yu (琼三沙渔) 00220	Sansha, Hainan	412520188	-	-
Qiong Sansha Yu (琼三沙渔) 00221	Sansha, Hainan	412520189	-	-
Qiong Sansha Yu (琼三沙渔) 00223	Sansha, Hainan	412520210	-	-
Qiong Sansha Yu (琼三沙渔) 00224	Sansha, Hainan	412520211	-	-
Qiong Sansha Yu (琼三沙渔) 00225	Sansha, Hainan	412520212	-	-
Qiong Sansha Yu (琼三沙渔) 00226	Sansha, Hainan	412520213	-	-
Qiong Sansha Yu (琼三沙渔) 00227	Sansha, Hainan	412520214	-	-
Qiong Sansha Yu (琼三沙渔) 00228	Sansha, Hainan	412520215	-	-
Qiong Sansha Yu (琼三沙渔) 00229	Sansha, Hainan	412520216	-	-
Qiong Sansha Yu (琼三沙渔) 00230	Sansha, Hainan	412520217	-	-
Qiong Sansha Yu (琼三沙渔) 00231	Sansha, Hainan	412520218	-	-
Qiong Sansha Yu (琼三沙渔) 00232	Sansha, Hainan	412520219	-	-
Qiong Sansha Yu (琼三沙渔) 00306	Sansha, Hainan	412520226	-	-
Qiong Sansha Yu (琼三沙渔) 00310	Sansha, Hainan	412520231	-	-
Qiong Sansha Yu (琼三沙渔) 00311	Sansha, Hainan	412520232	-	-
Qiong Sansha Yu (琼三沙渔) 00313	Sansha, Hainan	412520192	-	-
Qiong Sansha Yu (琼三沙渔) 00314	Sansha, Hainan	412520193	-	-
Qiong Sansha Yu (琼三沙渔) 00316	Sansha, Hainan	412520195	-	-
Qiong Sansha Yu (琼三沙渔) 00317	Sansha, Hainan	412520196	-	-
Qiong Sansha Yu (琼三沙渔) 00318	Sansha, Hainan	412520197	-	-
Qiong Sansha Yu (琼三沙渔) 00401	Sansha, Hainan	412520198	-	-

VESSEL NAME	CITY OF REGISTRATION	MMSI	DIRECT OWNER	ULTIMATE BENEFICIAL OWNER
Qiong Sansha Yu (琼三沙渔) 00402	Sansha, Hainan	412520199	-	-
Qiong Sanya Yu (琼三亚渔) 72186	Sanya, Hainan	412524975	Sanya Xinma Recreational Fishery Development Co. Ltd. (三亚鑫马休闲渔业发展有限公司) ²³³	Zhang Qirong (张启荣)
Yue Mao Bin Yu (粤茂滨渔) 42212	Dianbai/Maoming	412471286	Liang Jin (梁进) ^{234, 235}	-
Yue Sui Yu (粤穗渔) 30033	Guangzhou, Guangdong	412462777	Guangzhou Pelagic Fishery Company (广州远洋渔业公司) ²³⁶	Wu Hongguang (吴洪广)
Yue Sui Yu (粤穗渔) 30035	Guangzhou, Guangdong	412462776	Guangzhou Pelagic Fishery Company (广州远洋渔业公司) ²³⁷	Wu Hongguang (吴洪广)
Yue Tai Yu (粤台渔) 11098	Taishan, Guangdong	412463494	Taishan Juxing Fisheries Co. Ltd. (台山市聚兴渔业有限公司) ²³⁸	Ye Guiqing (叶桂清)
Yue Tai Yu (粤台渔) 11981	Taishan, Guangdong	412471002	Zhang Guiyou (张贵优) ²³⁹	Zhang Guiyou (张贵优)
Yue Tai Yu (粤台渔) 23688	Taishan, Guangdong	412472931	Fang Hongbin (方鸿缤) ²⁴⁰	Fang Hongbin (方鸿缤)
Yue Tai Yu (粤台渔) 61188	Taishan, Guangdong	412463149	Lei Jianhui (雷建惠) ²⁴¹	Lei Jianhui (雷建惠)
Yue Tai Yu (粤台渔) 61868	Taishan, Guangdong	412461574	Lin Bingjia (林炳家) ²⁴²	Lin Bingjia (林炳家)
Yue Tai Yu (粤台渔) 62338	Taishan, Guangdong	412463354	Zhu Haojie (朱浩杰) ²⁴³	Zhu Haojie (朱浩杰)

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 - 106 刘德安、蓝陆瑶、农培智 [Liu Dean, Lan Luyao, and Nong Peizhi], “广西首期“浪花计划”退役军人船员100%安排就业 [Guangxi Inaugural “Spindrift Program” Retired-Veteran Crew Members Get 100% Employment],” 广西新闻网 [Guangxi News Network], April 13, 2021, <http://www.gxnews.com.cn/staticpages/20210413/>

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- 111 Devin Thorne and Ben Spevack, *Ships of State: Chinese Civil-Military Fusion and the HYSY 981 Standoff* (Washington, DC: Center for International Maritime Security, July 17, 2019), <https://cimsec.org/ships-of-state-chinese-civil-military-fusion-and-the-hysy-981-standoff/>.
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- 114 Shuxian Luo and Johnathan G. Panter, *China's Maritime Militia and Fishing Fleets* (Fort Leavenworth, KS: Army University Press, 2021), <https://www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/January-February-2021/Panter-Maritime-Militia/>; Andrew S. Erickson and Conor M. Kennedy, *China's Maritime Militia* (Arlington, VA: CNA Corporation, March 7, 2016), 5, https://www.cna.org/cna_files/pdf/chinas-maritime-militia.pdf.
- 115 Erickson and Kennedy, *From Frontier to Frontline: Tanmen Maritime Militia's Leading Role Pt. 2*.
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- 117 In investigating the natural persons suspected to be part of maritime militia ownership networks through open-source reporting, this study includes possible name matches for individuals so long as said name match is affiliated with the same city jurisdiction and/or affiliated with a known corporate entity of the individual of interest, if applicable.
- 118 台山市农业农村局 [Taishan Municipal Bureau of Agriculture and Rural Affairs], “关于台山市2019年度渔业油价补贴资金公示 [Announcement about Taishan 2019 Fisheries Fuel Price Subsidy Funding],” 台山市政府网 [Taishan Municipal Government Network], July 22, 2020, <http://www.cnts.gov.cn/attachment/0/141/141133/2104251.pdf>.
- 119 Fujian Yinpeng Machinery Equipment Co. Ltd., Company Website.
- 120 “不忘初心 砥砺前行--广新海工 九艘62.8m钢制拖网远洋渔船同时交付 [Don't Forget One's Original Desire, Push Forward: Guangxin's Nine 62.8-Meter Steel Trawlers Fishing Vessels Handed Over Simultaneously],” 广新海事重工股份有限公司 [Guangxin Shipbuilding and Heavy Industry Co. Ltd.], December 12, 2017, http://www.gshi.cn/news_view.asp?id=344; Andrew S. Erickson and Ryan D. Martinson, “Exposed! Here Are China's Maritime Militia Ships at Whitsun Reef,” [andrewerickson.com](http://www.andrewerickson.com), March 29, 2021, <http://www.andrewerickson.com>.

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- 121 “广东银鹏动力设备有限公司 [Guang Dong Yinpeng Power Machinery Co. Ltd.],” 企查查 [Qichacha], August 16, 2021, <https://www.qcc.com/firm/84d19cf5ff009576fe7ed6dfb19505ca.html>.
- 122 “广东省当选的第十二届全国人民代表大会代表名单 [Guangdong Province 12th National People’s Congress Name List of Elected Delegates],” 广东省人大常委会办公厅 [Guangdong People’s Congress General Office], January 2016, http://www.rd.gd.cn/rdgzxgnr_4349/rddbmd/ljdbmd/202006/t20200601_172256.html; 政事儿 News, “23名‘80后’, 广东十三届全国人大代表候选人入选推荐名单公示 [23 ‘post-80’s’ candidates for the 13th National People’s Congress in Guangdong’s recommendation list were announced],” 搜狐 [Sohu], December 7, 2017. https://www.sohu.com/a/209091279_99900926.
- 123 “传达习近平总书记参加广东代表团审议时重要讲话精神 [Conveying the spirit of General Secretary Xi Jinping’s important speech when he participated in the deliberation of the Guangdong delegation],” 广东银鹏动力设备有限公司 [Guangdong Yinpeng Power Machinery Co. Ltd], <http://www.yinpeng.com.cn/news/html/?463.html>.
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- 125 “广东广远渔业集团有限公司与您相约2021广州国际渔博会 [Guangdong Guangyuan Fishery Group Co. Ltd. Meets You at the 2021 Guangzhou International Fisheries Expo],” 会展城 [Convention and Exhibition City], December 22, 2020, <http://www.hzc.com/news/detail-44442.html>.
- 126 “广东银鹏动力设备有限公司 [Guang Dong Yinpeng Power Machinery Co. Ltd.],” 企查查 [Qichacha].
- 127 Fujian Yinpeng Machinery Equipment Co., Ltd., Company Website.
- 128 “广东银鹏动力设备有限公司 Guangdong Yinpeng Power Equipment Co., Ltd.” Marine Online, https://www.marineonline.com/company-info/home/226758663673479182/Guangdong%20Yinpeng%20Power%20Equipment%20Co.%2C%20Ltd.?lang=en_US.
- 129 Fujian Yinpeng Machinery Equipment Co., Ltd., Company Website.
- 130 “台山市税务局领导到广海镇走访市人大代表和政协委员 [Leaders of the Taxation Bureau of Taishan City Visited Guanghai Township with Representatives of the Municipal People’s Congress and Members of the CPPCC],” 调色盘网络 [TSP Web], December 20, 2020, <https://www.tspweb.com/key/%E5%8F%B0%E5%B1%B1%E5%B8%82%E7%A8%8E%E5%8A%A1%E5%B1%80%E9%A2%86%E5%AF%BC%E7%8F%AD%E5%AD%90.html>. The case of He Rizhao highlights one difficulty in establishing possible government links, in particular for individual owners. Individuals located within a broader corporate network affiliation may have common names, making definitive connections potentially difficult. This study included name matches for individuals so long as said name match was affiliated with a same corporate entity as the known individual and/or was affiliated with the same city jurisdiction.
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- 132 An example is the *Qiong Hai* 1101, which was mentioned as being owned by Tanmen’s maritime militia companies: “省机关事务管理局参观学习海上民兵连, 中共海南省委直属机关工作委员会 [The Provincial Affairs Management Bureau Takes Study Tour of Maritime Militia Company, Hainan Province CCP Working Committee],” 省直机关工会 [Provincial Authority Trade Union], June 10, 2015, <http://jgdj.hainan.gov.cn/page.php?xuh=702>.
- 133 Examples include the sister ships *Yue Tai Yu* 18000, 18111, 18222, 18333, 18555, 18666, 18777, 18888, and 18999. 台山市农业农村局 [Taishan Municipal Bureau of Agriculture and Rural Affairs], “关于台山市2015-2017年度49艘骨干渔船更新改造中央补助资金发放的公示 [Public Notice of the Release of the Taishan 2015-2017

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- 135 “中国首次在三沙海域举行“海空立体”联合搜救演练 13艘船艇参加 [China's Holds First Sansha “Sea and Air in Three Dimensions” Joint Search-and-Rescue Exercise with 13 Vessels Participating],” 中国新闻网、新华社 [China News Network, Xinhua], July 14, 2016, http://mil.qianlong.com/2016/0714/755342_2.shtml.
- 136 “南沙骨干渔船雇用员工合同书 [Spratly Backbone Fishing Vessel Employment Contract],” 百度文库 [Baidu Library], February 12, 2019, <https://wenku.baidu.com/view/206be013f4335a8102d276a20029bd64783e62eb.html>.
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