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The fishing moratorium regime under the framework of global marine governance: insights from China

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More than four decades after the adoption of the United Nations Convention on the Law of the Sea (UNCLOS), global marine living resources have seen enhanced protection, yet a significant proportion remain under severe strain. Fisheries resources, inherently renewable, now face compromised sustainability due to expanding economic activities and ever-increasing human demands. Current solutions—such as establishing marine protected areas, combating Illegal, Unreported, and Unregulated (IUU) fishing, and forming fisheries management organizations—address certain aspects of resource conservation but lack precision. This study is based on a systematic review of Chinese legal instruments, ministry notices and national fishery statistics (CMARA, China Fishery Statistical Yearbook) and relevant international instruments. From the perspective of global ocean governance, this study analyzes the origins, implementation, and innovations of China's fishing moratorium system, proposing actionable and globally scalable recommendations. The aim is to advance targeted and efficient strategies for sustaining fishery resources and strengthening global ocean governance.

KEYWORDS

fishing moratorium system, fisheries resources, fisheries law, United Nations Convention on the Law of the Sea (UNCLOS), global ocean governance

1 Introduction

According to a 2001 study published in Science, overfishing by humans has been altering marine ecosystems since the advent of fishing practices. The ecological extinction of over exploited species may trigger abrupt collapses of certain biological resources and ecosystems, while rendering many other species increasingly vulnerable to additional stressors—such as disease outbreaks and diminished resilience to marine pollution (Jeremy, 2001).

Faced with severe threats to the sustainability of fishery resources, nations worldwide have been actively seeking solutions. Through years of practice, one highly effective approach—the fishing moratorium system—has emerged as a key strategy to enhance

the sustainable utilization of marine biological resources. By implementing seasonal fishing bans, species-specific prohibitions, and other measures, this system directly ensures the stability and renewability of fishery stocks, achieving conservation goals in a straightforward and measurable manner. By implementing seasonal fishing bans and species-specific conservation measures, this system directly ensures the stability and renewability of fishery resources, achieving conservation goals through quantifiable outcomes. Monitoring data from 2023 indicates that the population of the Yangtze finless porpoise has ceased its decline and begun to recover for the first time, while the occurrence frequency of endangered species such as the Yangtze swordfish has significantly increased. Additionally, surveys conducted in the Hubei section of the Yangtze River revealed that the number of fish species has risen from 58 before the fishing ban to 75 by 2023, demonstrating a clear restoration of biodiversity (Zhao et al., 2024).

China's seasonal fishing moratorium is characterized by its large scale and centralized, mandatory enforcement. Implemented uniformly in its coastal waters, it mainly restricts bottom trawling and purse seining during key spawning periods. This policy is highly effective for short-term resource recovery and increasing seasonal catches for certain species. However, its top-down implementation can place significant pressure on local fishers with limited alternative livelihoods. In contrast, the European Union's Common Fisheries Policy (CFP) adopts a decentralized and science-based approach, setting Total Allowable Catches (TACs) and quotas for specific species and regions based on scientific recommendations (e.g., from ICES). This allows fishing activities to continue year-round within established limits, supporting ecosystem-based management and long-term sustainability—though challenges in enforcement and bycatch disposal remain. The U.S. system, governed by the Magnuson-Stevens Act, is widely regarded as a strong regulatory model. It integrates legally binding recovery schedules for overfished stocks with regionally managed Fisheries Management Councils. This framework incorporates input from local stakeholders while ensuring science-based decision-making, leading to notable successes in rebuilding key fisheries such as the Atlantic sea scallop. While China's moratorium rapidly boosts biomass, the EU and U.S. systems focus on sustainable long-term stock recovery within a broader ecological context. The core distinction lies in governance: China employs a broad seasonal ban, whereas Western approaches tend to be species-specific, data-informed, and inclusive of stakeholder adaptation, potentially yielding more resilient long-term outcomes.

Countries worldwide have recognized the importance of ecological conservation and the sustainable development of fishery resources. However, due to differing national conditions, not all nations have adopted fishing moratorium systems. For instance, in the Chesapeake Bay of the United States, the implementation of female-specific harvest quotas and seasonal fishing closures for blue crabs has yielded significant recovery. Population assessment models indicate that the female crab biomass rebounded from a historic low of 67 million individuals in 2008 to 191 million by 2019, achieving biologically sustainable levels (Lin and Guo, 2024). Similarly, Norway's management of Atlantic cod through strict quotas, spawning season bans, and minimum mesh size regulations has proven highly effective. According to data from the International Council for the Exploration of the Sea, cod stocks surged from 45,000 metric tons in 2000 to 900,000 metric tons by 2020, ensuring the long-term viability of this commercially critical population (DF (Directorate of Fisheries), 2025)Is such a system suitable for promoting sustainable fishery resource management at the current stage? How can fishing moratorium policies be designed more effectively? This paper provides an in-depth analysis of the fundamental aspects of fishing moratorium systems and, using China's moratorium policy as a case study, explores how such systems can be optimized to achieve the most effective sustainable utilization of marine biological resources.

The data sources for this article are primarily official Chinese websites and documents, including the official website of the Ministry of Agriculture and Rural Affairs of China, the officially published Fishery Statistical Yearbook, the FAO official website, and peer-reviewed literature. The data cutoff date is 2025.

2 Global ocean governance and China's fishing moratorium system

2.1 Global ocean governance

In the 1990s, Robert L. Friedheim proposed a novel conceptualization of global ocean governance, defining it as "establishing a framework of rules and practices to equitably and efficiently allocate ocean uses and resources, while providing mechanisms for conflict resolution to secure and enjoy marine benefits - particularly addressing collective action problems in an interdependent world." (Friedheim, 1999) That is, diverse stakeholders (actors) engage in the management of marine environments and resource exploitation in the high seas and international seabed areas through consultation, the establishment of organizations, and the formulation of rules.

Global ocean governance has gained increasing prominence and flourished alongside the advancement of globalization, representing a critical shift in international maritime order toward cooperation, norm-based approaches, and institutional harmonization. Through persistent exploration and collective efforts by nations, a multilateral system has gradually emerged, centered on the United Nations and supported by key instruments such as the United Nations Convention on the Law of the Sea (UNCLOS), the Convention on Biological Diversity(CBD), as well as institutional frameworks like the United Nations Educational, Scientific and Cultural Organization (UNESCO) Intergovernmental Oceanographic Commission and the United Nations (UN) Ocean Conference. Under this governance paradigm, the United Nations plays a leading role in regulating and facilitating consultations among member states. While individual nations maintain their own declarations and domestic laws—and, like other UN-led global governance initiatives, bear obligations and responsibilities for reform—United Nations Convention on the Law of the Sea (UNCLOS) remains the foundational "Magna Carta" of global

ocean governance. This seminal treaty serves as a stabilizing force, whether in ensuring the sustainable and stable utilization of marine resources or in advancing equitable maritime development.

With the relentless advancement of technology, the intensity of marine exploitation has increased correspondingly. Coupled with unpredictable pollution incidents such as oil spills, the resulting ecological damage and economic losses have reached staggering proportions. Such exploitative "ocean development" is inherently unsustainable and fundamentally contradicts the principles of global ocean governance (Chen et al., 2019). The utilization and sustainable management of marine resources remain a priority concern for the United Nations and coastal states alike, as evidenced by ongoing global discourse. A testament to this commitment is the 2030 Agenda for Sustainable Development adopted by the United Nations (UN) General Assembly, which explicitly designates Goal 14: "Conserve and sustainably use the oceans, seas and marine resources" as one of its core objectives.

The approaches to moratoriums on fishing vary significantly among the EU, the U.S., and small island nations. The European Union implements a centralized, quota-based system under the Common Fisheries Policy, employing strict seasonal closures and technical measures to rebuild stocks, particularly in regions like the North Sea. The United States relies on robust science-based management through regional Fishery Management Councils, imposing area-specific seasonal bans—such as the red snapper closure in the Gulf of Mexico—to prevent overfishing. In contrast, small island nations often use nearshore temporary closures or community-led moratoriums, focusing on protecting artisanal fisheries and coral reef ecosystems, though limited resources challenge enforcement. Each model reflects distinct governance structures and ecological priorities.

It is evident that China's measures for ocean governance are complementary and inseparable from global efforts. As outlined in the White Paper on China's Offshore Fisheries Development and the Marine Environment Protection Law of the People's Republic of China, (CMARA, 2023a) both released by the State Council Information Office on October 24, 2023, under the guidance of Xi Jinping's maritime rule of law thought for the new era, China has deeply implemented the vision of global ocean governance and a maritime community with a shared future. The country has consistently strengthened marine ecological civilization construction, adhered to the path of green and sustainable development for offshore fisheries, committed to the scientific conservation and sustainable utilization of fisheries resources, and strived to achieve high-quality development in offshore fisheries. This white paper stands as a concrete manifestation of China's practical contributions to global ocean governance.

2.2 The historical evolution of China's fishing moratorium system

The fishing moratorium system constitutes a pivotal fisheries management regime designed to protect aquatic organisms during their spawning seasons and juvenile growth phases through regulated fishing restrictions. By implementing targeted harvesting prohibitions, this system serves dual objectives: maintaining aquatic ecological equilibrium, and ensuring the sustainable utilization of marine biological resources (Pei and Fang, 2024).

In 1995, the Ministry of Agriculture of China issued the "Notice on Revising the Regulations on the Production Arrangement and Management of Major Fishing Grounds and Fishing Seasons in the East China Sea, Yellow Sea and Bohai Sea", officially implementing the fishing moratorium system in the Yellow Sea and East China Sea, stipulating that in the waters from 27°N to 35°N, trawler operations (except beam shrimp trawling) and stow net fishing vessel operations are prohibited from July 1 to August 31 each year (Pan and Li, 2016). This document is of historic significance as it formally established China's summer fishing moratorium system. The establishment of China's summer fishing moratorium system underwent a long process of practice and adjustment. In 1980, the former State Bureau of Aquatic Products issued the "Notice on the Summer Fishing Moratorium for Collective Trawlers and Joint Inspection of Juvenile Fish Ratios in State-Owned Fishing Vessels", requiring a two-month moratorium (July and August) for collective trawlers in the Yellow Sea area and a four-month moratorium (July to October) for collective trawlers in the East China Sea area; in 1987, the Ministry of Agriculture issued the "Regulations on the Production Arrangement and Management of Major Fishing Grounds and Fishing Seasons in the East China Sea, Yellow Sea and Bohai Sea", requiring a moratorium from July to October for trawlers under 250 horsepower (except beam shrimp trawling) in the waters from 24°30'N to 34°N; five years later in 1992, the protected sea area was expanded again, requiring a moratorium on all bottom trawling operations (except beam shrimp trawling) in the waters from 27°N to 35°N (Dai et al., 2018).

Based on summarizing the empirical results from over a decade of pilot fishing moratorium programs in selected regions, China formally established the Summer Fishing Moratorium system in 1995.

During the same period, in the late 1980s, the total catch of Alaska pollock in the Bering Sea high seas reached 1.45 million tons, with China being one of the major fishing nations. Due to severe overfishing, by 1992 - just a few years later - the yield had plummeted to only 10,000 tons. Considering both the United Nations Convention on the Law of the Sea(UNCLOS) adopted in 1982 and the declining state of Alaska pollock resources in the Bering Sea, China found it imperative to implement targeted protection and management measures. The Central Bering Sea region implemented a fishing moratorium starting in 1993. To align with international conservation efforts, China signed the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea in 1994, which came into effect in 1995 (CMARA (China's Ministry of Agriculture and Rural Affairs), 2007). This action demonstrated China's responsible attitude as a major nation and its firm commitment to ecological environmental protection.

The Convention determines that the allowable catch of pollock in the area for the next year depends on the existing biomass of

pollock in the Aleutian Basin. If the pollock biomass in the Aleutian Basin is less than 1.67 million tons, the allowable catch should be zero, and no fishing is permitted. If the pollock biomass in the Aleutian Basin equals or exceeds 1.67 million tons, fishing can be conducted according to the specified quantity. In recent years, due to the strict implementation of resource conservation measures, the overall pollock resources in the North Pacific have basically recovered and remained stable year by year.

Meanwhile, benefiting from the provisions of the United Nations Convention on the Law of the Sea (UNCLOS), the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks was signed in December 1995. This agreement plays a prominent role in ensuring the long-term conservation of straddling fish stocks. China signed it on November 6, 1996. The agreement stipulates general principles for the conservation and management of straddling fish stocks and highly migratory fish stocks, mechanisms for international cooperation, obligations of flag States, compliance and enforcement, needs of developing States, and dispute settlement procedures.

The year 1995 marked the 50th anniversary of the founding of the Food and Agriculture Organization of the United Nations (FAO). In October of the same year, the FAO adopted the international guiding document for fisheries management - the Code of Conduct for Responsible Fisheries. This Code provides a framework for national and international efforts to ensure the sustainable utilization of aquatic living resources in a manner compatible with environmental protection, along with the establishment of corresponding monitoring systems. To this end, four years later in 1999, the FAO established the Fisheries Agreement Register: a computer database facilitating searches for fisheries-related bilateral and multilateral agreements, containing information on over 2,000 agreements (FAO, 2015).

In view of this, to some extent, both the international environmental trends and the domestic pilot results of fishing moratorium contributed to China's formal establishment of the summer fishing moratorium system in 1995, laying a solid foundation for China's fishing moratorium regime.

3 Analysis of China's fishing moratorium system

China is one of the world's earliest countries to develop and utilize marine resources. As early as over 4,000 years ago, people in China's coastal regions lived by the sea and made fishing their livelihood, joining peoples of other nations in pioneering the exploration and utilization of ocean resources (FAO, 2015).

According to FAO statistics (TSWFA, 2022a), despite China's downward adjustment of its 2009-2016 catch data and an approximately 19.3% reduction during 2015-2020, China's catch volume still ranks first globally. In 2020, China accounted for nearly 15% of the world's total catch, exceeding the combined total of the second and third ranking countries.

Article 30 of the Fisheries Law of the People's Republic of China establishes the "Fishing Ban Period and Fishing Ban Zone" system. Most fishing ban periods are primarily implemented in summer with supplementary periods in spring and autumn, while most fishing ban zones are located in Chinese waters with a few in non-Chinese waters, known as the "Summer Fishing Moratorium System" or "Marine Summer Fishing Moratorium System." To ensure fish have sufficient and safe breeding areas, reproduction time, and growth periods, restrictions are imposed on fishing vessels regarding zones and timing. The fishing moratorium system effectively protects fish growth and can also be used to control total catch volume, demonstrating strong conservation and restoration effects on the ecological environment.

3.1 Analysis of fishing moratorium system elements

China's summer fishing moratorium system has its own formation background and characteristics. This article mainly analyzes it from the following three key elements.

1. Time and fish species elements

The scientific basis of the fishing moratorium system lies in implementing measures such as fishing restrictions during the spawning period of adult fish and the growth period of juveniles. The fishing moratorium period refers to a designated duration when fishing is prohibited to protect fishery resources. Respecting aquatic biological resources and protecting fishery resources should be a consciousness shared by every individual. The fishing moratorium period serves precisely this purpose - ensuring the sustainable development of aquatic biological resources by preventing their depletion through continuous fishing. In China, fishing moratorium periods and zones are often implemented simultaneously, prohibiting fishing within designated waters during specific periods. Different fish species have corresponding moratorium periods based on their characteristics. The protective effect of the summer fishing moratorium system is primarily reflected in short-term outcomes, particularly evident in fast-growing fish populations such as small yellow croaker. Comparative data before and after the summer moratorium show that the catch of small yellow croaker increased severalfold post-moratorium, with individual weights reaching about 10g. The selection of summer for implementing the moratorium is mainly because major commercial fish species reach their peak spawning period during this season. The moratorium ensures these commercial fish can complete their normal spawning and growth processes undisturbed, preventing the catching of undersized juveniles that would cause excessive damage to fishery resources and hinder sustainable ecological development.

For example, the Zhoushan fishing ground is located on the continental shelf of shallow seas with abundant fishery resources. The national regulations for the fishing moratorium period in the Zhoushan fishing ground are generally from 12:00 on May 1st to

12:00 on September 16th. Among them, for the operation type of single-anchor stow net, the moratorium period is generally from 12:00 on May 1st to 12:00 on September 16th. For other stow net operations among transitional fishing gear in marine fishing, the moratorium period is generally from 12:00 on May 1st to 12:00 on August 16th, with a moratorium duration of no less than 2 months. In inland waters, the moratorium periods vary, with specific times generally determined according to the reproductive cycles of local major commercial fish species. The moratorium period for common carp generally starts in April each year and lasts until mid-June, while the moratorium period for grass carp generally starts in mid-June each year and lasts until the end of September. In the Yangtze River basin, a moratorium period for bream is established annually from March to May (Huang et al., 2025). From April 15th to May 31st each year is the moratorium period for freshwater lakes and reservoirs (Zhao, 2008).

2. Water area elements

In addition to temporal elements, the spatial scope of water areas is equally crucial in the fishing moratorium system. Fishing prohibition zones are designated areas where fishing activities are banned or restricted to protect certain important commercial fish species, crustaceans, or other aquatic resources during their spawning seasons, juvenile growth periods, and migration phases (Yu et al., 2007). When implemented in coordination with fishing moratorium periods, these zones can maximize conservation effectiveness. Provisions for such prohibition zones were specifically established as early as in the International Convention for the Regulation of Whaling, which came into effect in 1948 (ICRW, International Convention for the Regulation of Whaling, 1946).

The establishment of fishing prohibition zones focuses on protecting the life cycles of fish populations in specific areas from being disrupted. It effectively prevents fishing vessels from catching juvenile or immature fish. By designating prohibition zones according to fish migration cycles, targeted protection can be provided for key species, forcing fishing vessels to operate in waters farther from shallow coastal areas.

For example, many fishing prohibition zones are located in shallow waters within 40 meters of the coastline, primarily because these areas are river estuaries with abundant environmental resources favorable for reproduction and growth. Such as, The core zone of the Zhoushan Fishing Ground (East China Sea) spans from 29°30'N to 31°00'N latitude and 121°30'E to 123°30'E longitude, with some waters extending to 30°30'N, 124°00'E; the Yangtze River Estuary restricted fishing area covers from 31°45'N (northern boundary) to 30°50'N (southern boundary); while the Pearl River Estuary restricted zone is located between 21°50'N and 22°40'N latitude and 113°00'E to 114°30'E longitude. Another example is the fishing prohibition zone established annually from March 1 to June 30 in waters within 20 meters depth from Lingao Cape in Lingao County to Basuo Port in Dongfang County on Hainan Island (Zhao, 2008). The Haihe River Basin, Liaohe River Basin, and Songhua River Basin are three major watersheds in northern and northeastern China. According to incomplete statistics, these three basins are home to over 100 fish species. Similarly, Poyang Lake and other major lakes in the Yangtze River Basin have also fully implemented fishing moratorium systems.

3. Tool elements

According to existing fishing moratorium regulations, China only allows fishing vessels using angling gear to operate during the moratorium period. The primary reason is that angling vessels, due to their low catch volume and minimal damage to fishery resources, are not prohibited. The main prohibited fishing methods include trawlers and other fishing gear that cause significant damage to fishery resources. Additionally, fishing methods such as blast fishing, poison fishing, and electrofishing are strictly prohibited. The use of destructive fishing gear and methods including "qiaozhougu" (a type of pounding device), mudflat beat boards, multi-layer blocking nets, sluice sleeve nets, river barrier nets, deep-water stow nets (in the Yangtze River), "juehu" nets (extermination nets), bottom dredge nets, and other fishing gear or methods that harm fishery resources is forbidden. However, it is noteworthy that cormorants are no longer prohibited as fishing tools.

An analysis of the aforementioned elements helps establish quantitative criteria and perspectives for designing a scientifically sound fishing moratorium system. Whether such a system is suitable for promoting sustainable fishery resource development at the current stage can also be examined based on these factors.

3.2 Analysis of China's fishing moratorium practices

According to FAO data (TSWFA, 2022b), although China remains the country with the largest marine catch in the world, its catch has decreased from 14.4 million tons in 2015 to 11.8 million tons in 2020, representing an 18.2% reduction compared to 2015 and a 7.2% decrease compared to 2018 (an average annual decline of 3.9%). The policy of reducing catches will continue beyond the 13th Five-Year Plan (2016-2020) and the 14th Five-Year Plan (2021-2025) periods, with further production declines expected in coming years. Meanwhile, China's aquatic animal production from fisheries and aquaculture has shown year-on-year growth from 1950 to 2022 (TSWFA, 2024).

3.2.1 Legal aspects of the fishing moratorium system

According to Article 61 of the United Nations Convention on the Law of the Sea regarding exclusive economic zones (UNCLOS, 1982c), coastal states have the right to determine the allowable catch of living resources within their exclusive economic zones. Coastal states shall adopt the most scientific means of fisheries management and supervision based on their actual conditions to maximally improve the fisheries environment and ensure effective protection of living resources in their exclusive economic zones. Therefore, China can conduct fishing and fishery resource conservation, including fishing moratorium, within its exclusive economic zone. As a contracting party, China actively implements the relevant provisions of international conventions. The establishment of its fishing moratorium system not only complies with the United

Nations Convention on the Law of the Sea (UNCLOS)but is also supported by domestic legislation. Article 30 of the newly revised Fisheries Law of the People's Republic of China (2022) explicitly prohibits fishing in prohibited zones and during closed seasons, and bans the sale of illegally caught fish during these periods.

The Chinese Constitution does not directly address issues of fishing or fishing moratorium. Article 9 of the Constitution stipulates that the state ensures the rational use of natural resources and prohibits any organization or individual from using any means to appropriate or damage natural resources (CPRC, 1982a). Although this provision does not specifically target fisheries, it provides fundamental legal basis for accountability. Beyond these principled provisions in the parent law, more specific legislation is required to effectively combat illegal activities related to fisheries for better protection of fishery resources. With rights come responsibilities: Article 33 of the current Constitution states that citizens must fulfill their obligations while enjoying rights granted by the Constitution and laws (CPRC, 1982b). For instance, as one method of marine resource exploitation, marine fishing's environmental and ecological damages should be regulated by the Environmental Protection Law of the People's Republic of China. More directly, the Fisheries Law of the People's Republic of China specifies liabilities for illegal fishing activities in its Chapter V to protect fishery resources. Therefore, to achieve effective fishing moratorium outcomes, comprehensive legislative improvement and coordinated efforts across all implementation aspects are essential for optimal results.

After decades of development, China's normative legal documents and non-normative legal documents related to fishing moratorium have initially taken shape (Table 1).

3.2.2 The implementation of fishing moratorium systems and catch-level management

To more comprehensively implement the United Nations Convention on the Law of the Sea (UNCLOS) and strictly enforce the Fisheries Law, China has successively introduced multiple policies. The China Ocean Agenda 21 (Article 5.31) specifies the need to control offshore fishing intensity (COA, 1996). Based on scientific harvesting, China has gradually adjusted catch quotas for various commercial fish species to promote the sustainable cycling of renewable fishery resources, ensuring that fish populations grow at a rate exceeding the average catch volume. Scientific and reasonable fishing moratoriums and closed seasons have been established according to the spawning cycles of different fish species, allowing commercial fish to complete their growth cycles fully. Traditional fishing practices have been transformed—shifting from large-scale harvesting to developing alternative industries such as eco-tourism and aquaculture—thereby gradually moving away from a single-fishery operating model. This shift has enabled a transition from quantity-driven expansion to quality- and efficiency-based development. Meanwhile, the presence of rare fish species has provided new possibilities for the proliferation of fishery diversity. After the reopening of seasonal fishing ban zones, strict restrictions are imposed on fixed fishing gear and nets, with targeted crackdowns on illegal fishing vessels and equipment. For instance, in 2017, the Ministry of Agriculture, in accordance with the State Council's Overall Plan for Ecological Civilization System Reform, initiated a total allowable catch (TAC) management system for marine fishery resources. Furthermore, the State Council's 14th Five-Year Plan for Advancing Agricultural and Rural Modernization (2022) reinforced this system, improving catch limit management and imposing stricter requirements on the duration and fishing methods permitted during the summer fishing moratorium. In 2020, China pioneered a high-seas fishing moratorium, and in 2021, the summer moratorium period was further optimized based on fish migration patterns and high-seas fishing conditions. Special permits were granted for certain allowable species, balancing economic and environmental sustainability while safeguarding the renewable development of fishery resources (Chen et al., 2020).

China's summer fishing moratorium system has been implemented for decades and has undergone multiple adjustments in response to changing environmental conditions to optimize its effectiveness. The achievements of China's fishing moratorium have been hard-won, with over 100,000 fishing vessels and more than one million fishermen participating annually. Currently, the system covers all of China's jurisdictional waters, with varying durations tailored to regional characteristics (Table 2).

Official statistics report a decline in total fishery catches from 15.39 million tons in 2017 to 12.96 million tons in 2021. Marine catches decreased from 11.1242 million tons to 9.5146 million tons. Freshwater catches dropped from 2.183 million tons to 1.1978 million tons (CSFY, 2022a). While this coincides with intensified moratoriums and other management measures, attributing the decline solely to moratorium enforcement is premature; catch changes can also reflect market dynamics, reporting revisions and broader fisheries management measures.

Official statistics indicate that China's fishing moratorium policy has not adversely affected fishermen's incomes. On the contrary, the per capita net income of fishermen has shown steady growth since the implementation of the seasonal fishing ban, increasing from ¥18,452.78($2,569.42) in 2017 to ¥23,442.13 ($3,264.15) in recent years (CSFY, 2022b). This upward trend demonstrates that the months-long fishing moratorium has not negatively impacted fishermen's livelihoods, but has instead contributed to income growth, to a certain degree. These findings confirm that the fishing suspension system delivers dual benefits - it not only improves marine ecology but also generates positive economic outcomes for fishing communities.

3.2.3 Special allowance fishing under the moratorium system

The FAO's Code of Conduct for Responsible Fisheries (1995), specifically Article 7.2.2.c, requires that national fisheries management measures consider fishermen's interests, including those engaged in subsistence, small-scale and artisanal fisheries (CCRF, 1995). A complete ban on all fishing during the moratorium would significantly impact professional fishermen's livelihoods. To address basic subsistence needs while maintaining the moratorium system, China allows strictly qualified fishing vessels to apply for

TABLE 1 Relevant legislation of China's fishing moratorium system.

Implementation date	Name of legal document
8 Jun. 1955	*Order on the Fishing Moratorium Period for Trawler Fisheries in the Bohai Sea, Yellow Sea, and East China Sea*
16 Aug. 1957	*Supplementary Provisions of the State Council on the Order Regarding the Fishing Prohibition Zones for Trawler Fisheries in the Bohai Sea, Yellow Sea, and East China Sea*
10 Feb. 1979	*Regulations on the Propagation and Protection of Aquatic Resources*
1 Jul. 1986	*Fisheries Law of the People's Republic of China*
19 Oct. 1987	*Implementation Rules of the Fisheries Law of the People's Republic of China*
Apr. 1996	*China Ocean Agenda 21*
2 Mar. 2009	*Notice of the General Office of the Ministry of Agriculture on Strengthening the Management of the 2009 Marine Summer Fishing Moratorium*
1 Jan. 2014	*Announcement of the Ministry of Agriculture on Adjusting the Gillnet Fishing Moratorium Period in the Yellow Sea and Bohai Sea Region*
21 Apr. 2014	*Notice of the General Office of the Ministry of Agriculture on Implementing the 2014 Marine Summer Fishing Moratorium Work*
19 Jan. 2017	*Announcement of the Ministry of Agriculture on Adjusting the Marine Summer Fishing Moratorium System(2017)*
9 Feb. 2018	*Announcement of the Ministry of Agriculture on Adjusting the Marine Summer Fishing Moratorium System(2018)*
6 May 2019	*Announcement of the Ministry of Agriculture and Rural Affairs on Special Fishing Permits for Valuable Commercial Species and Arrangements for Auxiliary Fishing Vessel Services During the 2019 Summer Fishing Moratorium Period*
20 Apr. 2020	*Announcement of the Ministry of Agriculture and Rural Affairs on Special Fishing Permits for Valuable Commercial Species and Arrangements for Auxiliary Fishing Vessel Services During the 2020 Summer Fishing Moratorium Period*
1 Jun. 2020	*Notice of the Ministry of Agriculture and Rural Affairs on Strengthening the Conservation of Squid Resources in the High Seas and Promoting the Sustainable Development of China's Distant-Water Fisheries*
9 Jul. 2020	*Notice on Effectively Implementing the Fishing Ban in the Yangtze River Basin*
29 Dec. 2020	*Regulations on Fisheries Law Enforcement Work (Provisional)*
22 Feb. 2021	*Announcement of the Ministry of Agriculture on Adjusting the Marine Summer Fishing Moratorium System(2021)*
27 Apr. 2021	*Announcement of the Ministry of Agriculture and Rural Affairs on Special Fishing Permits for Valuable Commercial Species and Arrangements for Auxiliary Fishing Vessel Services During the 2021 Summer Fishing Moratorium Period*
28 Jun. 2021	*Notice of the Ministry of Agriculture and Rural Affairs on Implementing the 2021 Voluntary High Seas Fishing Moratorium Measures*
24 Apr. 2022	*Announcement of the Ministry of Agriculture and Rural Affairs on Special Fishing Permits for Valuable Commercial Species and Arrangements for Auxiliary Fishing Vessel Services During the 2022 Summer Fishing Moratorium Period*
23 May 2022	*Notice of the Ministry of Agriculture and Rural Affairs on Implementing the 2022 Voluntary High Seas Fishing Moratorium Measures*
10 Jan. 2023	*Announcement on Soliciting Opinions Regarding the Adjustment Plan for the Summer Fishing Moratorium System in the Yellow Sea and East China Sea between 35°N and 26°30′N*
14 Mar. 2023	*Announcement of the Ministry of Agriculture on Adjusting the Marine Summer Fishing Moratorium System(2023)*
10 Apr. 2023	*Public Notice on Special Fishing and Auxiliary Fishing Vessel Service Arrangements During the 2023 Summer Fishing Moratorium Period*
2 Jun. 2023	*Notice of the Ministry of Agriculture and Rural Affairs on Implementing the 2023 Voluntary High Seas Fishing Moratorium Measures*
24 Apr. 2024	*Announcement of the Ministry of Agriculture and Rural Affairs on Special Fishing Permits for Valuable Commercial Species and Arrangements for Auxiliary Fishing Vessel Services During the 2024 Summer Fishing Moratorium Period*
30 Apr. 2024	*Notice of the Ministry of Agriculture and Rural Affairs, Ministry of Public Security, and China Coast Guard on Carrying Out Special Law Enforcement Actions for the 2024 Marine Summer Fishing Moratorium*
14 Jan. 2025	*Circular of the General Office of the Ministry of Agriculture and Rural Affairs on Typical Cases of Fisheries Law Enforcement During the 2024 Marine Summer Fishing Moratorium Period*
16 Apr. 2025	*Announcement of the Ministry of Agriculture and Rural Affairs on Special Fishing Permits for Valuable Commercial Species and Arrangements for Auxiliary Fishing Vessel Services During the 2025 Summer Fishing Moratorium Period*
29 Apr. 2025	*Notice of the Ministry of Agriculture and Rural Affairs, Ministry of Public Security, and China Coast Guard on Carrying Out Special Law Enforcement Actions for the 2025 Marine Summer Fishing Moratorium*

Compiled according to the official website of the Ministry of Agriculture and Rural Affairs.

TABLE 2 Marine summer fishing moratorium zones and periods in China.

Moratorium zone	Moratorium period
Bohai Sea and Yellow Sea areas north of 35°N	12:00 May 1 to 12:00 September 1
Yellow Sea and East China Sea areas between 35°N and 26°30'N	12:00 May 1 to 12:00 September 16
East China Sea and South China Sea areas between 26°30'N and 12°N	12:00 May 1 to 12:00 August 16
Small stow net fishing vessels, At least 3 months starting from 12:00 May 1	

Compiled according to the official website of the Ministry of Agriculture and Rural Affairs.

special allowance fishing during the closed season. This measure both responds to the Code of Conduct and better protects fishermen's practical interests.

China's special allowance fishing policy, implemented since 2017, has been annually adjusted based on specific conditions. The number of permitted economic species during the moratorium period has increased from initially 3 species to 9 species by 2023, including jellyfish, squid, and Paphia undulata - species characterized by high yields and rapid reproduction. In the East China Sea, four types of fishing operations are permitted: beam trawling for shrimp, pot trapping, gillnetting, and light seine netting (including light falling-net operations). A total of 12,996 fishing vessels and 569 support vessels have been authorized to conduct qualified special allowance fishing operations (CMARA, 2025a).

The implementation of special allowance fishing during the several-month moratorium primarily targets economically valuable species characterized by high productivity and rapid reproduction, ensuring that regulated harvesting does not threaten their populations. Additionally, this measure helps mitigate income losses for fishermen during the fishing ban.

The Chinese government adopts a cautious approach toward special allowance fishing, permitting it only under strict qualifications and compliance with regulations. Approval requires review by provincial fisheries authorities in accordance with the Fisheries Law of the People's Republic of China and its implementing rules, the Fishery Harvesting Licensing Regulations, and the Notice on Implementing Minimum Mesh Size Standards for Marine Fishing Nets. Only qualified operators receive special allowance fishing permits after rigorous evaluation [MFAPRC (Ministry of Foreign Affairs of the People's Republic of China), 2023].

In 2025, the Ministry of Agriculture and Rural Affairs issued the Special Allowance Fishing Notice, specifying management measures, permitted species, and penalties for violations under the Fisheries Law, including disqualification from special allowance fishing for the current and following year.

Key Requirements:

1. Vessel Management: All participating fishing and support vessels must be clearly marked for dynamic monitoring and report port entries/exits.
2. Catch Management: All catches must be landed at designated ports, with yields recorded via a mobile app that tracks quotas and issues alerts.
3. Supporting Measures: Vessels must carry scientific observers, with enforcement conducted by fishery administration vessels and coast guard patrols.

The Special Allowance Fishing Notice imposes multi-faceted restrictions to balance resource conservation with fishermen's livelihoods, rejecting a "one-size-fits-all" moratorium. While it meets practical needs, the policy's partial openness raises questions—by allowing targeted fishing of certain species, it may inadvertently increase pressure on those populations when other species are off-limits. Whether this constitutes a compromise of the moratorium's integrity requires further examination.

3.2.4 Enforcement at the implementation level: operationalizing the fishing moratorium through the "China Fishery Administration Sword Campaign"

Article 38 of the Fisheries Law stipulates that violations of closed fishing zones or seasons, or use of prohibited fishing gear/methods shall result in confiscation of catches and illegal gains, with fines up to 50,000 yuan. Serious cases warrant gear confiscation and license revocation; particularly severe cases may lead to vessel confiscation; criminal cases shall be prosecuted.

For selling illegally caught fish in prohibited zones/seasons, local fisheries authorities must investigate. Manufacturing/selling prohibited gear incurs confiscation plus fines up to 10,000 yuan.

To enforce these provisions, China's Ministry of Agriculture launched the "Fishery Law Enforcement Sword Campaign", regularly publishing typical cases. In 2024, enforcement involved 3.486 million personnel, addressed 64,000 violations (2,580 prosecuted), and confiscated 23,000 unlicensed vessels (CMARA, 2025b).

Case Example 1: On May 25, 2024, the Agriculture and Rural Affairs Committee of Shanghai Pudong New Area conducted fishery monitoring near Jiuduansha in the Yangtze Estuary when a safety incident occurred. Investigation revealed the vessel had only a captain and mate, lacking the required third-class engineer. A fine of 3,000 yuan was imposed.

Case Example 2: In July 2022, law enforcement officers from Beijing Agriculture and Rural Affairs Bureau discovered six individuals fishing during the Haihe River Basin moratorium in Shunyi District. Confiscated items included: 1 wooden boat; 2 single-layer gillnets; 1 double-pole stow net; 504.9 kg of catches (released after evidence collection) (CMARA (China's Ministry of Agriculture and Rural Affairs), 2024).

Case Example 3: On May 2, 2021, the Maoming Unit of Guangdong Marine Comprehensive Law Enforcement inspected the fishing vessel "Yue 0327" and discovered violations including vessel modification and lack of life-saving equipment. In accordance with the Fisheries Law, Fishery Vessel Inspection

Regulations, and Guangdong Fishery Vessel Safety Production Management Measures, the vessel owner was fined 20,000 yuan (CMARA (China's Ministry of Agriculture and Rural Affairs), 2021).

The official website annually publishes the "Top 10 Typical Law Enforcement Cases," a practice that serves strong warning and educational purposes. These cases represent typical violations handled nationwide in the previous year, covering diverse illegal activities under various regulatory documents, not limited to specific offenses. Penalties include not only administrative sanctions but also criminal liabilities and public-interest obligations. The Ministry of Agriculture and Rural Affairs' official website provides detailed analysis of these cases and their outcomes, helping enforce the principle that laws must be observed, law enforcement must be strict, and violations must be punished. By making abstract regulations concrete and relatable to fishermen and the public, this practice enhances legal awareness, fosters a law-abiding atmosphere—particularly among fishing communities—and ultimately achieves the goal of ecological conservation.

While the aforementioned data reflect certain objective realities, enforcement statistics remain inherently limited, and reported figures are subject to potential biases. For instance, the number of enforcement actions represents an administrative output rather than a direct measure of reduced illegal fishing.

3.2.5 The high seas component of the fishing moratorium regime

Article 87 of the United Nations Convention on the Law of the Sea (UNCLOS) stipulates that the high seas are open to all states and enumerates six freedoms of the high seas. Article 116 preserves all states' freedom to fish on the high seas. Articles 117-119 obligate parties to adopt national conservation measures and cooperate with other states to protect and manage high seas living resources. Article 119 specifies guidelines for states when establishing conservation measures for high seas living resources. The objective shall be to maintain or restore populations at levels capable of producing maximum sustainable yield, considering ecological, economic, and environmental factors. Consistent with the principle of freedom of high seas fishing, agreed conservation measures and their implementation shall not discriminate against any state's fishermen in form or in fact (Nordquist, 2016).

As a party to the United Nations Convention on the Law of the Sea (UNCLOS), China consistently advocates integrating development with conservation. It has independently implemented a fishing moratorium system to protect marine resources, enforce fisheries conservation policies, and promote long-term sustainable resource utilization. After years of development, China initiated its first high seas autonomous moratorium in July 2020—a three-month seasonal closure targeting squid resources in parts of the Southwest Atlantic (Table 3) (CMARA (China's Ministry of Agriculture and Rural Affairs), 2020). This measure involves the voluntary withdrawal of China's distant-water fishing fleet from certain high seas areas where they routinely operate.

As a global leader in high seas squid fishing and consumption, China's adoption of this moratorium may temporarily reduce squid yields. However, from a long-term perspective, it serves as an effective approach to safeguard marine resources and enhance fisheries productivity (Xu and Li, 2024).

China's distant-water fishing fleet has expanded rapidly over the past decades. Since the China National Fisheries Corporation launched 13 distant-water fishing vessels in 1985, China's fleet has grown into the world's largest and most diverse (Zou and Wang, 2021). While this rapid growth has bolstered China's dominance in the global seafood industry, it has also heightened controversies at national, regional, and international levels regarding fisheries management and marine conservation, including issues like IUU fishing and human rights abuses at sea (Montecalvo et al., 2023). In 2019, China's massive fishing fleet operating off South America sparked conflicts with local governments and allegations of encroachment into the Galápagos Islands' exclusive economic zone, prompting sustained protests from affected nations (BBC, 2016). Although China has responded to regional and international calls for better fleet control through laws and measures—such as maintaining minimum distances from certain (Exclusive Economic Zone) EEZ boundaries under the 13th and 14th Five-Year Plans, eliminating fuel subsidies, and expanding electronic catch reporting—these efforts have not directly restored international trust in China's fisheries practices. In 2020, China introduced and implemented a more direct approach: the high seas fishing moratorium, aiming to contribute substantively to the conservation of fishery resources (EPRCRE (Embassy of the People's Republic of China in the Republic of Ecuador), 2020). China's distant-water fishing fleet consistently adheres to international maritime laws and regulations, actively fulfills international obligations and responsibilities, and places great emphasis on the sustainable use of marine fisheries resources and ecological environmental protection. The Chinese government firmly opposes any form of illegal, unreported, and unregulated (IUU) fishing activities (Agnew et al., 2009) China has established a comprehensive legal framework for fisheries management and employs technological measures such as satellite monitoring, electronic recording, and reporting to strictly supervise distant-water fishing vessels. Meanwhile, China actively engages in international cooperation, working with multiple countries and

TABLE 3 China's high seas fishing moratorium zones and periods.

High seas moratorium zone	Moratorium period
Southwest Atlantic (32°S–44°S, 48°W–60°W)	July 1 – September 30
East Pacific (5°N–5°S, 110°W–95°W)	September 1 – November 30
Northern Indian Ocean (0°N–22°N, 55°E–70°E) *Excluding areas under the Southern Indian Ocean Fisheries Agreement jurisdiction	July 1 – September 30

Compiled according to the official website of the Ministry of Agriculture and Rural Affairs. All Chinese distant-water fishing vessels operating in the aforementioned zones, except tuna longliners and purse seiners, shall uniformly comply with the autonomous moratorium and cease all fishing activities during the designated closure periods.

international organizations to promote the scientific management and conservation of global marine fisheries resources. China's efforts and achievements in this regard have gained broad recognition from the international community (Miren, 2020).

China's high seas fishing moratorium frequently interacts with its participation in regional fisheries organizations. Over the years, China has signed mutual cooperation agreements with multiple countries and regions, and carried out fisheries cooperation. For example, China has joined: International Commission for the Conservation of Atlantic Tunas (ICCAT); Indian Ocean Tuna Commission (IOTC); Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). China actively fulfills its obligations as a member state of these organizations and complies with flag state responsibilities for high seas fisheries.

China's fishing moratorium system demonstrates a multifaceted approach to engaging with international obligations. (a) Its seasonal closures are designed not only for domestic stock recovery but also to align with broader regional fisheries management organization (RFMO) conservation measures and flag state responsibilities. By synchronizing its moratorium periods with RFMO seasonal restrictions where applicable, China aims to reduce pressure on shared stocks and highly migratory species. (b) Compliance monitoring relies on a combination of VMS (Vessel Monitoring System) and AIS tracking, alongside logbook reviews and port inspections. The system is increasingly integrated with RFMO reporting schemes, and China has strengthened its port state measures to control transshipment and landings by both domestic and foreign vessels. (c) While official data remains primary, some independent analyses—such as satellite imagery studies by NGOs like Global Fishing Watch—have observed a measurable decrease in fishing activity within moratorium zones during closed periods. This correlation provides initial external indication of withdrawal, though comprehensive third-party verification of full fleet compliance remains an area for further transparency.

3.2.6 Fishing moratorium system in inland waters

Article 9 of the United Nations Convention on the Law of the Sea (UNCLOS) defines waters landward of the territorial sea baseline as part of a state's internal waters (UNCLOS, 1982a). Article 42 authorizes coastal states bordering straits to adopt laws and regulations concerning transit passage, including provisions to prevent fishing by vessels and regulate fishing gear (UNCLOS, 1982b). Based on these UNCLOS provisions, China has implemented domestic laws and regulations to establish fishing moratoriums within its recognized internal waters.

According to FAO data (TSWFA, 2022c), China was no longer ranked first in inland water catches in 2020 - the first time since the mid-1980s - with India taking the top position at 1.8 million tons. While China remains one of the largest inland fishing nations, its reported catches dropped from 2.2 million tons in 2017 to 1.5 million tons in 2020, a decline exceeding 33%. This significant reduction resulted from recent policies implemented by China's Ministry of Agriculture and Rural Affairs, most notably a 10-year fishing ban in the Yangtze River to protect aquatic biodiversity. The underlying rationale involves meeting growing aquatic food demand through expanded inland aquaculture while offsetting reduced wild catch production.

Since January 1, 2021, China has enforced a decade-long fishing prohibition in the Yangtze River's mainstem and major tributaries, with 231,000 fishermen complying. Violators face strict penalties under the Fisheries Law and Criminal Law provisions regarding closed seasons (Ma, 2018). After three years, ecological improvements are evident: increased finless porpoise sightings and Yangtze knife fish reappearing in Poyang Lake. The ban supports the Yangtze Basin's ecological civilization and sustainable development.

Pursuant to the State Council's Overall Plan for Ecological Civilization System Reform, China initiated a total allowable catch (TAC) management system for marine fishery resources in 2017. To implement these measures, the Ministry of Agriculture and Rural Affairs has issued successive notices to scientifically adjust and continuously improve fishing moratorium systems for inland rivers, including the Songhua, Liaohe, Haihe, Pearl, and Minjiang rivers (Wang et al., 2020). The Yellow River, as the "Mother River" of China, directly determines the ecological health of vast water systems through its biological resources and conservation status. In 2018, the Yellow River Basin implemented fishing moratoriums, followed by the Notice on Strengthening Aquatic Resource Conservation in the Yellow River Basin (March 2022) (CMARA (China's Ministry of Agriculture and Rural Affairs), 2015), which scientifically expanded closed zones and periods. Currently: Upper Yellow River: Year-round ban; Lower Yellow River: 4-month annual moratorium; Example: Kaifeng City (Henan) extended its 2022 moratorium to 4 months (April 1–July 31). Other cases: Qinghai Lake: Five Huangyu (Gymnocypris przewalskii) conservation bans since 1986, the fifth spanning 2011–2020. 2022 Enforcement: 135,000 law enforcement actions across Songhua/Liaohe/Haihe basins; outcomes: 1,163 violations; 163 judicial cases (284 persons); 3,420 unlicensed vessels seized; 119,000 illegal nets ("juehu nets") confiscated (CMARA, 2023b).

After years of development, China's fishing moratorium system has established a scientifically structured framework, achieving comprehensive coverage across: Seven major inland basins (Yangtze, Pearl, Huaihe, Yellow, Haihe, Liaohe, and Songhua Rivers); Key rivers, lakes, and coastal waters. Adapting to ecological and species variations, the system provides targeted fisheries protection. China's adherence to sustainable development principles demonstrates its commitment to the "Maritime Community with a Shared Future" concept and aligns with global ocean governance practices.

A direct and strong causal relationship exists between fishing moratorium measures and ecological restoration. By implementing high-intensity human intervention, these measures provide a critical recovery window for aquatic ecosystems. Their core function lies in eliminating the primary external pressure—fishing. This directly facilitates the rebuilding of fish populations, including increases in stock abundance, optimization of average body size (age structure), and enhancement of species diversity. In particular, the recovery of flagship species at the top of the food chain (such as fish species relied upon by the Yangtze finless porpoise) can trigger cascading effects, driving the restoration of the entire aquatic food web. This leads to

gradual improvements across planktonic, plant, and benthic communities, thereby reversing the trend of 'desertification.' Ultimately, such resurgence of biological resources systemically enhances ecosystem stability and resilience, strengthens core functions like material cycling and energy flow, and achieves a fundamental transition from 'degradation' to 'health.' Thus, fishing moratoriums are one of the most effective measures to initiate and accelerate ecological recovery.

Taking the South China Sea as an example, after years of implementing seasonal fishing bans, the daily catch per single trawler significantly increased after the moratorium period—specifically, shellfish increased by 9.4 times, crabs by 3.7 times, cephalopods by 2.3 times, and fish yields such as Nemipterus virgatus also showed notable growth.

A multi-level analysis of China's fishing moratorium practices demonstrates that the policy is, to a certain extent, suitable for promoting sustainable fishery resource development at the current stage. This examination also provides valuable insights for designing more rational and effective moratorium systems.

4 Representative practices of China's fishing moratorium system

Effective legal management of fishing moratorium systems is essential for sustaining marine fisheries amid increasing catches and declining resources. However, global marine conservation efforts face opposition from some nations due to political or economic interests, including isolationist and anti-multilateralist tendencies. Various governance proposals have emerged, yet many prioritize geopolitical competition over scientific resource restoration and shared development. This paper examines how China enhances its moratorium system's effectiveness and identifies globally applicable practices (Table 4).

4.1 Improving the scientific fishing moratorium subsidy system

Article 62 of the United Nations Convention on the Law of the Sea (UNCLOS) stipulates that nationals of other States fishing in the exclusive economic zone shall comply with the conservation measures and other terms and conditions established in the coastal State's laws and regulations (UNCLOS, 1982d). Licenses shall be issued to fishermen and fishing vessels, including payment of fees and other forms of remuneration. For developing coastal States, such remuneration may include adequate compensation in the fields of financing, equipment, and technology relating to the fishing industry.

China implemented a fishing vessel fuel subsidy policy in March 2006 to boost fisheries development, but it inadvertently incentivized IUU fishing. Recognizing its unsustainability, China announced in July 2015 a plan to reduce fisheries fuel subsidies to 40% of 2014 levels by 2019. The revised subsidy structure allocated: 20% as special transfer payments for vessel reduction, ecological restoration, and fleet modernization; 80% as general transfer payments for local governments to manage operating cost subsidies and occupational transitions (TCPGP (The Central People's Government Portal), 2015). In 2018, China's fisheries subsidies reached $7.2 billion (21% of global totals), with $5.8 billion directed toward fishing capacity expansion - drawing international criticism (Sumaila et al., 2019). This prompted national reevaluation of the subsidy system's alignment with international sustainability standards.

On June 28, 2023, China officially accepted the WTO Fisheries Subsidies Agreement (FSA) and will engage constructively in Phase 2 negotiations (MCPRC (Ministry of Commerce of the People's Republic of China), 2023). In accordance with the WTO Agreement, China is establishing and improving its fishing moratorium compensation system through legal means to reduce IUU and overfishing in the high seas (Ventura, 2015). For example, during moratorium periods, subsidies are provided to fishermen who lose income sources, preventing illegal fishing activities and ensuring stable implementation of the moratorium system. To further optimize the moratorium's effectiveness, incentive mechanisms can be introduced to encourage fishermen's compliance. Conversely, subsidies may be reduced for violations. The primary goal of the subsidy policy is to increase fishermen's income, offset losses caused by the moratorium, prevent illegal fishing due to economic pressures, and achieve optimal moratorium results (Honniball, 2020).

TABLE 4 Key recommendations in this section.

Improving the scientific fishing moratorium subsidy system	Accepted the WTO fisheries subsidies agreement
Prioritization of Case Re-examination	Collects typical cases and relevant data
Advancing High Seas Fishing Moratoriums	China's unilateral establishment of moratoriums in the Southwest Atlantic, Eastern Pacific, and Northern Indian Ocean sets a precedent

4.2 Prioritization of case re-examination

FAO Director-General Qu Dongyu stated: "Rising consumption demands and the transformation of agri-food systems in fisheries and aquaculture have driven global fish production to record levels, while highlighting the urgent need to intensify efforts against IUU fishing." (Zheng et al., 2025) Consequently, China's "Fishery Law Enforcement Sword Campaign" continues to publicly disclose typical cases annually through official channels, clearly defining accountability for illegal fishing—particularly emphasizing the need to eliminate IUU fishing activities that undermine the moratorium system (Rosello, 2021).

The campaign systematically collects typical cases and relevant data, collaborating with fisheries data centers from related agencies, organizations, and enterprises to analyze the rationality of key moratorium measures and determine necessary adjustments. As fisheries are renewable resources subject to variables like conservation intensity and duration, reliable real-time data forms the foundation for establishing and scientifically refining the moratorium system. Case reviews enable targeted analysis by identifying recurring violations, facilitating precise enforcement actions against illegal fishing activities, thereby ensuring the effective implementation of the moratorium (Xia and Yan, 2008).

Regularly reviewing and summarizing illegal fishing cases reinforces legal education. This approach not only deters violations but also demonstrates commitment to enforcing the fishing moratorium. By studying these cases, fishermen and fishing enterprises gain clearer understanding of relevant laws and policies, providing an effective way to enhance legal awareness across society.

4.3 Advancing high seas fishing moratoriums

The international community should work to establish periodic high seas fishing bans. Periodic high-seas moratoria have the potential to contribute to stock recovery and to generate spillover benefits for adjacent EEZs; however, their effectiveness depends on compliance, duration, spatial design and biological connectivity—points that merit careful empirical evaluation and coordination with RFMOs. To date, few nations have expressed interest in such bans. However, China's unilateral establishment of moratoriums in the Southwest Atlantic, Eastern Pacific, and Northern Indian Ocean sets a precedent. Years of practice demonstrate this approach's effectiveness in directly protecting high seas fisheries. Nations could voluntarily prohibit their vessels from fishing in designated high seas areas during specific periods. Widespread adoption of such moratoriums could create a positive reinforcement cycle—for example, by denying port access to violators or banning seafood imports from non-compliant nations. This would further promote the conservation and sustainable development of high seas fisheries resources.

As previously stated, China's fishing moratorium system demonstrates its support for global marine governance and emphasis on international cooperation for mutual benefit in shared marine resources. On October 24, 2023, the Sixth Session of the 14th National People's Congress Standing Committee adopted the newly revised Marine Environmental Protection Law of the People's Republic of China. Chapter III highlights the guiding principles of protecting marine resources, building a strong maritime nation, advancing ecological civilization, promoting sustainable socioeconomic development, and achieving harmony between humans and nature (MEPLPRC, 2024). The fishing moratorium system is undoubtedly an implementation of the Marine Environmental Protection Law. Healthy and sustainable fisheries development plays a vital role in building a community with a shared future for mankind and protecting the marine environment.

China's fishing moratorium system and the Agreement on Marine Biodiversity Beyond National Jurisdiction (BBNJ) are related in the following ways: The core objective of the BBNJ Agreement is to protect marine biodiversity in areas beyond national jurisdiction (the high seas), covering marine genetic resources, area-based management tools (such as marine protected areas), environmental impact assessments, and capacity building. Its focus is on cross-border cooperation and high seas protection, rather than directly regulating fisheries management within national territorial waters or exclusive economic zones (EEZs). China's fishing moratorium system mainly applies to domestically managed waters (such as the East China Sea and Yellow Sea), restoring near-shore fishery resources through seasonal fishing bans, which is a sovereign fisheries management measure. Therefore, the fishing moratorium system has limited direct connection with BBNJ, but both reflect the concept of marine ecosystem protection. China supports high seas protection in BBNJ negotiations, and its domestic fishing moratorium practices may provide experience for its participation in global ocean governance, especially regarding ecosystem approaches (EBM) and sustainable fisheries. Similarly, the Kunming-Montreal Global Biodiversity Framework (CBD, COP15, 2022): the new framework's "30×30" target (protecting 30% of land and sea) and sustainable fisheries management (Target 10) further emphasize ecosystem restoration. The fishing moratorium system aligns with this direction but needs to be combined with other conservation measures (such as marine protected areas) for coordinated advancement. The China Biodiversity Conservation Strategy and Action Plan (2023-2030) released in 2023 further emphasizes the "sustainable use of marine biological resources," proposing to improve the fishing moratorium system and reduce fishing pressure, directly linking it to the new CBD framework. NBSAPs are the core documents for China to fulfill its CBD obligations, and the inclusion of the fishing moratorium system as a key measure reflects its contribution to domestic biodiversity conservation. In summary, the fishing moratorium system primarily targets domestic waters and has no direct institutional relationship with BBNJ, but China can support global marine conservation concepts through domestic practices. The fishing moratorium system is an important component for China to achieve the CBD's sustainable fisheries goals and implement NBSAP actions, especially playing a key role in near-shore ecosystem protection. Through domestic policies such as the fishing moratorium and international agreements (such as CBD and BBNJ), China forms complementary approaches to jointly promote marine biodiversity conservation. In the future, it may be necessary to further connect domestic measures with high seas protection issues to strengthen the synergy of global ecological governance.

The key to reforming the global ocean governance system lies in balancing equity and efficiency, addressing the practical needs of tackling global challenges while aligning with the historical trend of peaceful development and win-win cooperation. As demonstrated

by the UN Decade of Ocean Science for Sustainable Development (2021-2030), its collective impact far exceeds what individual nations could achieve alone. Through concerted global efforts, we can realize the healthy marine future we aspire to achieve.

An analysis of representative practices within China's fishing moratorium policy reveals that the system demonstrates a measurable degree of suitability for promoting the sustainable development of fishery resources at the present stage. Furthermore, an in-depth examination of these practices provides critical empirical support and institutional reference for designing a more scientifically grounded and rational moratorium framework.

5 Conclusion

In conclusion, this study primarily analyzes publicly available data collected from the official websites of the Ministry of Agriculture and Rural Affairs and other relevant agencies. This includes data such as the number of crew members apprehended, the number of fishing vessels seized during fisheries law enforcement operations, and the amount of penalties imposed. The analysis also examines the designated scope of seasonal fishing moratoriums (e.g., in the Yangtze River), their duration, and the assessment of their effectiveness. The fishing moratorium system, as an effective approach to conserving marine living resources and ensuring sustainable utilization, deserves greater attention. While its implementation may temporarily affect fishermen's incomes and fishery revenues, it remains a beneficial long-term policy from the perspective of global ocean governance and sustainable development. Respecting natural laws is essential for lasting survival. This paper has examined various aspects of China's fishing moratorium system, tracing its origins, development, and necessity. By referencing relevant provisions of the United Nations Convention on the Law of the Sea (UNCLOS), it proposes actionable recommendations, such as: Improving moratorium-related laws and subsidies; Strengthening enforcement during closed seasons; Enhancing high seas moratorium systems. From a global ocean governance standpoint, the relationship between the moratorium system and sustainable fisheries management has been analyzed to provide targeted and efficient strategies for preserving marine biodiversity. However, questions remain: Are the future effects of the moratorium solely positive? How can post-moratorium catch limits better preserve conservation gains? These issues warrant further exploration.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material. Further inquiries can be directed to the corresponding author.

Author contributions

WY: Data curation, Writing – original draft, Writing – review & editing. XP: Writing – original draft, Writing – review & editing.

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