



Mastering Trolling Fishing Techniques

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Trolling lines is a highly efficient and selective fishing method commonly used to catch pelagic fish in both coastal and offshore environments. This technique involves towing baited hooks or artificial lures behind a moving boat to attract fast-swimming predatory species. Trolling is widely favoured due to its low operational costs, simplicity, and environmentally friendly nature. Depending on the target species and fishing conditions, various trolling techniques such as surface trolling, deep trolling, and live bait trolling can be employed. Artificial lures, including minnows, plugs, spoons, poppers, and squid jigs, are often used to mimic natural prey. Successful trolling operations depend on factors such as appropriate towing speed, lure selection, hook arrangement, and identification of productive fishing grounds. Unlike many traditional fishing methods, trolling causes minimal habitat disruption and yields high-quality catches with low bycatch levels. This article presents an overview of trolling techniques, essential gear, operational procedures, benefits, and sustainable practices adopted in modern trolling fisheries.

Key words: Selective fishing method, Pelagic fishes, High-quality fish catch and Sustainable practices

Introduction

Trolling, also known as troll line fishing, is a popular fishing technique widely practiced in artisanal, commercial, and recreational fisheries throughout the world. Traditional fishermen prefer trolling because of its simplicity, selective fishing nature, and comparatively low investment cost. In this method, one or more fishing lines carrying baited hooks or artificial lures are towed behind a moving boat to attract pelagic predatory fishes. Trolling mainly targets commercially important fishes such as seer fish (*Scomberomorus commerson*), yellowfin tuna (*Thunnus albacares*), skipjack tuna (*Katsuwonus pelamis*), barracuda, mahi-mahi (*Coryphaena hippurus*), and trevally. These fishes are visually oriented predators that actively attack moving prey organisms. Therefore, artificial lures and baited hooks are designed to imitate the swimming action of small bait fishes. Modern trolling fisheries use improved monofilament lines, corrosion-resistant hooks, swivels, sinkers, outriggers, and colourful artificial lures to increase fishing efficiency. Technological advancements such as GPS, fish finders, and sonar systems also help fishermen identify productive fishing grounds and improve catch efficiency.

Importance of Trolling Line Fishing

Trolling Line is considered an environmentally friendly fishing method because it selectively targets large pelagic fishes with minimal impact on the marine ecosystem. Unlike trawling and gillnetting, trolling causes negligible habitat destruction and produces very low bycatch. The method is highly suitable for small-scale fishermen because it requires simple gear and lower fuel consumption. Trolling lines also provides better-quality fish catch since fishes are individually hooked and brought onboard with less physical damage. High-value species such

as tuna and seer fish fetched through trolling provide good economic returns to fishermen. Trolling lines is also recognized as a sustainable fishing practice because it minimizes the capture of juvenile and non-target species. Since the fishing operation is actively controlled by fishermen, unwanted catch can often be released immediately with minimal injury. Another major advantage of trolling is its operational flexibility. Fishermen can easily modify lure type, hook size, trolling depth, and boat speed depending on the target species and fishing conditions. This adaptability makes trolling effective under different environmental conditions and seasons. The method supports better fish handling and onboard quality maintenance. Individual capture reduces bruising and spoilage, thereby improving market demand and export value. Freshly caught trolling fish are highly preferred in both domestic and international seafood markets. Trolling lines fisheries also create employment opportunities in coastal communities through lure manufacturing, gear maintenance, fish marketing, boat operation, and fish processing activities. The comparatively low investment requirement makes trolling an economically viable fishing method for artisanal and traditional fishermen. In addition, trolling consumes less fuel compared to energy-intensive fishing methods such as bottom trawling, thereby reducing operational costs and carbon emissions. This contributes to energy-efficient and climate-friendly fishing practices. The use of artificial lures further reduces dependence on natural bait resources, helping conserve small forage fishes that play an important role in the marine food chain. Consequently, trolling lines contributes to the long-term sustainability of marine fisheries resources.

Selection and Characteristics of Trolling Lines

The selection of trolling lines depends on the target species, fishing ground, trolling speed, and environmental condition

1. Understanding the Fishing Ground

The fishing ground plays a major role in determining trolling line setup, including line length, trolling depth, and gear strength. In lagoon and inshore reef areas, fishermen usually maintain short unweighted lines ranging from 15–50 m to avoid snagging on coral structures. Predatory reef fishes are highly territorial and are commonly found near reef patches and coral heads. Along outer reef edges and drop-off zones, longer lines with sinkers or diving devices are used to target fishes swimming along water depth transitions. In deep ocean waters, trolling lines may extend up to 150 m with additional weights or diving devices to reach deeper-swimming pelagic fishes. Around Fish Aggregating Devices (FADs), fishermen often begin with heavy gear near the structure and later switch to lighter lines and smaller lures when fish become cautious.

2. Selection of Trolling Line Materials

Selection of trolling line material is equally important because line strength, visibility, and sinking characteristics directly influence fishing performance. Strong monofilament or braided lines with breaking strengths above 50 kg are generally preferred in marine trolling fisheries. Since knots and crimps can reduce line strength significantly, fishermen usually select slightly stronger lines for safety. In clear ocean waters, less visible monofilament leaders are preferred because highly visible lines may discourage cautious fishes such as tuna. Wire leaders are commonly used for predatory fishes with sharp teeth, including barracuda and mackerel, whereas heavy monofilament leaders are preferred for tuna fisheries because tunas are sensitive to wire traces. Dense wire lines also sink deeper than nylon monofilament at similar trolling speeds and line lengths.

3. Importance of Trolling Line Length

The length of the trolling line greatly affects lure presentation and fish attraction. Most experienced fishermen operate trolling lines approximately 30–50 m behind the boat to minimize disturbance caused by engine noise and propeller turbulence. However, line length is adjusted according to fishing conditions. Shorter lines are commonly used near reefs to prevent entanglement, while longer lines are preferred in open waters. During multi-line trolling operations, outer lines are usually set longer than inner lines to prevent crossing and

tangling. Skilled fishermen continuously adjust line lengths depending on fish response and sea conditions.

4. Trolling Depth Management

Controlling trolling depth is another important technique in successful trolling fisheries. Running all lines at the same depth increases the chances of tangling, especially during turns or rough sea conditions. Therefore, fishermen create a multi-level trolling spread where inner lines are operated deeper using sinkers or diving devices, while outer lines remain near the surface. Intermediate lines are maintained at sub-surface depths using light weights or diving lips. Surface trolling is highly effective for tuna schools and lagoon fisheries, whereas deep-swimming tunas and other large pelagic predators are commonly targeted using weighted deep trolling systems.

5. Importance of Trolling Speed

Trolling speed has a direct influence on lure action and fish attraction. Slow trolling speeds below 5 knots are generally used with natural bait and reef trolling operations. Artificial lures are commonly operated at moderate speeds of 5–6 knots for general trolling. High-speed trolling between 6–12 knots is mainly practiced for tuna and open ocean pelagic species. Specialized trolling lures such as Kona heads and diving plugs can even be operated at speeds approaching 20 knots. At high trolling speeds, reels with proper drag systems are essential because fixed handlines may fail under sudden fish strikes.

6. Best Time and Environmental Conditions for Trolling

The timing of trolling operations significantly affects fishing success. Dawn and dusk are considered the most productive periods because predatory fishes actively feed during low-light conditions. Rising tides and high tides occurring during these periods often improve catch rates. Moon phases also influence trolling efficiency, as full moon and new moon periods generally increase fish feeding activity. Weather conditions further affect lure selection and trolling strategy. During calm and clear weather, smaller and more natural-looking lures are preferred, while larger and brighter lures perform better during rough or rainy conditions. In windy conditions, fishermen strategically position heavier lures on the upwind side to reduce line crossing.

7. Natural Bait vs Artificial Lures

Both natural bait and artificial lures are widely used in trolling fisheries, each having specific advantages. Natural bait is highly effective for cautious and heavily fished species but cannot be trolled efficiently at high speeds because it loses its natural appearance. Artificial lures are more durable, reusable, and suitable for high-speed trolling operations. During active feeding conditions, artificial lures often outperform natural bait due to their bright colours, vibrations, and erratic swimming action. Lighter leaders are generally preferred with natural bait, while stronger main lines are required for artificial lure trolling because of the sudden impact generated during aggressive fish strikes.

Recreational Importance in Trolling Line Fishing

Besides commercial fisheries, trolling is also highly popular in recreational and sport fishing because of the excitement involved in catching powerful pelagic fishes.

- Selective fishing method with low bycatch
- Minimal habitat destruction
- High-quality fish catch
- Reduced fuel consumption
- Suitable for small-scale fisheries
- Economically profitable for high-value pelagic fishes
- Reusable artificial lures reduce bait dependency

Economic Importance of Trolling Fisheries

Trolling fisheries provide direct and indirect livelihood opportunities to thousands of coastal fishermen and fish traders. High-value fishes such as tuna, seer fish, and mahi-mahi contribute significantly to export earnings and local seafood markets. The comparatively low

investment requirement makes trolling suitable for traditional and small-scale fishermen. Artificial lure manufacturing, fish marketing, boat building, and gear maintenance also generate additional employment opportunities in coastal regions.

Conclusion

Trolling fishing remains a highly efficient, selective, and sustainable fishing technique for exploiting pelagic fish resources. Its simplicity, adaptability, and low environmental impact make it an ideal choice for modern fisheries management. By combining traditional knowledge with improved technology, trolling fisheries can continue to provide livelihood opportunities while supporting responsible marine resource utilization.

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