

Sustainable development of sport fishing, protection, conservation of marine resources and environment by Andaman & Nicobar Islands Marine Fishing Rules 2017- A study

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Abstract

Recreational fishing also called sport fishing, is fishing for delight. It does vary with commercial fishing, which is done by exploiting marine fish and fishery resources. The concept of game fishing is to catch large marine water fishes by adopting responsible fishing, with catch, holds fish for photographs and release of fish back to sea in live condition without causing damage and exploiting marine environment. Sport fishing is an established activity in developed countries across the world. In India there is need to support this activity. In Andaman Islands, for its sustainable development with protection of marine environment adopted provisions under Wild Life (Protection) Act, 1972, Merchant Shipping Act for registration and made Andaman & Nicobar Islands Marine Fishing (Amendment) Rules, 2017 to regulate recreational fishing. It is categories into two group first fresh water/ land based and second is marine big recreational fishing. In Andaman Islands, mainly angling and big-game marine fishing is conducted by using sophisticated fiber boats, modern fishing equipment's and techniques to catch large marine water fishes by adopting responsible fishing. These islands have 58 registered sport fishing boat, every kind of fishing activity in A&N Islands is regulated under the provisions of Andaman and Nicobar Islands Marine Fishing Regulation- 2003 and the Rules 2004. To regulate sport fishing activities, the Department of Fisheries had published guidelines for sport fishing in A&N Islands and notified Sport Fishing Rules in A&N Islands Marine Fishing (Amendment) Rules, 2017. Under the Amended Rules 2017 for sport fishing activity notified 22 selected sailing routes having operation beyond 3 Nautical Miles from nearest Port / Jetty of Zone-A and in Zone-B, maintain 10 knot speed of vessel in coral reef area in Andaman sea prohibited in catching or collection of all animals covered under Wildlife (Protection) Act, 1972 (Act 53 of 1972), catching or collection of all marine ornamental fishes, catching or collection of all marine fishes in notified National Parks, Wild Life Sanctuaries and tribal reserved area in the Territorial water of Andaman and Nicobar Islands for protection of marine environment. In existence of provisions under Wild Life (Protection) Act, Protection of Aboriginal Tribes Act, Sport Fishing Rules in A&N Islands Marine Fishing (Amendment) Rules, 2017 makes various provision by imposing penalty for the unregulated / illegal activities by the vessel engaged in sport fishing. The sustainable development of sport fishing, protection and conservation of marine resources and environment by Andaman & Nicobar Islands Marine Fishing Rules 2017 are emphasized in the present study.

Key word: Recreational/sport fishing, marine environment, Wild Life Protection Act, Andaman and Nicobar, Fishing Rules and Regulations

1. Introduction

Andaman and Nicobar group of islands is an archipelago of 572 islands, covering an area of 8249 Sq. Km, spread over about 780 Km from North to South in the south-eastern part of Bay of Bengal. Of these,

only 38 are permanently inhabited. The islands extend from 6° to 14° North latitudes and from 92° to 94° East longitudes. The Andaman Islands are separated from the Nicobar group by a channel (the Ten Degree Channel). A&N Islands are divided into three districts, namely, the North and Middle Andaman District, South Andaman District and the Nicobar District. The Andaman and Nicobar Islands have a coastal length of 1,912 km and continental shelf area of about 35,000 sq.km, the Exclusive Economic Zone around these islands is about 6,00,000 sq. km forming 28% of the total EEZ of the country. Andaman Islands form a breathtakingly beautiful and relatively intact archipelago located in the Andaman Sea in the Bay of Bengal. Tropical rain forests flourish and endemic species of flora and fauna, 86% of the land mass in a protected forest cover. Without commercial high coral reef is almost intact which gives the fish a chance to grow to colossal sizes. Huge mass of water drawn through the islands of the tide gives the smaller fishes with an abundance of food that gives predators plenty to eat and grow. The islands have large mangroves forest which provides nursing basis for juvenile fishes and unpolluted sea provides huge potential for marine fish and fishery resources.

The concept of game fishing is to catch large marine water fishes by adopting responsible fishing, with catch, holds fish for photographs and release of fish back to sea in live condition without causing harm and exploiting marine environment. The most common form of recreational fishing (RF) is done with a rod, reel, line, hooks and any one of a wide range of baits are used for targeted fish. In Andaman Islands, basically big-game fishing is conducted from sophisticated fiber boats, modern fishing equipment's and techniques to catch large open-water species such as tuna, sharks and marlin fish catch and release fish gradually practiced by recreational fishers. For protecting marine resources and marine ecosystem, the Department of Fisheries had published guidelines for sport fishing in A&N Islands and notified Sport Fishing Rules in A&N Islands Marine Fishing (Amendment) Rules, 2017 to regulated sport fishing activity having provisions of Wild Life Protection, prohibited in catching or collection of all animals covered under Wildlife (Protection) Act, 1972 (Act 53 of 1972), catching or collection of all marine ornamental fishes, catching or collection of all marine fishes in notified National Parks, Wild Life Sanctuaries and tribal reserved area in the Territorial water of Andaman and Nicobar Islands for protection of marine environment and imposed penalty for unregulated and illegal activities by the vessel engaged in sport fishing. The sustainable development of sport fishing, protection and conservation of marine resources and environment by Andaman & Nicobar Islands Marine Fishing Rules 2017 are emphasized in the present study.

2. Objective

2.1 To analyze the existing environmental legislation and policy based conservation and management of marine resources in A&N Islands.

2.2 To analyze the Andaman & Nicobar Islands Marine Fishing (Amendment) Rules, 2017 to regulate sport fishing activity in A&N Islands.

2.3 To study the role and benefits of recreational fisheries in sustainable management of marine resources for conservation, preservation and rehabilitation of aquatic habitats.

2.4 To analyze the environmental ethics practiced in Sport fishing activity.

3. Methodology

The study dealt with the existing environmental legislation based conservation and management for marine resources and the Andaman & Nicobar Islands Marine Fishing (Amendment) Rules, 2017 imposed to regulate sport fishing activity in A&N Islands has been analyzed in the present study. For the study, primary data collected through field visit, secondary data has been collected from the Department of Fisheries, A&N Administration and by review of relevant research articles, journals local newspapers and website.

3.1 Species of fishes found in A&N Islands

Crustaceans	:	580
Molluscs	:	900
Echinoderms	:	300
Commercially important species	:	350

Source: Department of Fisheries, A&N Islands

3.2 Important sport fishing fishes of A&N Islands

Groupers, Snappers, Carangidae, Barracuda, Mackerel, Sail fish, Sword fish, Blue and Black Marlin, Tuna and tuna like fishes.

4. Environment Legislation for protection, preservation and management of marine resources and ecosystem.

4.1 Merchant Shipping Amended Rules 2009 for Registration of Sport Fishing Vessel / Boat

Registration and Licensing of fishing craft (ReALCraft) is a work flow based online application system for Vessel Registration under Merchant Shipping Amended Rule 2009 and License certificate under Marine Fishing Rule to the fishing vessels operating along the Indian coast. It has objectives to prepare a National database for fishing vessels, to prevent Illegal, unregistered and unreported vessels in the territorial waters.

For protection, conservation of marine resources and environment prohibited the anchoring of the Sport Fishing Vessel along the shore Terrestrial Island National Parks I Wildlife Sanctuaries beyond point of low tide on the landward side and imposed penalty for the unregulated / illegal activities for violating the provisions of Andaman and Nicobar Islands Marine Fishing Rules 2017 which are for:

- 4.1.1 Operation of any vessel for Sport fishing without registration, licensing, color code, gears, lifesaving appliance, communication devices
- 4.1.2 Operation of Sport Fishing Vessel in non-permitted areas other than protected areas under Wild Life Protection Act- 1972 and
- 4.1.3 Operation of Sport Fishing Vessel for activities other than recreational fishing.

4.2 Wild Life Protection Act, 1972 for protection, preservation and management of Marine Resources

A total of 61 species of marine fishes including sharks and rays, all species of Syngnathidians or Sea horses and one Giant grouper fish are protected under Wildlife (Protection) Act, 1972 and listed in Schedule-I which prevent its collection and 3 species of sharks and rays are protected under appendix-II which restricted the trade of these fishes in order to avoid un-sustainable utilization. The population of turbo seems to have been exploited to levels of extirpation, due to increasing concerns about the plummeting stocks of *Trochus niloticus* and *Turbo marmoratus* as a result of heavy fishing pressure and improper protection from poachers, both species were added to Schedule IV of the Wildlife (Protection) Act, 1972, through the Ministry of Environment and Forests' notification dated December 5, 2001. Fishes protected under Wildlife Protection Act-1972 are whale shark (*Rhincodon typus*), shark and ray (*Anoxypristis cuspidate*), *Carcharhinus hemiodon*, *Glyphis gangeticus*, *Glyphis glyphis*, *Himantura fluviatilis*, *Pristis microdon*, *Pristis zijsron*, *Rhynchobatus djiddensis*, *Urogymus asperrimus*, Giant Grouper (*Epinephelus lanceolatus*), Dugong dugong, Dolphin, Sea Horse- All Syngnathidian, *Hippocampus hystris*, *hippocampus erectus* and catching or collection of all animals covered under

Wildlife (Protection) Act, 1972 (Act 53 of 1972), which includes fish, crustacean, shell fish, sea-cucumber, Sea grasses and Corals (dead or living) and catching or collection of all marine ornamental fishes. (Explanation Marine Ornamental Fish means and include Butterfly, Scorpion, Damsel, Parrot, Angel, Doctor, Puffer, Cat Fish, Surgeon, Sea anemone, Clown fish, Turbo worm, Sponges and any other fishes and catching or collection of all marine fishes in notified under A&N Islands Marine Fishing Rules 2017. The sport fishing vessel are not allowed to operate in coral reef area, tribal belt of these Islands, Marine National Parks, Sanctuaries and such other areas notified in the official gazette.

4.3 Andaman & Nicobar Islands Marine Fishing (Amendment) Rules, 2017 for regulating recreational fishing activity

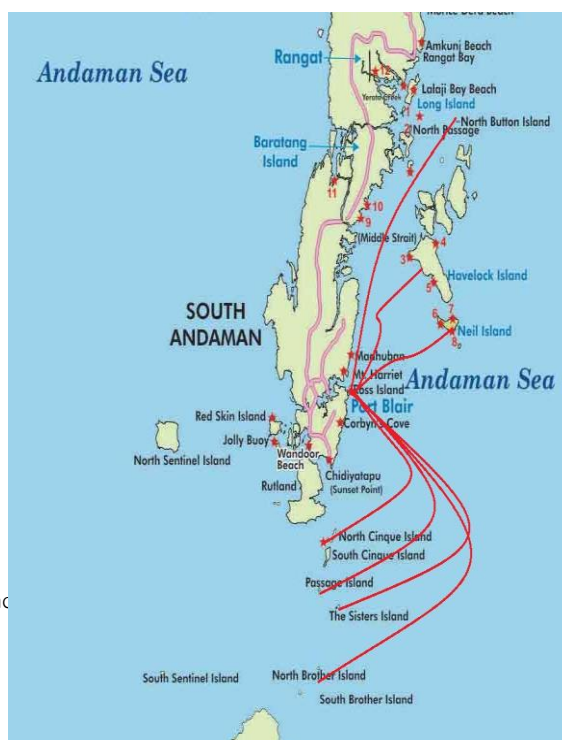
Every kind of fishing activity in A&N Islands is regulated under the provisions of Andaman and Nicobar Islands Marine Fishing Regulation- 2003 and the Rules 2004. To regulate sport fishing activities, Department of Fisheries had published guidelines for sport fishing in A&N Islands and notified Sport Fishing Rules in A&N Islands Marine Fishing (Amendment) Rules, 2017 towards registration, licensing and launched Sports Fishing portal for obtaining permit. Under the Amended Rules 2017 for sport fishing activity notified 22 selected sailing routes having operation of Sport Fishing Vessel beyond 3 Nautical Miles from nearest Port / Jetty of Zone-A and in Zone-B as specified under A&N Marine Fishing Rule 2017 in Andaman sea to regulate sports fishing activity and prohibited in catching or collection of all animals covered under Wildlife (Protection) Act, 1972 (Act 53 of 1972), catching or collection of all marine ornamental fishes, catching or collection of all marine fishes in notified National Parks, Wild Life Sanctuaries and tribal reserved area in the Territorial water of Andaman and Nicobar Islands for protection of marine ecosystem.

In existence of provisions under Wild Life (Protection) Act, Protection of Aboriginal Tribes and notified Sport Fishing Rules in A&N Islands Marine Fishing (Amendment) Rules, 2017 made various provision of imposed penalty for the unregulated / illegal activities by the vessel engaged in sport fishing for protecting marine environment.

4.4 Sailing route for Conducting Sport Fishing

The Department of Fisheries, A&N Administration has provided 22 selected sailing routes having operation of sport fishing vessel beyond 3 nautical miles from nearest Port / Jetty of Zone-A and in Zone-B specified under A&N Islands Fishing Rules, maintain 10 knot speed of vessel in coral reef area as specified under A&N Marine Fishing Rule 2017 in Andaman sea to regulate Sports Fishing activity in A&N Islands which are:

Sl.No	Sailing Route
1.	Off Brother Island (Beyond WLS)
2.	Off Sister Island (Beyond WLS)
3.	Off Cinque Island (Beyond WLS)
4.	Off Passage Island (Beyond WLS)
5.	Off Incredible Bank (Beyond WLS)
6.	Off Button Island (Beyond WLS)
7.	Off Neil Island,



8. Off Havelock Island
9. Off Invisible Bank (Beyond WLS)
10. Off Little Andaman
11. Off South Sentinel Island (Beyond WLS)
12. Off Rutland Island
13. Off Middle Button (Beyond WLS/NP)
14. Off North Button (Beyond WLS)
15. Off South Button (Beyond WLS/NP)
16. Off Outram Island (Beyond WLS)
17. Off Sir Hugh Rose Island (Beyond WLS)
18. Off Inglis Island (Beyond WLS)
19. Off Campbell Shoal Island
20. Off South Banks
21. Off Middle Banks
22. Off West Coral Banks

Source: www.and.nic.in

5. Environmental Ethics practiced in Sport fishing activity

5.1 Care for proper catch and release

Catch and release of fishes is practiced only within recreational fishing and implemented by recreational fishers. The general principle is that releasing fish allows them to survive, thus avoiding unintended depletion of the population, size limits apply to certain species, meaning fish below a certain size must, by law, be released. It is generally believed that larger fishes have a greater breeding potential. Catch-and-release is necessary for sport fishing to remain sustainable, is practices that generally has high survival rates. With growing fishing and environmental pressures, we need to manage our highly valued aquatic resources sustainably to ensure there are fish for the future by proper implementation of A&N Islands Marine Fishing Rule 2017. Releasing fish and catch care can help ensure there will be fish for the future by taking care of the fish you catch by releasing all undersize or excess fish as carefully and as quickly as possible. Use a wet rag or wet your hands to handle fish. Treat fish gently to reduce stress and injury to fragile scales and protective slime. Release prohibited fish species as soon as possible.

5.2 Use of barbless or circle type fishing hook

A circle hook is a type of fish hook which is sharply curved back in a circular shape. It has become widely used among anglers in these islands because the hook generally catches more fish and is rarely swallowed. Since the circle hook catches the fish on the lips at the corner of its mouth, it usually decreases the mortality rates of released fish as compared to traditional J-type hook which are often swallowed by the fish, cause damage to the gills or vital organs. The circle hook's shape allows it to only

hook onto an exposed surface, which in the case of a fish means the corner of its mouth. Circle hooks do less damage to fish than the traditional J-hooks. This is good for conservation, since it improves survival rates after release.

6. Role of recreational fisheries in sustainable management of marine resources for conservation and rehabilitation of aquatic habitats

According to Food and Agriculture Organization of United State “Globalish” - Analysis and information on world fish trade published article, global estimates of participation in Recreational Fisheries is difficult due to limited data available, particularly in less developed countries. Rough estimates of the global number of recreational fishers vary widely, from a minimum of 220 million to a maximum of 700 million, with this higher estimate almost twice the number of commercial fishers. Recreational Fisheries operates within a competitive sphere among commercial fisheries, which may harvest from the same stock. It provides diverse revenues and opportunities; with a widely promoted catch and release policy within this sector, allows for a multiplication of value per fish actually harvested. With the expansion of the middle class the actual numbers participation in recreational fisheries is increasing day by day, particularly in developing Nations. Introduction of affordable sophisticated sport fishing boat and modern fishing techniques during last decades has increased its scope and barrier/ tag of rich people sport is decreased. On the other side, mismanagement of RF can cause several conservation issues, including: high stock exploitation, selective harvest of trophy fish, habitat destruction, unwanted catch and release mortality/disease, introduction of non-native species and disturbance of the environment. With these concerns, it is necessary to orient the RF sector towards environmental sustainability.

Measure such as the licensing of anglers and boats, establishing closed seasons and developing size and bag limits is made under A&N Islands Marine Fishing Rules 2017 for sustainable development with protection of marine environment by Andaman & Nicobar Islands Marine Fishing Rules 2017 and to avoid conflicts in terms of resource allocation with commercial fishers as these islands are heavily depending on tourism and commercial fishing for economic development, employment and food security.

7. Benefits of recreational / sports fishing

- 7.1 Sport fishing activities encourage tourists (Indian and foreign) thus attracts fish lovers around the world for recreational fishing adventure which help in increasing economy and promote adventure tourism.
- 7.2 Recreational fishing can establish a sustainable earning industry.
- 7.3 The recreational fishing creates more employment opportunities; beyond this extend social and cultural domains and cohesion.
- 7.4 The concept of sports fishing is based on catch and releases of fishes back to sea in live condition gives tourists a thrill, pleasure, environmental education and a mesmerizing life time experience through sport fishing without causing damage of marine ecosystem.
- 7.5 The recreational fishing encourages for adopting responsible and ethical fishing practices and motivate fishers involved in commercial / subsistence fishing activity for adopting responsible fishing practice, maintain and enrich marine ecosystem.

8. Measures and suggestions

- 8.1 Adopting/encouraging responsible and ethical fishing practices constant with the technical training and guidelines for recreational /sport fishing and responsible fisheries for sustainable development with protection and conservation of marine ecology.
- 8.2 Creating awareness programmes among Indian and foreign tourists, local youths and fisher's community for environment issues relates to sport fishing activities

- 8.3 Encourage Sport fishing fishers to use barbless hook and release fishes as soon as possible to reduce the effects of barotrauma and maximize their chance of survival.
- 8.4 Encourage utilization of sport fishing boat by researchers and scholars.
- 8.5 The concept of game fishing is to catch large marine water fishes by adopting responsible fishing, with catch, holds fish for photographs and release of fish back to sea in live condition. This concept can be better utilized by tagging the fishes before being released back to sea for collecting data for various means and requires training.
- 8.6 Greater opportunity/possibility of developing seashore / land based recreational fishing and inland / freshwater recreational fishing in these islands.
- 8.7 The sport fishing vessel is fitted with powerful outboard engine needs less time to reach seashore and on the other side while at sea is in better position of informing sighting of any poacher which illegally exploit our marine resources. By the utilization of sport fishing vessels, the security agencies altogether can be achieved new milestones in the course of strengthening the security architecture, protection from external intruders, reduction of poaching activities and other challenges faced in the marine environment.

9. Conclusion

The A&N Administration, for sustainable development of sport fishing with protection of marine species and environment by adopted provisions under Wild Life (Protection) Act, 1972 and Merchant Shipping Act made Andaman & Nicobar Islands Fishing (Amendment) Rules, 2017 to regulated sport fishing activities in these islands. Published guidelines and notified Sport Fishing Rules in A&N Islands Marine Fishing (Amendment) Rules, 2017.

Notified 22 selected sailing routes having operation of sport fishing vessel beyond 3 Nautical Miles from nearest Port / Jetty of Zone-A and in Zone-B, maintain 10 knot speed of vessel in coral reef area, prohibited in catching or collection of all animals covered under Wildlife (Protection) Act, 1972 (Act 53 of 1972), catching or collection of all marine ornamental fishes, catching or collection of all marine fishes in notified National Parks, Wild Life Sanctuaries and tribal reserved area in the Territorial water of these Islands for protection of marine species and environment. Imposing penalty for the unregulated / illegal activities by the vessel engaged in sport fishing. The sustainable development of sport fishing, protection and conservation of marine resources and environment by Andaman & Nicobar Islands Marine Fishing Rules 2017 are emphasized in the present study.

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References

- [1] Guidelines for sport fishing in Andaman and Nicobar Islands and Andaman & Nicobar Islands Marine Fishing Amendment Rule 2017 published by the Department of Fisheries, A& N Administration.
- [2] Website: www.and.nic.in, www.andaman.gov.in, www.dt.andaman.gov.in, Wikipedia, the free encyclopedia on recreational fisheries in India and Angling with a rod and Recreational fisheries development in India, Ramakrishnan Korakandy
- [3] Sport fisheries in India: K.L. Sehgal, National Research Centre on cold water fisheries, Haldwani, Nainital, Uttar Pradesh.
- [4] Sport fishing in Andaman Islands: Arif M. Mustafa, Akshay Malavi, Aberdeen Bazar, Port Blair, South Andaman (First Edition 2013)
- [5] Status of Recreational Fisheries in India: Development, Issues, and Opportunities: Nishikant Gupta, Shannon D. Bower, Rajeev, Raghavan, Andy J. Danylchuk, Steven J. Cooke, Department of Geography, King's College London, Strand, London. UK.

- [6] FAO. Recreational Fisheries. FAO Technical Guidelines for Responsible Fisheries, No. 13. Rome: FAO. 176 pp. (2012).
[7] Recreational fishing guide 2016, Department of Fisheries, Government of Western Australia.
[8] Survey of Recreational Fishing in Canada 2005 & 2010, Fisheries and Ocean, Canada.

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