An overview of elasmobranch fisheries of West Bengal in 2018

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Abstract

Elasmobranch fishery of West Bengal comprises of sharks, rays, guitarfishes and skates. Due to demand in the national and international market, the fishery has gained importance though it is not a targeted resource. The catch data showed that the fishery is in a declining phase since 2016. The estimated landing of elasmobranchs (3799 tonnes) has shown a further decrease of 12.6% during 2018 in West Bengal compared to 2017. Sharks form the major portion (48%) of the elasmobranch fishery followed by rays (40%) and guitarfishes (12%) during 2108 in West Bengal. The fishery flourished more during the first (January-March) and last quarter (October-December)of the year. Maximum catch of sharks have been observed in October followed by February. The gear-wise landings of sharks showed that multiday trawlers contributed 81% of the shark landings followed by mechanized gill netters (17%) and the remaining 2% by inboard gill netters. Maximum catch of rays have been observed during June followed by January and October. The rays were mainly exploited by trawlers (76%) followed by hook and lines (15%) and gill netters (8%). Maximum catch of guitarfishes was observed during January followed by August and February. Guitarfishes are landed mostly by trawlers (91%) followed by gill nets (9%). The elasmobranch resources in West Bengal are very diverse in nature. However, there is a continuous decline in the landings which could be detrimental in future if the resources are not managed properly. Hence, it is recommended to follow good management practices to ensure long term sustainability of the resources.

Key words: *Elasmobranchs, fishery, West Bengal, management*

Introduction

Elasmobranchs (sharks, rays, skates and guitarfishes) form one of the important commercial fisheries of West Bengal under the demersal fisheries resource group. Though not targeted by the fishermen, elasmobranchs are usually caught as by-catch in trawlers and gillnetters. However, due to increase in demand for sharks in the national and international markets, the landed sharks fetch goodmarket price. Different species of elasmobranchs landed at DighaMohana, Petuaghat, Shankarpur, Kakdwip, Namkhana, Diamond Harbour, Fraserganj fish landing centres of West Bengal are *Rhizoprionodon oligolinx, Scoliodon laticaudus, Alopias* sp., *Carcharhinus dussumieri, Galeoceredo cuvier, Carcharhinus limbatus, Chiloscyllium* sp., *Iago* sp., *Carcharhinus leucas, Sphyrna lewinii, Carcharhinus amblyrhincoides, Carcharhinus sorrah, Rhinobatos lionotus, R. annandalei, Glaucostegus granulatus, Gymnura poecilura, Pastinachus ater, Maculobatis gerrardi, Brevitryogon imbricata, Pateobatis jenkinsii, Pateobatis bleekerii, Himantura uarnak, H. undulata, H. pastinacoides, H.leoparda, Urogymnus polylepis, Aetobatus ocellatus, A. narinari, Mobula mobular, Mobula kuhlii, Rhinoptera javanica, R. jayakari, Rhina ancylostoma* and *Pristis microdon*.

The trend of estimated elasmobranch landings in West Bengal indicates a general declining trend (Fig.1). Sharks form the major portion (48%) of the elasmobranch landings followed by rays (40%) and guitarfishes (12%) during 2018 in West Bengal. The monthly composition of sharks, rays and skates in the elasmobranch landings in 2018 is shown in Fig.2. The landings are more during the first (January-March) and last quarter (October-December) of the year.

The month-wise catch indicates maximum catch in October followed by February. Among sharks, the *Carcharhinus* genus forms the dominant group contributing 78% of the total shark landing. The species composition was *Carcharhinus* sp. (50.5%), *Scoliodon laticaudus* (15.34%), *Rhizoprionodon oligolinx* (5.68%), *Carcharhinus dussumieri* (5.08%), *Carcharhinus sorrah* (0.25%), *Sphyrna lewinii* (0.17%), *Carcharhinus leucas* (0.07%). Monthwise species composition of sharks landed is shown in Fig.3. Other sharks observed in the landings were *Chiloscyllium* sp. (15.6%), *Iago* sp. (7.2%) and *Alopias* sp. (0.02%) (Fig.3). The gear-wise landings of sharks showed that multiday trawlers contributed 81% of the shark landings followed by mechanized gill netters (17%) and the remaining 2% by inboard gill netters.

The monthly landings of rays indicated maximum in June followed by January and October (Fig.2). The rays landing were mainly contributed by *Himantura* sp. (97.18%). A minor quantity was also contributed by *Mobula* sp. (2.19%) followed by *Aetobatos* sp. (0.27%)

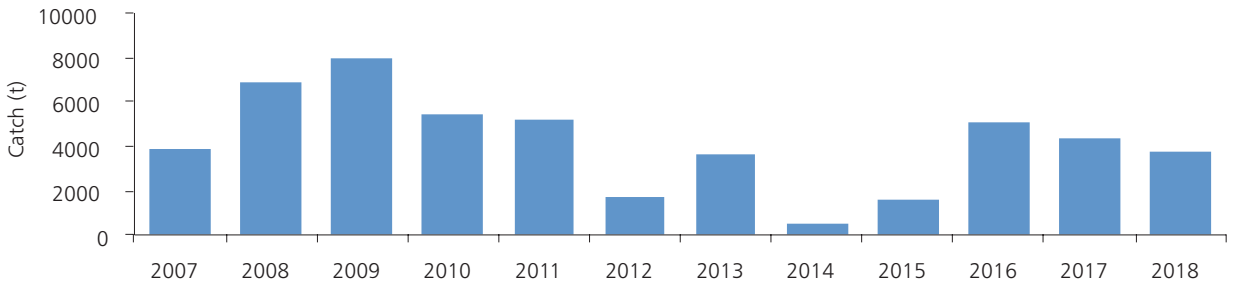


Fig. 1. Historic trend of elasmobranch landings in West Bengal during 2007-18

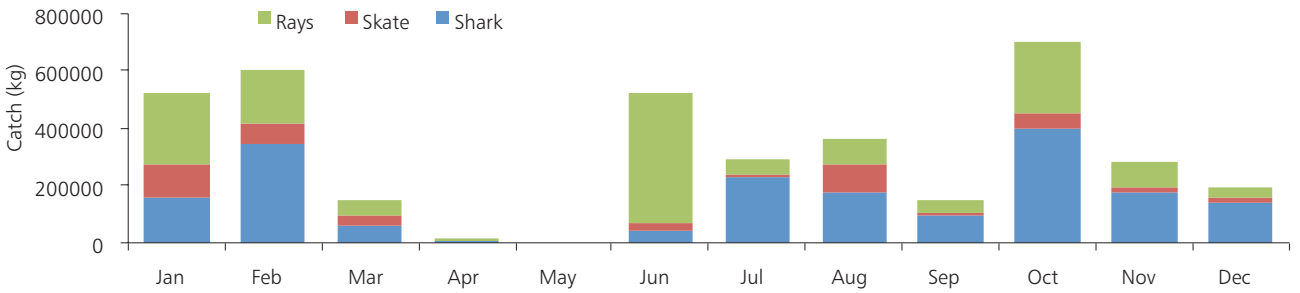


Fig. 2. Month-wise catch and group composition of elasmobranchs in West Bengal during 2018

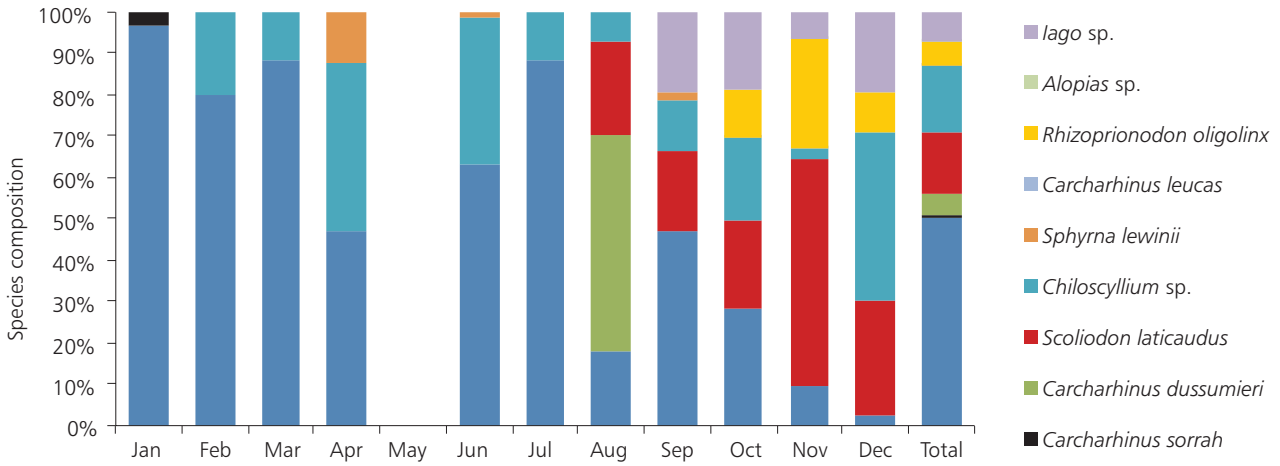


Fig. 3. Month- wise species composition of sharks in West Bengal during 2018

a. *Mobula mobular*

b. *Carcharhinus leucas*

c. *Glaucostegus granulatus*

d. *Himantura undulata*

e. *Chiloscyllium* sp.

f. *Gymnura poecilura*

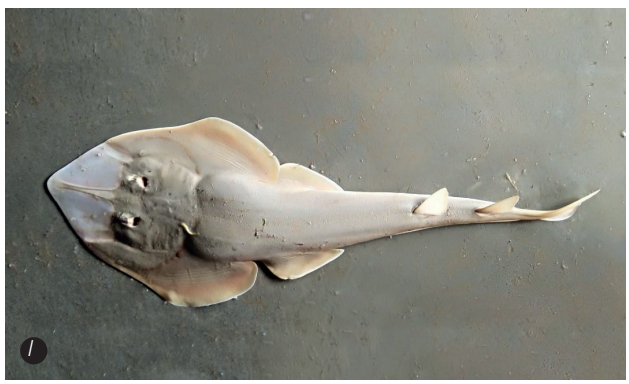
g. *Iago* sp.

h. *Scoliodon laticaudus*

i. *Rhinobatos lionotus*

j. *Urogymnus polylepis*

k. *Sphyrna lewini*



l. *Glaucostegus obtusus*

m. *Pastinachus ater*

n. *Pateobatis bleekeri*

o. *Rhina ancylostoma*

p. *Galeocerdo cuvier*

q. *Rhinoptera jayakari*

r. *Rhinoptera javanica*

s. *Himantura urnak*

t. *Maculabatis gerrardi*

u. *Rhinobatos annandalei*

v. *Carcharhinus amblyrhynchoides*

Fig.4 (a-v). Different elasmobranch resources landed in West Bengal

and other rays (34%). The rays were mainly exploited by trawlers (76%) followed by hook and lines (15%) and gill netters (8%).

The month-wise catch of guitarfishes is shown in Fig.2. Maximum catch was observed during January followed by August and February. These landings were mainly contributed by *Glaucostegus granulatus* (57.31%) followed by *Rhinobatos lionotus* (42.68%). Guitarfishes are mainly landed by trawlers (91%) followed by gill nets (9%).

Consumer preference for shark, ray or skate meat is very low in local market of West Bengal. The catch are auctioned in landing centres and sold to the fish trading entities and processors for the overseas markets. There is a good export trade for meat and fin of sharks and rays in Digha and Kakdwip. The fish traders cut the whole sharks, rays and guitarfishes in their processing plants and export the meat and fins to different cities like Kochi, Chennai, Bengaluru in India and to some foreign countries such as China, Nepal, Japan, Hong Kong through their Kolkata and Sialda based processing hubs.