

Unusual heavy landing of rays and skates at Tuticorin Fisheries Harbour

P. U. Zacharia and P. Kandan

Tuticorin Research Centre of CMFRI, Tuticorin

Tuticorin coast is known for the rich elasmobranch resources consisting of sharks, rays and skates. However, the landing of the resource was declining over the years. Elasmobranchs are mainly caught by trawlers, hooks and line and gillnets. At Tuticorin Fisheries Harbour (TFH), which is one of the major landing centre along the Gulf of Mannar (GOM) coast, the trawl fishery was excellent when fishing resumed on 30th May 2009 after the 45 day monsoon ban. On 15th of July 2009, unusual heavy landing of rays and skates was noticed (Fig. 1). The landing of rays and skates on this day alone was estimated as 33.3 t consisting of nine species of rays and four species of skates.

Landing of rays

The fishery was composed of *Himantura bleekeri* (45%), *H. uarnak* (10%), *H. marginatus* (3%), *Dasyatis centroura* (4%), *Pastinachus sephen* (9%), *Aetobatus narinari* (10%), *Mobula mobular* (11%), *Rhinoptera javanica* (7%) and *Gymnura poecilura* (1%). On enquiry, it was understood that, fishing was carried out at 29 fathom (52 m) depth, off Tuticorin. The fishing voyage started at 0500 hrs reaching the fishing area after 3-4 h of voyage. The boats carried



Fig. 1. A view of Tuticorin Fisheries Harbour on 15-7-2009

out 4-6 hauls, each lasting for 1.5-2 h and returned to the landing centre by 2200 hrs and continued till 0300 hrs on the following day. The total fish landing during the observation day at TFH was estimated as 340 t by 207 boats and the rays constituted 6.6% of the total landings (Table 1).

Landing of skates

Nearly 10.7 t of skates (wedgfishes and guitarfishes) were landed on the same day by few trawlers and four species were identified in the

Table 1. Landings, length range and sex ratio of rays landed at Tuticorin Fisheries Harbour

Species	% in catch	Nos. landed	Total quantity (kg)	Length range (cm)	Sex ratio (M:F)
Family Dasyatidae (Sting rays)					
<i>Himantura bleekeri</i>	45	198	10168	59-106	73-27
<i>Himantura uarnak</i>	10	33	2260	67-109	64-36
<i>Himantura marginatus</i>	3	12	678	42-69.6	69-31
<i>Dasyatis centroura</i>	4	12	904	67.9-97	68-32
<i>Pastinachus sephen</i>	9	27	2033	94-125	91-9
Family Myliobatidae (Eagle rays)					
<i>Aetobatus narinari</i>	10	34	2260	113-172	78-22
Family Mobulidae (Devil rays)					
<i>Mobula mobular</i>	11	36	2486	162-220	81-19
Family Rhinopteridae (Cownose rays)					
<i>Rhinoptera javanica</i>	7	19	1582	141-166	83-17
Family Gymnuridae (Butterfly rays)					
<i>Gymnura poecilura</i>	1	30	226	36-47	69-31

landings. The percentage composition and other details are given in Table 2.

are bottom dwelling fishes and are important part of the marine ecosystem. They are facing

Table 2. Landings, length range and sex ratio of skates landed at Tuticorin Fisheries Harbour

Species	% in catch	Nos. landed	Total quantity (kg)	Length range (cm)	Sex ratio (M:F)
Family Rhinidae (Wedgefishes)					
<i>Rhina ancylostoma</i>	27.1	65	2900	117-136	90-10
Family Rhinobatidae (Guitarfishes)					
<i>Rhinobatos granulatus</i>	43.2	506	4620	52-79	86-14
<i>Rhinobatos obtusus</i>	19.2	118	2050	49-72	79-21
<i>Rhinobatos annandalei</i>	10.5	210	1125	53-82	84-16

Price structure and marketing

The fishes were sold at the landing centre at Rs. 25-60 /kg for rays, Rs 10-15/ kg for guitarfishes and Rs. 40-50 /kg for wedgefishes. The fins of *Rhina ancylostoma* was sold for Rs.500-1000 /kg. On enquiry, it was understood that the fishes would be taken to Kayalappattinam, salt cured for 2-3 days after removing the head and later sundried. The processed meat is transported to Kerala where its flesh has good demand in dried condition. The dried fish will be sold for Rs. 80-100/kg. The main use of the fins is as raw material for medicinal purpose.



Fig. 2. Skates kept onboard the trawl boats on 15-7-2009

The present landing of nine species of rays belonging to four families and skates belonging to two families indicate that the Tuticorin coast is rich in batoid fish diversity. On an average 1,334 t of rays are caught annually by trawlers, hooks and line, bottom-set gillnet and driftnet at Tuticorin (Arumugham and Balsubramanian, 2007). They have stated that all the body parts of rays are processed for value added products like ladies' bags, belts and fancy items. The rays and skates



Fig. 3. Rays being taken for auctioning



Fig. 4. Removing the skin of ray for manufacture of leather chappal

overexploitation in several parts of the world. They are mainly predators with slow growth rate, late onset of sexual maturation and produce less number of offsprings. Rays and skates are similar to sharks in having life history strategy that make them vulnerable to overexploitation. A few targeted or by-catch batoid fisheries had been impaired by overexploitation of the breeding stocks (Compagno, 1999). Only in the past few years,

there has been widespread concern about the catch trend in batoid fishes worldwide. The skate *Rhynchobatus djiddensis* is included in the IUCN red list under endangered species and is banned from catching. Concern about the vulnerability to overexploitation have lead to Western Australian commercial fishing boats being prohibited from catching rays and skates except very few boats

that have license for fishing these animals. The ban will help to reduce the capture of on-at risk species and assist the recovery of a range of other species that are likely to be overfished. The unregulated landing of batoid fishes at Tuticorin may lead to a situation like this, which points to the need for regulation of the fishery in the Gulf of Mannar.