

IOCEAN programme: Citizen Science

Predator or Prey? Preliminary Observations on Shark Landings at Dhakke

Introduction

Dhakke Fishing Harbour is one of the largest and busiest harbours in Karnataka, located along the Arabian Sea in Mangaluru. It plays a vital role in supporting the local fishing economy with its advanced infrastructure and daily landings. The harbour also serves as a key site for fish trade, processing, and export activities. Mangaluru, located along the Arabian Sea in Karnataka, is a prominent hub for marine fisheries on India’s west coast. With rich fishing grounds and a favourable continental shelf, the region supports a wide range of fish species and sustains thousands of livelihoods.



The city is home to major fishing harbours like Dhakke (Old Port), Bunder, and Malpe, where both traditional and mechanised boats operate. Commonly landed species include pomfrets, sardines, mackerels, prawns, tunas, and seer fishes. Overfishing of marine resources has pushed more than one-third of chondrichthyan species toward extinction (Dulvy et al. 2021).

contributed to population declines (Karnad et al. 2019). The present study aims to understand the local context of shark fisheries in Mangalore by addressing the following questions: Is there a significant shark fishery in the region? Which shark species are landed at Dhakke? What

India is among the top three shark-fishing nations in the world (Tyabji et al. 2020). While the global fin trade is a major driver of shark declines, there is increasing evidence that local consumption adds to the complexity of these pressures (Karnad et al. 2024). Poorly regulated fisheries have also



is the scale of landings? What fishing gears are used to catch sharks? Is there active local consumption? Where are sharks sold, and how are they used?

Methodology

We conducted fish landing surveys at Dhakke fish market in Mangalore with particular focus on shark species, their abundance, trade, and other uses. We visited the harbour every alternate day from 02–26 May 2025 to collect data on shark landings. We monitored the landing and unloading of the fishes and mainly looking for the shark landings. Efforts were made to click pictures of the sharks focusing on its key characteristics necessary for identification. A reference like pen or foot was placed in every picture to get an estimate of the length of sharks. The shark species were identified from morphological features in photographs by Vishnu H, an elasmobranch researcher at University of Kerala.

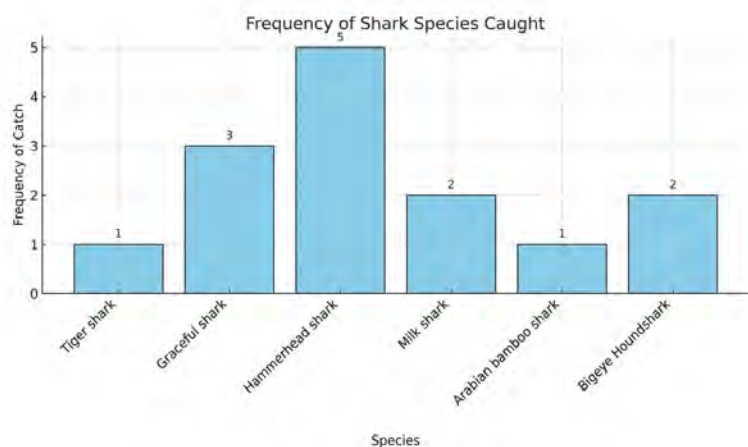
To understand more of the economic aspects, the team interacted with the local fishermen to get more information on the selling prices of different shark species, market value, and demand. Interacting with the fishermen helped us

understand the fishing practices or gears used, duration of their fishing trips and about the seasonal varieties of the sharks. Most of the boats that go for fishing were observed to go for a duration of around 10 days.

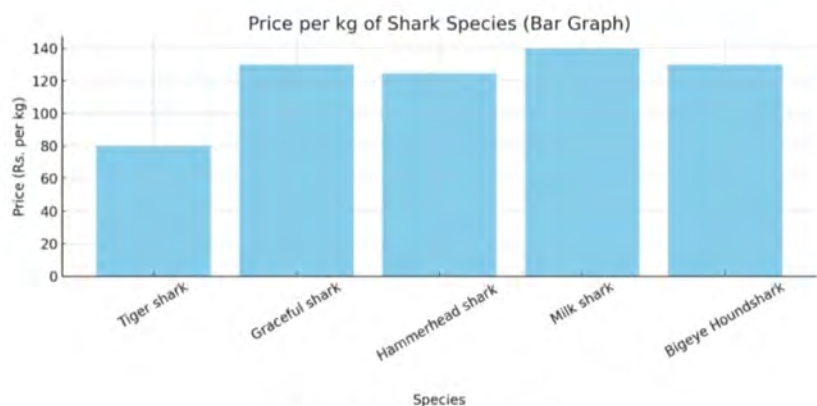
Observations & Results

We found out that there are species that were not consumed by the people but instead were utilized for the preparation of fertilizer, poultry feed, fish meal, fish oil factories etc.

Many of the shark species were also transported to other bigger harbours in and



Frequency of each shark species caught on the days of the survey. Each bar represents how many different days each species was observed being landed at the harbor.



Graph 2. Rates the shark species were sold for.

Rates the shark species were sold for.

out of the city due to its good meat quality, demand, and market value.

Our survey was conducted for a period of nine days, by which we understood the landings of sharks, species that are caught and the local trading practices.

From our survey photographs, six (6) different species of sharks were observed-

1. Tiger Shark *Galeocerdo cuvier*
2. Graceful Shark *Carcharhinus amblyrhynchoides*
3. Scalloped Hammerhead Shark *Sphyrna cf. lewini*
4. Bigeye Houndshark *Iago omanensis*
5. Arabian Bamboo Shark/ Arabian Carpet Shark *Chiloscyllium arabicum*
6. Milk Shark *Rhizoprionodon acutus*

Table 1. Measurements and stage of life of sharks landed at Dhakke during survey period.

Shark Species	Total Length (Snout Tip to Tail Length) recorded for few individuals during survey	Inferred Stage of Life	Rationale for inferred Stage of Life
1. Tiger Shark	120 cm	Juvenile	Pups are of 80-90 cm TL; Males mature at 300 cm; females mature at 290 cm from Simpfendorfer et al. (2001)
2. Graceful Shark	100 cm	Juvenile	Length at Maturity is 115 cm (fishbase 2026a)
3. Scalloped Hammerhead Shark	140 cm	Juvenile	Length at Maturity is 210 cm (fishbase 2026b)
4. Bigeye Houndshark	80 cm	Juvenile	Length at Maturity is 55.7 cm (fishbase 2026c)
5. Arabian Bamboo Shark	60 cm	Adult	Length at Maturity is 49.5 cm (fishbase 2026d)
6. Milk Shark	95 cm	Juvenile	Length at Maturity is 75 cm (fishbase 2026e)

Our observations & inferences

Observations	Inferences/thoughts
O1. From our data listed in table 2, species were mostly sold to local markets	I1. O1 implies there exists local consumption of sharks in the area.
O2. From table 2, species along with the decomposed ones were sent for fertilizers	I2. According to the fishermen, due to the presence of zinc in shark body fluids, the decomposed sharks were sold to fertilizers. Although some sharks are commercial species, the reasons why they are not preserved in good conditions and are instead sent to fertilisers is not clearly understood.
O3. From table 1, mostly juveniles were being caught	I3. Juveniles are often caught as bycatch (unintended catch) when targeting other species, especially in mixed-species fisheries.
O4. Three individual Tiger sharks were found at the same place unsold for six days	I4. The species may not be commonly consumed or could be avoided as it was found decomposing
O5. Around the last few days of the survey, (end my May month) there were not many sharks in the catch.	I5. Perhaps due to the heavy rain and storms that hit the coastal region
O6. Lot of species were exported to various other places like Madras, Kerala, Udupi, Kundapura, Kochi etc	I6. Suggests the consumption of the species is quite widely spread across Karnataka coastline region.

Table 2. Survey log – Information on shark species landed, their abundance and gear used at Dhakke from 02–26 May 2025.

Date	#species observed	Species name	Trade information	Gear used	Abundance
02.v.2025	2	1. Milk Shark	Feed (decomposed)	nets for deep fishes, Mechanised boat	25–28 individuals (of sizes given in image)
		2. Arabian Bamboo Shark	People do not buy them; they won't be consumed.	N/A	1 individual
08.v.2025	6	1. Tiger Shark	Sold for local consumption, sold as whole for Rs. 1,500 / or Rs. 80/kg	Net catching, mechanised boat	individual
		2. Graceful Shark	Local consumption (juveniles) or exported to Kochi (adults).	Deep sea net catcher fishing, mechanised boat	Only 1 of along with 20–26 juveniles (of sizes given in image)
		3. Hammerhead Shark (likely Scalloped)	Local consumption or exported to Udupi, Puttur or Thalapady, sold for Rs 120/kg, consumed or sold as feed, fertilisers or medicinal purposes.	Deep sea net catcher fishing, mechanised boat	3–4 individuals
		4. Arabian Bamboo Shark	Consumption or decomposed ones are sold as feed or fertilisers	Automatic crane net catching, mechanised boat	4–5 individuals in a basket, 26 decomposed individuals found
		5. Tiger Shark	Exported to Kerala; local consumption of individuals and egg containing individual goes to fishery feed factory mechanised	Deep sea net catcher fishing, Mechanised boat	7–8 individuals (one of them was carrying eggs not allowed to click picture)
		6. Tiger Shark	Exported to Mumbai for a 5-star hotel, sold for Rs 45,000	Deep sea net catcher fishing, mechanised boat 'Geeta'	1 individual
13.v.2025	3	1. Hammerhead Shark (likely Scalloped but could be mixed with other hammerhead shark species)	exported to Kannur and some to local market	Mechanised boat 'Nizamuddin Shah'	3 individuals along with another crate of 30+ individuals
		2. Graceful Shark	Sold to local market for consumption	Mechanised boat 'Nizamuddin Shah'	1 individual along with 3 species in crate.
		3. Arabian Bamboo Shark		Deep sea net catcher fishing, mechanised boat BH fisheries	9 individuals in total, 7 juveniles
15.v.2025	2	1. Milk Shark	sold to dhakke fish market (for local consumption) Rs 130–150/kg	Mechanised boat 'Firza'	2 individuals
		2. Hammerhead Shark (likely Scalloped but could be mixed with other hammerhead shark species)	local market and the crates transported to madras for consumption	Mechanised boat 'Searose'	3 individuals separated for selling and a crate full for transport approximately 35+
17.v.2025	1	1. Graceful Shark	Sold for local consumption to the local market for Rs 130/kg	Automatic crane net catching, mechanised boat 'Imam Bukhari'	4 individuals
19.v.2025	0	N/A	N/A	N/A	N/A
22.v.2025	5	1. Hammerhead Shark (likely Scalloped)	Local consumption for Rs 130/kg	Mechanised boat 'Sainidhi'	1 individual
		2. Bamboo Shark	Local consumption in Mangalore Dhakke fishing market for Rs 130/kg	Deep sea net catcher fishing, mechanised boat 'Shri Devi Prasad'	4 individuals
		3. Graceful Shark	local consumption Rs 150/kg	Deep sea net catcher fishing, mechanised boat	1 individual

Date	#species observed	Species name	Trade information	Gear used	Abundance
22.v.2025	5	4. Hammerhead shark (likely Scalloped but could be mixed with other hammerhead shark species)	Local consumption for 130 per kg	Mechanised boat 'VH Fishery' bycatcher	Approximately 20 individuals
		5. Bigeye Houndshark	Local consumption Rs 150/kg for the adult individual, juveniles at Rs 130/kg	N/A	1 individual between 6 juveniles
23.v.2025	1	1. Bigeye Houndshark	Deep sea net catcher fishing, mechanised boat	Local consumption in Mangalore Dhakke fishing market	3 individuals and 1 juvenile
26.v.2025	2	1. Bigeye Houndshark	Mechanised boat	Local consumption, Rs.130/kg	150+ individuals kept in 2 baskets
		2. Hammerhead Shark (likely Scalloped)	Deep sea net catcher fishing, mechanised boat	Local consumption	1 individual along with juveniles of other species



Tiger Shark. Landed on 08 May 2025 at Dhakke. © Authors.



Graceful Shark or Grey Reef Shark. Landed on 8, 17, 22 May 2025 at Dhakke. © Authors.



Hammerhead Shark (likely Scalloped). Landed on 8, 13, 15, 22, 26 May 2025 at Dhakke. © Authors.



Milk Shark. Landed on 13 & 15 May 2025 at Dhakke. © Authors.



Arabian Bamboo Shark. Landed on 22 May 2025 at Dhakke. © Authors.



Bigeye Houndshark. Landed on 23 and 26 of May 2025 at Dhakke. © Authors.

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