15TH WORKING PARTY ON NERITIC TUNAS (WPNT15)

STATUS OF NERITIC TUNA IN PAKISTAN WITH SPECIAL EMPHASIS ON THE DISTRIBUTION AND ABUNDANCE OF LONGTAIL TUNA (*THUNNUS TONGGOL*) IN THE COASTAL AND OFFSHORE WATERS OF PAKISTAN

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ABSTRACT

Neritic tuna are an important component of the tuna fisheries of Pakistan. Neritic tuna has a share of about 45.94 % in the total tuna landings in 2024. Of the five species of neritic tunas, the longtail tuna (*Thunnus tonggol*) contributes 4,328 m. tons in 2024 and 4,987 m. tons in 2023. Landings of frigate tuna (*Auxis thazard thazard*) during 2024 were recorded to be 7,651 m. tons whereas it was 8,873 m. tons in 2023. Landings of kawakawa (*Euthynnus affinis*) in 2024 was 1,689 m. tons and 1,782 m. tons in 2023. The other two species, i.e., bullet tuna (*Auxis rochei*) and striped bonito (*Sarda orientalis*) contributed insignificantly to the total tuna landings of Pakistan.

Landings of neritic tuna were observed to have decreased in 2024 by 12.62 % as compared to 2023. This decrease in landings can be attributed to many factors, including the early closure of the fishing season in April 2024, and late start in August 2023. This decrease is also on account of lower prices prevailing in Gwadar which was main landing centre in 2024 which compelled fishermen to undertake shorter fishing trips. Overall annual tuna landings (including both tropical and neritic tuna) of Pakistan have shown an increase of 3.62 % during 2024 as compared to year 2023.

The longtail tuna (*Thunnus tonggol*) is the most dominant species of neritic tuna found in Pakistan. Its landings were reported to be 5,918 m. tons in 1987, which steadily increased to the highest level of 21,000 in 2016 and 2017, but a major decrease was observed in 2019 when its landings plunged to a level of 3,342 m. tons. A recovery in the landings of longtail tuna was observed in 2022 when it reached 4,781, but again decreased to 4,328 m. ton in 2024.

INTRODUCTION

Tuna gillnetting is an important fisheries in Pakistan which includes both neritic and tropical tuna species. A major part of the artisanal fleet is engaged in fishing of neritic species. Gillnets consisting of monofilament and multifilament are used for catching neritic tunas. Monofilament net is mainly used for catching frigate (*Auxis thazard*) and bullet tunas (*Auxis rochei*) whereas multifilament nylon nets are used for catching longtail tuna (*Thunnus tonggol*), kawakawa (*Euthynnus affinis*) and striped bonito (*Sarda orientalis*) as well as tropical tunas.

Information about neritic tuna fisheries of Pakistan is known through the work of Ahmed (1989), Imad (1988), Griffiths *et al.*, (2019), Kazmi *et al.*, (2019), Moazzam (2011, 2012a-c, 2014, 2018, 2020b, 2021, 2022), Moazzam and Ayub (2015, 2017), Moazzam *et al.*, (2016, 2019) and Nawaz and Moazzam (2014). These studies were based mainly on the fisheries statistical data being published by Marine Fisheries

Department, Government of Pakistan and also on the information voluntarily provided by the Crew-Based Observers (Moazzam, 2021).

Based on the information generated through WWF-Pakistan's Crew-based Observer Programme, data on tuna and tuna-like species were reconciled with the landings data available with the Marine Fisheries Department, Government of Pakistan. An exercise for reconstruction of landing data for IOTC species from 1987 to 2017 was also carried out. These datasets were provided to IOTC by the Marine Fisheries Department, Government of Pakistan, and a part of it was presented in WPNT07 (Moazzam and Ayub, 2017). The present paper presents information about landings of neritic tuna in 2024, as well as information about the distribution and abundance of longtail tuna in the coastal and offshore waters of Pakistan.

MATERIALS AND METHODS

In 2012, WWF-Pakistan initiated a crew-based observer programme to collect information about catches of tuna and tuna-like species as well as of the bycatch non-target species in the tuna gillnet fisheries of Pakistan (Moazzam and Nawaz, 2017). This programme has continued, with a growing number of participating fishing crews, each year since 2012. Seventy-five (75) observers were engaged in the data collection programme. The programme, although it was completed in September 2019 but still some of the fishermen provide information to WWF-Pakistan voluntarily, which is primarily used for documenting landings of tuna and tuna-like species in Pakistan.

Tuna fishing operations are undertaken throughout the year except during June and July, which is closed season, coinciding with the rough sea conditions of the southwest monsoon. The tuna vessels generally set 6-8 km long gillnets before sunset and retrieve them the next morning after a soak time of about 12 hours. The information about tuna species (including neritic tuna) is recorded on a daily basis on log sheets, especially designed for the Crew Based Observer Programme.

RESULTS

Landings

Neritic tuna species have a share of about 45.94 % in the total landings of tuna in 2024, which is considered to be slightly lower (8.54 %) than the previous year. Of the five species of neritic tunas, the longtail tuna (*Thunnus tonggol*) contributes 4,328 m. tons in 2024 and 4,987 m. tons in 2023 (Table-I). Landings of frigate tuna (*Auxis thazard thazard*) during 2024 were recorded to be 7,651 m. tons whereas it was 8,873 m. tons in 2023. Landings of kawakawa (*Euthynnus affinis*) in 2024 was 1,689 m. tons and 1,782 m. tons in 2023. The other two species, i.e., bullet tuna (*Auxis rochel*) and striped bonito (*Sarda orientalis*) contributed insignificantly to the total tuna landings of Pakistan.

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fishing trips. Overall annual tuna landings (including both tropical and neritic tuna) of Pakistan have shown an increase of 3.62 % during 2024 as compared to year 2023 (Fig.1). Decrease in the landings of neritic tuna in 2024 was noticed because of major decrease in the landings of in cases of longtail and frigate tuna which decreases about 13.22 % and 13.77 % respectively as compared to the landings of 2023 (Fig. 2; Table-I). It may be added that a major decrease in the landings of neritic tunas (as well as tropical tunas) was recorded since 2019 (Moazzam, 2020b, 2022), which showed some sign of recovery in 2022 but again decreased slightly in 2024 (Fig. 1).



Fig. 1. Landings of neritic tuna of Pakistan (1987-2024)

Category Tuna nei mentioned in Table-I includes neritic tuna caught by small-scale vessels along the Balochistan Coast. The landings in this category were recorded to be 7,001 m. tons in 2024 and 4,532 m. tons in 2023. This unprecedented increase of 54.48 % in 2024 was due to induction of fast GRP boats fitted with outboard engines in the small-scale fisheries of Balochistan.. Species breakdown in the Tuna nei category is not recorded, but it consists mainly of neritic tuna, especially kawakawa and frigate tuna.

In case of tropical tuna, the landings of yellowfin and skipjack tunas during 2024 has substantially increased by 5.44 % and 10.52 %, respectively as compared to landings in 2023. Yellowfin tuna (*Thunnus albacares*) contributed 7,321 m. tons and skipjack tuna (*Katsuwonus pelamis*) contributed 1,765 m. tons in 2023.

Catch per Unit Effort

Fig. 3a presents a graph which shows catch per unit effort (CPUE) of neritic tunas (in m. tons/fleet size) in Pakistan between 1987 and 2024 whereas Fig. 3b present CPUE of three dominating neritic tuna species, including longtail, kawakawa and frigate tuna. It can be seen that CPUEs of neritic tuna and neritic tuna species follow the same trend as reported for landings (Figs. 1 and 2), which is mainly because the fleet size

did not fluctuate much. The lowest size of the fleet was 400 in 2002 and 919 in 1992. During the last ten years, the fleet size remained stable (688-723).

Species	2021	2022	2023	2024	% Increase/ Decrease
	Neritic Tuna				
Longtail tuna	3,120	4,981	4,987	4,328	-13.21
Kawakawa	1,210	1,807	1,782	1,689	-5.22
Frigate tuna	6,190	9,108	8,873	7,651	-13.77
Bullet tuna	2	2	2	2	-
Striped Bonito	3	3	3	3	-
Subtotal	10,525	15,901	15,647	13,673	-12.62
	Tropical Tuna				
Yellowfin tuna	5,598	5,511	6,943	7,321	5.44
Skipjack tuna	810	892	1,597	1,765	10.52
Subtotal	6,408	6,403	8,540	9,086	8.04
	TOTAL				
Tunas NEI	5,142	4,983	4,532	7,001	54.48
TOTAL	22,075	27,287	28,719	29,760	3.62

Table-I. Landings of tuna species during 2021 and 2024 in Pakistan





Fig. 3. Catch per Unit Effort from 1987 to 2024 (a) Neritic Tuna; (b) Neritic tuna Species

Distribution and Abundance of Longtail (Thunnus tonggol)

Longtail tuna (*Thunnus tonggol*) is a species of neritic tuna found in the tropical and temperate waters of the Indo-Pacific region, including Pakistan (Fig. 4). It is known for its relatively shallow, coastal habitat, distinguishing it from other *Thunnus* species that typically inhabit the open ocean. It is a relatively small tuna species, reaching a maximum size of 142 cm in length. This species fetches high prices in the local market, comparable to yellowfin and skipjack tunas. In Pakistan, it is caught by tuna fleets that operate in the coastal waters of the continental shelf area. This species is caught throughout the year (excluding the close season of June and July).



Fig. 4. Longtail tuna (Thunnus tonggol)

The data also indicated that April, October and December are the main peak seasons of this species along the Pakistan coast when it CPUE was observed to be higher than 2,500 kg/month (Fig. 5). The highest CPUE was observed in December when CPUE was observed to be 3,140 kg/month. The CPUE in August is the lowest (203 kg/month) because of the usual late start of fishing after a voluntary close period of two months (June and July). February and November are also months during which CPUEs were low (about 400 kg/month).

DISCUSSIONS

During 2024, the landings of neritic tunas were observed to have decreased as compared to 2023; however, an increasing trend was noted during the same period in the case of tropical tuna (Table-I). The decrease in landings of neritic tunas is not

because of status of their stocks or fishing intensity but it is because of issues related to fishing operations. Landings of neritic tuna species have shown maxima from 2016 to 2018, however, an unprecedented decrease in landings was noticed in 2019 which is still continuing (Fig. 1).



Fig. 5. Average Catch per Unit Effort of Longtail Tuna (based on data collected through crew crew-based observer programme)

It may be added that longtail tuna is generally targeted by fishermen engaged in neritic tuna fishing because of its demand in the neighbouring country. Tropical tuna species (yellowfin and skipjack) also fetch high prices in the neighbouring country. Other neritic species, including kawakawa, frigate tuna, bullet tuna, and stripped bonitos, are either consumed locally (mainly by Bangladeshi immigrants) or salted-dried for export to Sri Lanka and Bangladesh.

A major part of the tuna fleet, which is normally based in Karachi (Sindh Province) has shifted to Gwadar (Balochistan Province) because of better prices offered for yellowfin, skipjack, longtail, and kawakawa (large specimens) in Gwadar than in Karachi. Diesel prices are also cheaper in Gwadar than in Karachi due to proximity to Iran.

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