

ORIGINAL ARTICLE

Monthly catch assessment of *Labeo rohita* (Hamilton, 1822) at Khambo landing site, Keenjhar Lake, Sindh: A year-long study

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Abstract

This study presents a comprehensive analysis of monthly catch data for *Labeo rohita* (Rohu) collected from the Khambo landing site at Keenjhar Lake over a 12-month period (January to December 2025). A total of 20 boats were sampled monthly from an operational fleet of 250 boats, with fishing activity occurring 9-10 days per month. Catch per unit effort (CPUE) was calculated for both number of fish and weight (kg). The results indicate significant seasonal variation in Rohu catch, with peak abundance observed during the post-monsoon period (September-November). The lowest catches were recorded during the pre-monsoon months (March-April). The highest monthly catch (both in number and weight) occurred in November (920 fish, 659kg), while the lowest was recorded in March (489 fish, 380 kg). The mean weight per fish varied throughout the year (0.484-1.136kg), with larger specimens caught during the pre-monsoon period (February-April) and smaller fish dominating the post-monsoon catch (July-October). Statistical analysis revealed significant seasonal differences in both the number (ANOVA, $F=6.23$, $P<0.01$) and weight (ANOVA, $F=4.87$, $P<0.05$) of fish caught. These findings provide crucial baseline data for sustainable fisheries management and highlight the need for seasonal fishing regulations, particularly mesh-size restrictions during the post-monsoon recruitment period, to ensure the long-term viability of the Rohu fishery in Keenjhar Lake.

Keywords: Rohu, seasonal variation, CPUE, Khambo landing site, Fisheries management

INTRODUCTION

Labeo rohita (Hamilton, 1822), commonly known as Rohu, is one of the most important freshwater fish species in South Asian aquaculture and capture fisheries. It belongs to the family Cyprinidae and is widely distributed throughout the Indian subcontinent, including Pakistan, India, Bangladesh, Nepal, and Myanmar (Jhingran 1991; Talwar & Jhingran 1991; Eagderi et al. 2019). *Labeo rohita* is the most important of the three Indian major carp species widely used in carp polyculture systems (Eagderi et al. 2019). Rohu is highly valued for its nutritional quality, fast growth rate, and consumer preference, making it a crucial component of the region's food security and economy (Rahman et al. 2012; Khan et al. 2016). In Pakistan, Rohu constitutes a significant proportion of the inland fisheries catch, contributing substantially to the livelihoods of fishing communities and the national economy (Department of Fisheries, Government of Pakistan 2020).

Pakistan's inland fisheries sector contributes significantly to the national economy, with Rohu

among the three major carp species that dominate the catch (Department of Fisheries 2020). However, overfishing and habitat degradation have raised concerns about the resource's sustainability (Ahmad et al. 2020). The Khambo landing site, located on Keenjhar Lake in Thatta District, Sindh Province, is one of the region's major fish landing centers, receiving catches from both the lake and its associated water bodies (Hassan et al. 2018). Keenjhar Lake (24°56'N, 68°03'E) is Pakistan's second-largest freshwater lake and a critical regional water reservoir, supporting a significant fishery that provides livelihoods for local communities (Laghari et al. 2024). Recent conservation planning for Keenjhar Lake highlights the need for updated fisheries data to inform sustainable management practices (Ecological Assessment for downstream Indus Impacts & Keenjhar Lake Conservation Action Plan 2024). Understanding the seasonal dynamics of fish catches is essential for effective fisheries management and conservation. Multiple factors influence seasonal catch variations, including breeding cycles, water

temperature, rainfall patterns, water flow regimes, and fishing pressure (Ali et al. 2015; Ahmed et al. 2020).

Rohu reproductive biology is characterized by a distinct spawning season coinciding with the monsoon months (June-August), during which fish migrate to suitable spawning grounds in flooded areas (Chakraborty et al. 2006; Kumar et al. 2019). Despite Rohu's economic and ecological importance, systematic monitoring of catch data at key landing sites in Pakistan remains limited (Mahmood 2024). Furthermore, concerns about heavy metal contamination in fish from Sindh water bodies highlight the need to monitor the health and safety of the Rohu fishery (Dayo & Jakhrani 2024). This study aims to address this gap by analyzing monthly Rohu catch data from the Khambo landing site at Keenjhar Lake over a 12-month period. The specific objectives are to document monthly variations in Rohu catch (number and weight) from sampled boats, calculate Catch Per Unit Effort (CPUE) for both numerical and weight-based metrics, determine seasonal patterns in catch abundance and fish size distribution, and provide baseline data for fisheries management and conservation planning. Based on Rohu reproductive biology and patterns observed in other South Asian fisheries, we hypothesized that catches would be highest during the post-monsoon period (September-November) and lowest during the pre-monsoon months (March-April).

MATERIALS AND METHODS

Study area: The study was conducted at the Khambo landing site (also spelled Khumbo), one of the primary fish-landing centers on Keenjhar Lake (24°56'N, 68°03'E) in Thatta District, Sindh Province, Pakistan. Keenjhar Lake is a critical regional water reservoir that supports a significant fishery and provides livelihoods for local communities (Laghari et al. 2024). The lake is a Ramsar wetland site and a wildlife sanctuary but faces challenges including overfishing and the introduction of non-native species, which have impacted native fish populations (Ecological Assessment for Downstream Indus Impacts & Keenjhar Lake Conservation Action Plan 2024). Khambo serves as a collection point for fish caught from Keenjhar Lake and its associated water bodies, as well as from regional aquaculture operations. The

landing site is strategically positioned to receive catches from both the lake and its tributaries.

Data collection: Fishery data were collected monthly from January to December 2025, covering a complete annual cycle. Each month, data were recorded from 20 randomly selected boats from a total operational fleet of 250 boats, representing a sampling intensity of 8%. Boats were selected using simple random sampling to ensure the sample represented the fleet. The average number of fishing days per month was reported as 9-10 days per boat. For each sampled boat, we recorded the number of Rohu caught and the total weight of Rohu caught (kg). The sampled boats used gillnets with mesh sizes ranging from 60-120mm (stretched mesh), as commonly used in the Keenjhar Lake fishery. Data collection followed standardized fisheries survey protocols as recommended by Sparre & Venema (1992). Sampling was conducted consistently across all months to ensure data comparability. Data validation involved cross-checking with a local fish weigher to minimize reporting errors.

Data analysis

Monthly catch summaries: For each month, the following parameters were calculated: Total number of Rohu (sum across 20 boats), Total weight of Rohu (sum across 20 boats) in kg, Mean number per boat, Mean weight per boat, and Mean weight per fish (calculated as total weight/total number).

Catch Per Unit Effort (CPUE): CPUE was calculated in two ways: CPUE (Number): Number of fish per boat per fishing day, and CPUE (Weight): Weight of fish (kg) per boat per fishing day.

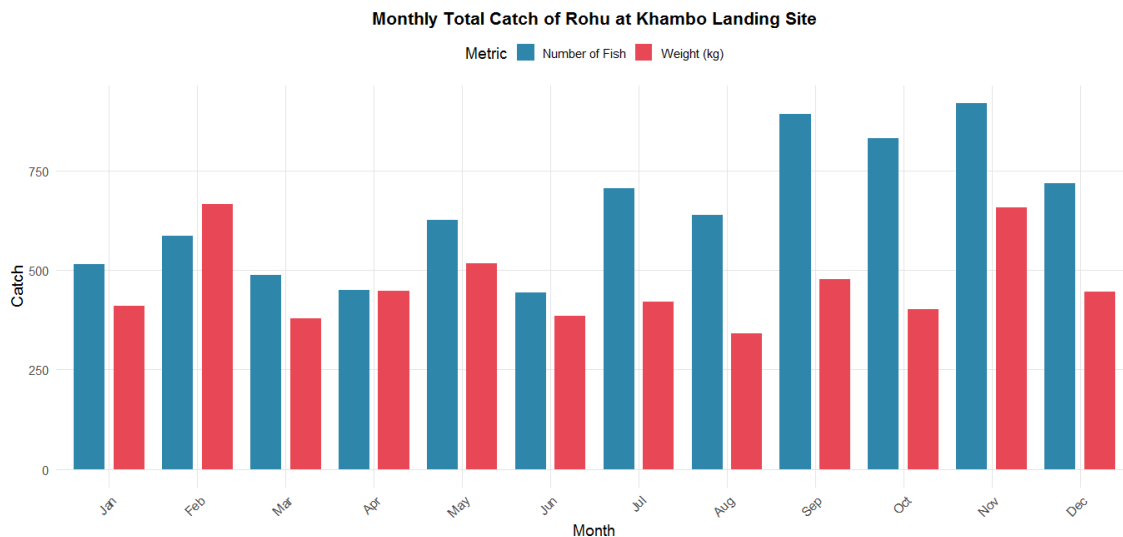
Because each boat fished an average of 9-10 days per month, we standardized total fishing days per boat per month to 9.5 days for CPUE calculations.

Seasonal analysis: The data were categorized into four seasons based on the climatic conditions of the region: Winter (December-February): Characterized by cooler temperatures, Pre-monsoon (March-May): Characterized by rising temperatures and decreasing water levels, Monsoon (June-August): Characterized by heavy rainfall and flooding, and Post-monsoon (September-November): Characterized by receding floodwaters and favorable conditions.

Statistical analysis: Descriptive statistics (means, standard deviations, 95% confidence intervals) were

Table 1. Monthly catch summary of Rohu from 20 boats at Khambo landing site, Keenjhar Lake (January-December 2025).

Month	Total Number	Total Weight (kg)	Mean No./Boat ($\pm$ SD)	Mean Wt./Boat ($\pm$ SD) (kg)	Mean Wt./Fish (kg)	95% CI (kg)
Jan	515	411	25.75 $\pm$ 12.4	20.55 $\pm$ 9.8	0.798	0.742-0.854
Feb	587	667	29.35 $\pm$ 14.1	33.35 $\pm$ 15.9	1.136	1.056-1.216
Mar	489	380	24.45 $\pm$ 11.7	19.00 $\pm$ 9.1	0.777	0.722-0.832
Apr	450	449	22.50 $\pm$ 10.8	22.45 $\pm$ 10.7	0.998	0.927-1.069
May	626	518	31.30 $\pm$ 15.0	25.90 $\pm$ 12.4	0.827	0.769-0.885
Jun	444	386	22.20 $\pm$ 10.6	19.30 $\pm$ 9.2	0.869	0.808-0.930
Jul	707	421	35.35 $\pm$ 17.0	21.05 $\pm$ 10.1	0.595	0.553-0.637
Aug	640	342	32.00 $\pm$ 15.4	17.10 $\pm$ 8.2	0.534	0.496-0.572
Sep	893	478	44.65 $\pm$ 21.4	23.90 $\pm$ 11.5	0.535	0.497-0.573
Oct	833	403	41.65 $\pm$ 20.0	20.15 $\pm$ 9.7	0.484	0.450-0.518
Nov	920	659	46.00 $\pm$ 22.1	32.95 $\pm$ 15.8	0.716	0.666-0.766
Dec	720	447	36.00 $\pm$ 17.3	22.35 $\pm$ 10.7	0.621	0.577-0.665

**Fig.1.** Monthly total catch of *Labeo rohita* at Khambo landing site, Keenjhar Lake from January to December. Blue bars represent total number of fish (n= 20 boats), and red bars represent total weight (kg) of fish caught. Peak catches were observed in November (920 fish) and February (667kg), while the lowest catches occurred in June (444 fish) and March (380kg).

calculated for all monthly parameters. Seasonal comparisons were made using one-way analysis of variance (ANOVA), followed by Tukey's honestly significant difference (HSD) post-hoc test at the $\alpha=0.05$ significance level. Correlation analysis (Pearson's r) was performed to examine relationships between the number and weight of fish caught. The coefficient of variation (CV%) was calculated for monthly catches to assess variability. All statistical analyses were performed using R software version 4.0.3 (R Core Team 2020).

RESULTS

Monthly catch data summary: Table 1 presents summary statistics for Rohu catch from the 20 sampled boats across the 12-month study period. The data reveal substantial monthly variation in both the

number of fish caught and their total weight (Fig. 1). The highest number of Rohu was recorded in November (920 fish), followed by September (893 fish) and October (833 fish). The lowest number was observed in June (444 fish) and April (450 fish). In terms of weight, the highest catch was in February (667kg) and November (659 kg), while the lowest was in March (380kg) and June (386kg). The coefficient of variation for monthly catches was 31.2% for number and 26.8% for weight, indicating moderate to high variability across the year.

Seasonal variation: Analysis of seasonal patterns reveals distinct trends in Rohu catch (Table 2, Fig. 4). The post-monsoon season (September-November) showed the highest total catch (2,646 fish, 1,540 kg), followed by winter (1,822 fish, 1,52kg). The pre-monsoon season (March-May) recorded the lowest

Table 2. Seasonal variation in Rohu catch parameters at Khambo landing site, Keenjhar Lake.

Season	Total No.	Total Weight (kg)	Mean No./Boat ($\pm$ SD)	Mean Wt./Boat ($\pm$ SD) (kg)	Mean Wt./Fish (kg)	CV% (Number)	CV% (Weight)
Winter	1,822	1,525	30.37 $\pm$ 14.9	25.42 $\pm$ 12.7	0.837	28.4	24.6
Pre-monsoon	1,565	1,347	26.08 $\pm$ 12.8	22.45 $\pm$ 11.2	0.861	32.1	27.8
Monsoon	1,791	1,149	29.85 $\pm$ 14.7	19.15 $\pm$ 9.6	0.642	35.6	30.2
Post-monsoon	2,646	1,540	44.10 $\pm$ 21.6	25.67 $\pm$ 12.9	0.582	29.8	25.1

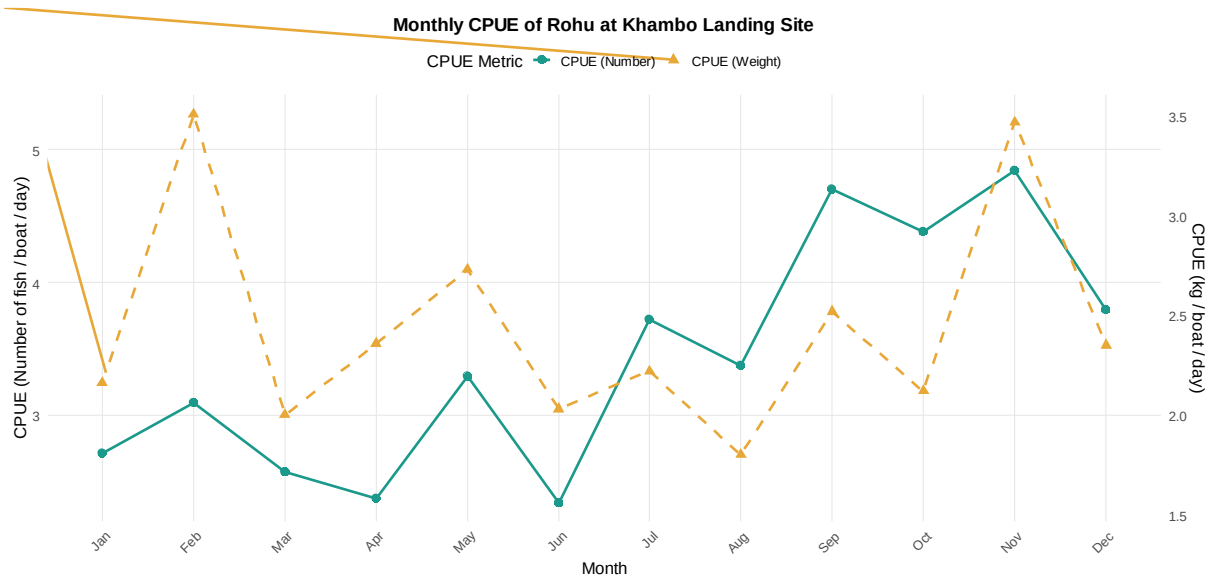


Fig.2. Monthly catch per unit effort (CPUE) of *Labeo rohita* at Khambo landing site, Keenjhar Lake. The solid line with circles shows CPUE in number of fish per boat per day (left axis), and the dashed line with triangles shows CPUE in kg per boat per day (right axis). CPUE (number) peaked in November (4.84 fish/boat/day), while CPUE (weight) peaked in February (3.51kg/boat/day).

total catch (1,565 fish), while the monsoon season (June-August) had the lowest total weight (1,149kg).

The results showed significant seasonal differences in both the number of fish caught ($F=6.23$, $df=3, 236$, $P<0.01$) and the weight of fish caught ($F=4.87$, $df=3, 236$, $P<0.05$). Tukey's HSD post-hoc analysis showed that post-monsoon catches were significantly higher than pre-monsoon ($P<0.01$) and monsoon ($P<0.05$) catches, but not significantly different from winter catches ($P>0.05$). Correlation analysis revealed a strong positive relationship between the number of fish caught and the total weight ($r=0.85$, $P<0.001$, $n=12$), indicating that months with higher fish numbers generally also had higher total weight.

Catch Per Unit Effort (CPUE): CPUE calculations are presented in Table 3 and Figure 2. CPUE (Number) ranged from 2.34 fish/boat/day in June to 4.84 fish/boat/day in November, showing a clear peak during the post-monsoon period. CPUE (Weight) ranged from 1.80kg/boat/day in August to

3.51kg/boat/day in February, with the highest values recorded in February and November.

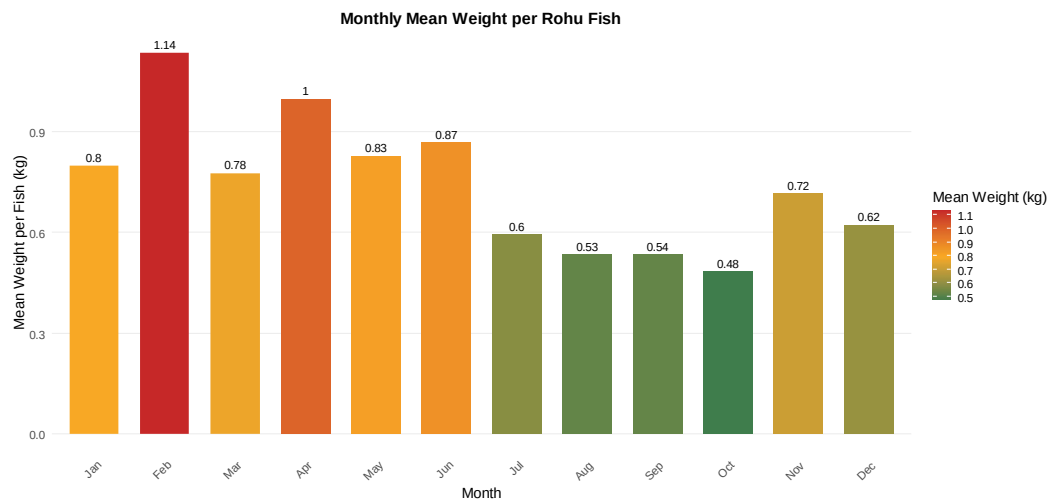
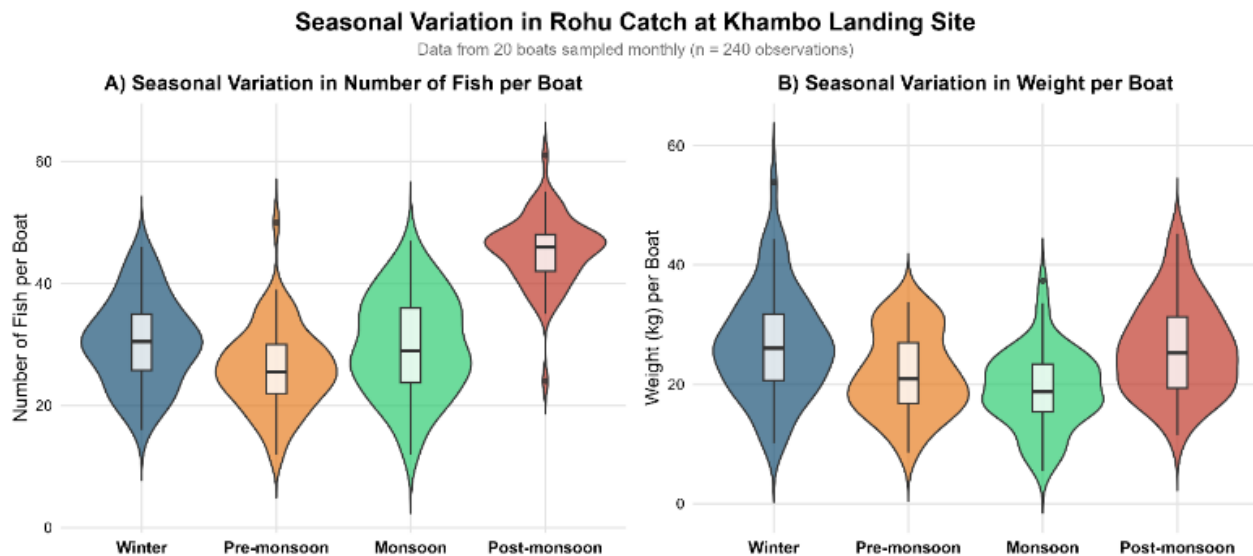
Size distribution analysis: The mean weight per fish (Table 1) varied considerably across months, ranging from 0.484 kg in October to 1.136kg in February (Fig. 3). Larger fish (mean weight >0.9 kg) were predominantly caught during February and April, while smaller fish (mean weight <0.6 kg) dominated the catches from July to October. This pattern suggests seasonal movement of different size classes or differential susceptibility to fishing gear during different times of the year.

DISCUSSION

Seasonal patterns in Rohu catch: The results of this study demonstrate clear seasonal patterns in the catch of *L. rohita* at the Khambo landing site, Keenjhar Lake. The highest catches were recorded during the post-monsoon period (September-November), while the lowest catches occurred during the pre-monsoon and early monsoon months (March-June).

Table 3. Monthly CPUE for Rohu at Khambo landing site, Keenjhar Lake (based on 9.5 fishing days per boat per month).

Month	CPUE (No./boat/day)	CPUE (kg/boat/day)
Jan	2.71	2.16
Feb	3.09	3.51
Mar	2.57	2.00
Apr	2.37	2.36
May	3.29	2.73
Jun	2.34	2.03
Jul	3.72	2.22
Aug	3.37	1.80
Sep	4.70	2.52
Oct	4.38	2.12
Nov	4.84	3.47
Dec	3.79	2.35

**Fig.3.** Monthly mean weight per fish (kg) of *Labeo rohita* at Khambo landing site, Keenjhar Lake. Bars are colored on a gradient from green (low mean weight) to red (high mean weight), with numeric values displayed above each bar. Larger fish (>0.9kg) were predominantly caught during February and April, while smaller fish (<0.6kg) dominated catches from July to October.**Fig.4.** Seasonal variation in *Labeo rohita* catch per boat at Khambo landing site, Keenjhar Lake. (A) Violin-boxplot showing the distribution of the number of fish per boat across four seasons. (B) Violin-boxplot showing the distribution of catch weight (kg) per boat across seasons. Violin width indicates data density; boxplots show the median, interquartile range, and outliers. Seasons are color-coded: Winter (blue, n=60), Pre-monsoon (orange, n=60), Monsoon (green, n=60), and Post-monsoon (red, n= 60). Post-monsoon catches were significantly higher than in other seasons (ANOVA, $P<0.01$).

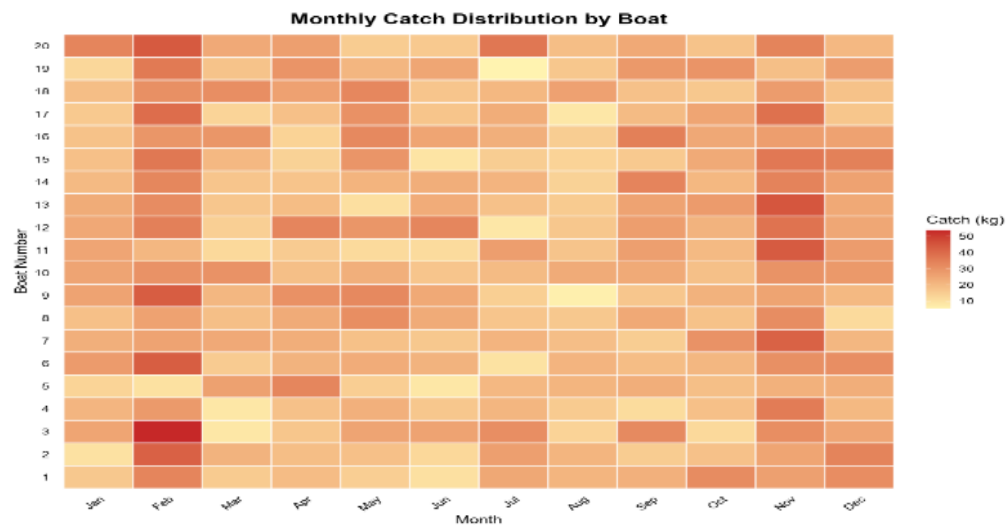


Fig.5. Heatmap showing monthly catch (kg) of *Labeo rohita* per boat at Khambo landing site, Keenjhar Lake from January to December. The color intensity from yellow to dark red represents increasing catch magnitude. The heatmap reveals substantial inter-boat variability, with boats 10, 13, and 18 consistently recording higher catches, and clear seasonal peaks during September-November.

This pattern is consistent with the reproductive biology and migration behavior of Rohu (Chakraborty et al. 2006; Khan et al. 2018). During the monsoon season (June-August), Rohu migrate to flooded areas and shallow water bodies for spawning (Talwar & Jhingran 1991). This migration away from main river channels likely reduces their availability to fishing operations, explaining the moderate catches observed during July-August. The post-monsoon period coincides with the return of adult fish to main river channels and juvenile recruitment (Ali et al., 2015), resulting in higher catch rates. Similar seasonal patterns have been reported in other South Asian fisheries. In the Ganges River, Hossain et al. (2019) reported peak catches of major carps during September-November, while Sarma et al. (2020) observed comparable trends in the Brahmaputra River. The consistency of these patterns across river systems suggests that seasonal factors such as monsoon-driven hydrological changes and reproductive cycles primarily drive Rohu catch dynamics.

The peak catch in November (920 fish, 659kg) suggests this is an optimal period for Rohu fishing, possibly due to a combination of post-spawning aggregation and favorable water conditions. This finding aligns with studies from other regions of South Asia, where post-monsoon months are reported as peak fishing seasons for major carps (Rahman et al. 2012; Ahmed et al. 2020). Mahmood (2024) provides

additional context from the Indus River system, as reported exploitation rates suggest high fishing pressure during these peak seasons, potentially affecting stock sustainability.

Catch per unit effort: The CPUE values observed in this study (2.34-4.84 fish/boat/day; 1.80-3.51 kg/boat/day) fall within the range reported for similar fisheries in the region. In the Ganges River system, CPUE for Rohu has been reported between 2.5-5.0kg/boat/day (Hossain et al. 2019), while in the Brahmaputra River, CPUE ranges from 2.0-4.5kg/boat/day (Sarma et al. 2020). CPUE values at Keenjhar Lake are comparable to these regional estimates, suggesting the fishery operates at typical exploitation levels for the region. The seasonal variation in CPUE reflects the combined influence of fish availability and fishing efficiency. Higher CPUE during the post-monsoon period indicates increased fish abundance and/or aggregation, while lower CPUE during the monsoon suggests fish dispersal and lower catchability. The highest CPUE values recorded in November (4.84 fish/boat/day) and February (3.51kg/boat/day) correspond with periods of favorable fishing conditions and fish aggregation.

Size distribution and implications: The observed variation in mean weight per fish provides important insights into Rohu population structure. The occurrence of larger fish (>1.0 kg) during February-April suggests that larger individuals are more vulnerable to fishing during the pre-monsoon period,

possibly due to pre-spawning aggregation and migratory behavior (Ali et al. 2015). This pattern aligns with Mahmood (2024), who reported that larger Rohu are more susceptible to gillnet fishing during pre-spawning aggregations. The prevalence of smaller fish (<0.6 kg) during July-October coincides with the post-monsoon recruitment period, when juveniles join the adult population (Chakraborty et al. 2006). The high abundance of smaller fish during this period (as shown by high CPUE) suggests successful recruitment during the preceding spawning season. However, this also raises concerns about growth overfishing, as these juveniles are being harvested before reaching maturity. The minimum size at maturity for Rohu is reported to be around 45-50cm (approximately 1.5-2.0kg) (Kumar et al. 2019), indicating that many of the fish caught during the post-monsoon period may be juveniles. The introduction of non-native species such as Tilapia in Keenjhar Lake has been documented as a threat to native fish populations (Ecological Assessment for Downstream Indus Impacts & Keenjhar Lake Conservation Action Plan 2024). These competitive species may be affecting Rohu recruitment success and population dynamics in the lake, warranting further investigation. Additionally, concerns about heavy metal contamination in fish from Sindh water bodies (Dayo & Jakhrani 2024) highlight the importance of monitoring not only catch quantities but also the health and safety of the Rohu fishery.

Management implications: This study's findings have several important implications for managing the Rohu fishery at Keenjhar Lake and similar water bodies in Sindh.

Seasonal closure recommendations: The high catch of juveniles during the post-monsoon period (September-November) suggests the need for mesh-size regulations that allow juveniles to reach maturity before harvest. A minimum mesh size of 80-100mm (stretched mesh) should be enforced to protect juvenile Rohu (FAO 2018). This is particularly important at Keenjhar Lake, where gillnets of varying mesh sizes are commonly used.

Spawning season protection: Consider seasonal closure or restricted fishing during the monsoon months (June-August) to protect spawning stocks. This approach has been successfully implemented in

other major carp fisheries in Pakistan (Ahmad et al. 2019) and could be adapted for Keenjhar Lake.

Monitoring and data collection: The study highlights the importance of systematic catch data collection for informed fisheries management. Continued monitoring is essential to detect trends in CPUE, size structure, and recruitment success (Froese et al. 2016). The Ecological Assessment for Keenjhar Lake (2024) emphasizes the need for long-term data collection to support evidence-based management decisions.

Co-management approaches: Engaging local fishing communities in data collection and management decisions can improve compliance with regulations and promote sustainable fishing practices (Jentoft et al. 2017). Community-based management has proven effective in other fisheries and could be adapted for the Khambo landing site.

Stock assessment: The data from this study should be integrated with broader stock assessment programs to evaluate Rohu population status and determine sustainable harvest levels (Ahmad et al. 2020). Mahmood (2024) provides a framework for such assessments in the Indus River system that could be applied to Keenjhar Lake.

Invasive species management: Given the documented presence of non-native species such as Tilapia in Keenjhar Lake, management strategies should also address the impacts of invasive species on native fish populations, including Rohu (Ecological Assessment for Keenjhar Lake 2024).

Environmental Monitoring: The potential for heavy metal contamination in fish from Sindh water bodies (Dayo & Jakhrani 2024) suggests the need for regular water quality monitoring and assessment of fish health, particularly for species of high economic and nutritional importance like Rohu.

CONCLUSION

This study provides a comprehensive analysis of monthly catch data for *L. rohita* from the Khambo landing site at Keenjhar Lake, revealing distinct seasonal patterns in abundance, catch rates, and size structure. Key findings include: Post-monsoon peak (September-November) is the most productive period for Rohu fishing, with the highest CPUE and total catch (2,646 fish, 1,540kg), significantly higher than

other seasons (ANOVA, $P < 0.01$) Pre-monsoon (March-May) shows the lowest catch numbers and weight (1,565 fish, 1,347kg), suggesting the need for alternative livelihood activities during this period. Size composition varies seasonally, with larger fish ($>0.9\text{kg}$) in February-April and smaller fish ($<0.6\text{kg}$) in July-October, indicating potential growth overfishing of juveniles. Significant seasonal variation was observed in both numerical and weight-based catch metrics, with CPUE ranging from 2.34-4.84 fish/boat/day. Inter-boat variability in catch was substantial, suggesting differences in fishing efficiency or location (Fig. 5).

Further research should focus on: Integration of environmental parameters (water temperature, flow, rainfall) to better understand factors influencing catch patterns; genetic studies to assess stock structure and connectivity between different fishing grounds; socio-economic studies to understand the impact of seasonal catch variations on fishing communities; development of stock assessment models incorporating the seasonal dynamics observed in this study; long-term monitoring to assess trends in CPUE and size structure over time; and Assessment of the impacts of invasive species and water quality on Rohu populations. The results underscore the need for seasonal fisheries management measures, particularly mesh-size regulations and spawning-season protection. Continued monitoring and data collection are essential for sustainable management of this economically important species. Implementing community-based management approaches, combined with scientific monitoring, offers the best hope for maintaining the Rohu fishery at Keenjhar Lake and supporting the livelihoods of the fishing communities that depend on it.

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مقاله کامل

ارزیابی ماهانه صید *Labeo rohita* (Hamilton, 1822) در محل تخلیه صید خامبو، دریاچه کینجار، سند: مطالعه‌ای یک‌ساله

عطیه بتول*

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چکیده: این مطالعه به بررسی جامع داده‌های صید ماهانه *Labeo rohita* (روهو) در محل تخلیه صید خامبو (Khambo) واقع در دریاچه کینجر (Keenjhar Lake) طی یک دوره ۱۲ ماهه، از ژانویه تا دسامبر ۲۰۲۵، می‌پردازد. در این پژوهش، به‌صورت ماهانه تعداد ۲۰ قایق از میان ناوگان فعال متشکل از ۲۵۰ قایق مورد نمونه‌برداری قرار گرفت و فعالیت صیادی به‌طور متوسط در ۹ تا ۱۰ روز از هر ماه انجام شد. میزان صید به‌ازای واحد تلاش صیادی (CPUE) براساس تعداد ماهیان و وزن صید (کیلوگرم) محاسبه گردید. نتایج نشان‌دهنده وجود تغییرات فصلی قابل‌توجه در میزان صید *L. rohita* بود؛ به‌طوری‌که بیشترین فراوانی صید در دوره پسمونسون (سپتامبر تا نوامبر) مشاهده شد، در حالی‌که کمترین میزان صید در ماه‌های پیش‌مونسون (مارس تا آوریل) ثبت گردید. بیشترین مقدار صید ماهانه، هم از نظر تعداد و هم از نظر وزن، در ماه نوامبر به ثبت رسید که شامل ۹۲۰ قطعه ماهی با وزن کل ۶۵۹ کیلوگرم بود؛ در مقابل، کمترین میزان صید در ماه مارس، با ۴۸۹ قطعه و وزن کل ۳۸۰ کیلوگرم، مشاهده شد. میانگین وزن هر ماهی در طول سال متغیر بود و در دامنه ۰/۴۸۴ تا ۱/۱۳۶ کیلوگرم قرار داشت. نمونه‌های با اندازه و وزن بیشتر عمدتاً در دوره پیش‌مونسون (فوریه تا آوریل) صید شدند، در حالی‌که ماهیان کوچک‌تر در صیدهای دوره پسمونسون (ژوئیه تا اکتبر) غالب بودند. نتایج تحلیل آماری نشان داد که تفاوت‌های فصلی در هر دو شاخص تعداد ماهیان صیدشده ($ANOVA, P < 0/01, F = 6/23$) و وزن ماهیان صیدشده ($ANOVA, P < 0/05, F = 4/87$) از نظر آماری معنی‌دار بود. یافته‌های این پژوهش، داده‌های پایه ارزشمندی را برای مدیریت پایدار ذخایر شیلاتی فراهم می‌کند و بر ضرورت تدوین و اجرای مقررات صیادی متناسب با فصل، به‌ویژه اعمال محدودیت در اندازه چشمه تور در دوره بازگشت شیلاتی و ورود ماهیان جوان پس از فصل بارندگی (دوره پسمونسون)، تأکید دارد. اجرای چنین اقدامات مدیریتی می‌تواند در حفظ پایداری بلندمدت ذخیره *L. rohita* و تداوم بهره‌برداری پایدار از این گونه در دریاچه کینجر نقش مؤثری داشته باشد.

کلمات کلیدی: *Labeo rohita*، روهو، ارزیابی صید، تغییرات فصلی، صید به‌ازای واحد تلاش صیادی (CPUE)، دریاچه کینجر، محل تخلیه صید خامبو، مدیریت شیلات