

FISH DIVERSITY, COMPOSITION, CONSERVATION STATUS, AND MARKET DYNAMICS IN CEBU CITY PUBLIC MARKETS DURING THE HOT-DRY SEASON

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Abstract. This study provides a comprehensive inventory of the status of Philippine fishes in the markets of Cebu City, Philippines, during the hot-dry season, focusing on species composition, habitat association, conservation status, price, and volume. Surveys were conducted in public markets in March and April 2018, including Banawa, Ramos, Lahug, Carbon, and Punta Princesa. One hundred nine species belonging to 35 families were recorded across the three survey periods. Seventy-nine percent were reef-associated, 10% were pelagic-neritic, 4% were pelagic-oceanic, 4% were demersal, and 3% were benthopelagic. There was a significant difference in fish prices across habitat associations (One-Way ANOVA: $F(4, 211) = 10.7$, $p < 0.0001$). Reef-associated fishes were the most expensive at 3.95 ± 1.5 USD kg^{-1} (mean \pm sd). Labridae, Serranidae, and Lutjanidae were consistently the highest-valued fish families. Moreover, families Scombridae, Carangidae, and Chanidae collectively accounted for 67.7% of the total weight of fish sold in the five markets over the three survey periods. Species such as the endangered *Cheilinus undulatus*, the vulnerable *Epinephelus fuscoguttatus*, and the near-threatened *Sardinella lemuru*, *Choerodon schoenleinii*, *Scarus hypselopterus*, and *Scomberomorus commerson*, were observed in the markets, highlighting potential threats to their populations.

Keywords: *fisheries management, market trends, reef fish, Philippine oceans, sustainable seafood*

Introduction

The Philippines is considered a global biodiversity hotspot for marine fishes (Bemis et al., 2023). It is situated within the Coral Triangle, a region renowned for its exceptional marine species richness (Al-Asif et al., 2022; Mustafa and Saad, 2022; Goulding and Dayrat, 2023). With over 2500 recorded marine fish species (Froese and Pauly, 2024), the country's extensive coastal and marine resources support a thriving fisheries industry that plays a crucial role in food security, livelihoods, and economic development. As one of the Philippines' major urban and financial hubs (Manila Bulletin, 2025), Cebu City hosts several public markets serving as critical seafood distribution points. These markets provide insights into fish species availability, demand, and economic value, making them essential indicators of fisheries trends and sustainability.

Despite the Philippines' rich marine biodiversity, its fisheries are increasingly threatened by overfishing and habitat degradation (Andriess et al., 2022; Tahiluddin and Sarri, 2022). Comprehensive data on the diversity, habitat associations, and conservation status of fish species sold in urban markets—such as those in Cebu City—remain scarce. While recent studies have documented fish diversity in smaller local hubs like Dumaguete (Padin et al., 2013), Sorsogon (Malto and Dumilag, 2022), and Tawi-Tawi (Muallil et al., 2020), major urban centers, where trade pressures and consumer demand are significantly

higher, remain largely unexamined. Addressing this knowledge gap is essential for developing science-based fisheries management strategies and ensuring the long-term sustainability of the country's marine resources.

This study was conducted during the hot-dry season (March–April), when weather conditions are relatively stable, allowing for uninterrupted fishing activities and consistent market supply. Conducting the survey at this time provides a clearer picture of typical fish availability without the disruptions caused by storms in other parts of the year. Additionally, seasonal fluctuations in fish availability and prices can impact both fisher incomes and seafood accessibility, making it important to document market trends during this period of peak fishing effort and trade activity (Padios et al., 2018; Macale et al., 2020).

Against this background, the present study endeavors to establish a foundational inventory of the diversity, conservation status, and market dynamics of fish sold in public markets in Cebu City, Philippines, during the hot-dry season. Specifically, it seeks to (1) document the species composition of fish sold in selected public markets; (2) assess the conservation status of fish species observed in the markets; (3) analyze the habitat associations of recorded fish species; (4) evaluate price variations among different habitat-associated fish groups; (5) determine the volume and market dominance of key fish families; and (6) identify the primary sourcing locations of fish sold in Cebu City markets.

This study provides crucial data for fisheries management, conservation, and sustainable seafood trade. Documenting fish diversity and market dynamics helps identify at-risk species, guide regulatory measures, and assess economic drivers of overfishing. The findings also support sustainable policies, fisherfolk livelihoods, and responsible seafood consumption, contributing to the long-term viability of marine resources.

Materials and methods

Study site

The study was conducted in Cebu City, Philippines, focusing on five public markets: Banawa, Lahug, Carbon, Ramos, and Punta Princesa (*Fig. 1*). Cebu City, the capital of Cebu province, is located in Central Visayas at approximately 10°19'0.2" N latitude and 123°53'26.6" E longitude. The Philippines is an archipelago divided into three main island groups: Luzon in the north, Visayas in the center, and Mindanao in the south. As one of the largest cities in the Visayas, Cebu City is a major commercial and trade hub, with a population of approximately 964,169 as of 2020 (Philippine Statistics Authority, 2020). Its central location within the archipelago facilitates economic connections across the country. Geographically, it is bordered by the Visayan Sea to the north, the Camotes Sea to the east, Tañon Strait to the west, and the Bohol Strait to the southeast (*Fig. 1*).

The survey sites were selected to capture a representative snapshot of fish markets in Cebu City, covering both major city markets and smaller barangay markets. Major markets such as Carbon and Ramos, which handle high volumes of seafood trade, were surveyed alongside smaller barangay markets like Banawa, Punta Princesa, and Lahug Public Market to ensure a diverse dataset. A typical fish stall in Cebu City, as shown in *Figure 2*, consists of fresh fish displayed on ceramic-tiled tables, often arranged in neat rows for easy selection. These markets, located in central areas or along main roads, are highly accessible to vendors and consumers. In addition to fish, other seafood such as

crustaceans and mollusks are commonly sold, making these markets vital hubs for daily seafood trade.



Figure 1. Geographical location of the province of Cebu with Cebu City highlighted (top left) and the positions of the study sites - Banawa, Ramos, Lahug, Carbon, and Punta Princesa Public Markets, adapted from Google Maps with modifications



Figure 2. A typical fish stall in a Cebu City market, surveyed in March-April 2018. Photo by Maria Raisee Ador

Data collection

Communication letters were dispatched to the local government units to apprise them of the research endeavor. Before the commencement of the study, the researchers conducted a preliminary survey to observe the fish species available for sale. The surveys were conducted over three visits during the hot-dry season, specifically in the 4th and 5th weeks of March and the 1st week of April 2018, between 0500H and 0800H. This timeframe was chosen as it aligns with peak market hours when fresh fish are delivered and sold, ensuring a more accurate representation of species availability and market dynamics. All fish market stall vendors were interviewed during each visit, and a structured questionnaire was administered. Recorded data comprised the following:

- Stall number
- Local names of each fish variety sold
- Price per kilogram of each fish variety
- Weight of each fish variety available for sale that day
- Landing source of the fish

Fish identification

Each fish variety showcased in the market stalls was meticulously photographed with a 12-inch ruler adjacent to provide a scale for precise identification. Taxonomic classification was pursued to the lowest possible level. To ensure accuracy, a variety of authoritative sources were consulted for species identification (Randall et al., 1998; Lieske and Myers, 2001; Allen and Adrim, 2003; Froese and Pauly, 2024).

Data analysis

Species composition was determined by tallying the total species recorded across three survey periods alongside their respective families. Habitat association was discerned by categorizing species into reef-associated, pelagic-neritic, pelagic-oceanic, demersal, and benthopelagic groups, leveraging the FishBase online resource (Froese and Pauly, 2024). The conservation status of fish species was evaluated using the International Union for Conservation of Nature (IUCN) Red List classifications (IUCN, 2024).

All statistical analyses and data visualizations were performed using the R statistical computing environment (R version 4.3.0; R Core Team, 2023). To compare the mean price per kilogram and mean volume between families and habitat associations, we employed one-way ANOVA followed by a post hoc Tukey test. Additionally, we used Pearson's correlation to ascertain if there was a significant correlation between the volume of fish and the price at which they were sold.

Results and discussion

Composition of fish sold in Cebu City markets

This study recorded 109 fish species from 35 families in Cebu City's public markets during the hot-dry season of 2018 (See supplementary material for the complete list of species). The most speciose families were Carangidae (14 species), Scombridae (11), Scaridae (11), Serranidae (9), and Lutjanidae (8). Twenty-one families were consistently observed across sites and survey dates, including Belonidae, Carangidae, Chanidae, Cichlidae, Clupeidae, Dasyatidae, Engraulidae, Gerreidae, Istiophoridae, Labridae,

Lethrinidae, Lutjanidae, Menidae, Mullidae, Muraenidae, Priacanthidae, Scaridae, Scombridae, Serranidae, Siganidae, and Trichiuridae.

Market surveys in other regions of the Philippines provide useful comparisons. In Dumaguete (Visayas), a market study from November 2010 to January 2011 (Padin et al., 2013) recorded 18 species of Scaridae, 16 Serranidae, and 13 Acanthuridae, indicating higher reef-associated species richness than was observed in Cebu City in this study. Conversely, the present study recorded more Scombridae species, suggesting differences in fisheries dependence or seasonal availability. In Sorsogon (Luzon), a study from October 2021 to September 2022 (Malto and Dumilag, 2022) found Carangidae (10 species) and Scombridae (7) to have higher richness, similar to the present study, though with fewer reef-associated species. This may reflect differences in habitat structure or trade patterns. Tawi-Tawi (Mindanao), surveyed from 2015 to 2018 (Muallil et al., 2020), documented significantly higher species richness in reef-associated families, particularly Epinephelinae (48 species) and Lutjanidae (40), likely due to its extensive coral reef ecosystems and a longer study period (Muallil et al., 2020).

While methodological differences, survey years, and durations limit direct comparisons, these studies provide context for Cebu City's market fish composition within regional fisheries trends, highlighting a mix of pelagic and reef-associated species, possibly influenced by local environmental and market factors.

IUCN Conservation status of fish species in Cebu City markets

Among fish species recorded in Cebu City's public markets, the Humphead wrasse (*Cheilinus undulatus*) is classified as endangered on the IUCN Red List, while the Brown-marbled grouper (*Epinephelus fuscoguttatus*) is listed as vulnerable. Four species are classified as near-threatened, including the Bali sardinella (*Sardinella lemuru*), Blackspot tuskfish (*Choerodon schoenleinii*), Yellow-tail parrotfish (*Scarus hypselopterus*), and Narrow-barred Spanish mackerel (*Scomberomorus commerson*). A complete list of recorded species, with endangered, vulnerable, and near-threatened species highlighted, is provided in the Supplementary Material.

In the Philippines, the Wildlife Resources Conservation and Protection Act (Republic Act No. 9147) prohibits the capture and trade of endangered and critically endangered species without special permits, while the Fisheries Administrative Order (FAO) No. 208 regulates explicitly the trade and export of endangered species such as the Humphead wrasse to support population sustainability. Despite these regulatory measures, the presence of these species in public markets suggests limitations in enforcement and monitoring mechanisms.

These species play vital ecological roles, with parrotfish contributing to coral reef resilience by controlling algal growth (Comeros-Raynal et al., 2012; Putra et al., 2020), groupers functioning as top predators that regulate prey populations and maintain ecosystem stability (Harmelin-Vivien and Harmelin, 2022), and mackerel and tuskfish serving as intermediate consumers within marine food webs (Fukuoka and Yamada, 2015; KM et al., 2017). The depletion of these species could lead to significant ecological disruptions, including unchecked algal proliferation, destabilized trophic interactions, and declines in fish stocks that may adversely affect fisheries and livelihoods.

Habitat associations of recorded fish species

Among the diverse array of fish species documented in the markets of Banawa, Ramos, Lahug, Carbon, and Punta Princesa, a significant proportion-79%-were classified as reef-

associated, indicating their close association with coral reef ecosystems where they live and feed. Another 10% of the species were categorized as pelagic-neritic, denoting their habitat preference for coastal waters overlying continental shelves. A smaller percentage, comprising 4% of the total, consisted of pelagic-oceanic species inhabiting the open ocean beyond continental shelves. In comparison, an additional 4% were demersal species found on or near the ocean floor, feeding on benthic organisms. Lastly, 3% of the species were benthopelagic, dwelling and foraging near the bottom and mid-water or near the water's surface.

The Philippines boasts an extensive reef area spanning approximately 25,000 km² (Alcala and Russ, 2002). Reef-associated species constitute a significant portion of the country's marine fish diversity, with 1,729 out of 2,824 reported species associated with coral reefs (Aliño and Tiquio, 2008). Establishing no-take reserves and fishery management projects within the Central Visayas region likely contributes to the abundance of reef-associated fish stocks observed in local markets. These marine reserves play a crucial role in promoting sustainable fisheries by facilitating the spillover of adult fish biomass into adjacent fishing grounds and enhancing larval recruitment, thereby increasing fish populations beyond reserve boundaries (Di Lorenzo et al., 2020; Medoff et al., 2022). Research confirmed the efficacy of marine protected areas in enhancing fisheries productivity, underscoring the importance of conservation measures in supporting the sustainability of reef-associated fisheries in the Philippines (Bayley et al., 2020; Di Lorenzo et al., 2020; Aurellado et al., 2021; Lenihan et al., 2021; Turnbull et al., 2021). The abundance of reef-associated fish species contributes significantly to the country's municipal fisheries sector, directly contributing an estimated 15-30% to the total national municipal fisheries production (Alcala and Russ, 2002).

Price variations among different habitat-associated fish groups

Reef-associated families exhibited the highest mean cost per kilogram at 3.95 ± 1.5 USD (mean \pm sd), followed by benthopelagic fishes at 3.38 ± 0.8 USD. Pelagic-oceanic fishes recorded a mean price of 3.21 ± 1.9 USD kg⁻¹, while a demersal fish family price was recorded at 2.34 USD kg⁻¹. In contrast, pelagic-neritic fishes had the lowest mean cost at 1.62 ± 0.5 USD per kilogram (Fig. 3A). Statistical analysis (One-way ANOVA: $F(4, 211) = 10.7$, $p < 0.0001$) revealed a significant difference in fish prices across habitat associations. Post hoc Tukey testing further elucidated these differences, indicating significant disparities in prices between the reef and pelagic neritic fish families ($p < 0.0001$), as well as between pelagic neritic and benthopelagic fish families ($p < 0.0001$).

Family Rachycentridae (*Rachycentron canadum*, common name: Cobia) was sold at 6.30 USD kg⁻¹. It displayed the highest value in terms of mean price among the other fish families, yet this fish was only observed once in the entirety of the survey. On the other hand, among all the fish families in the five markets, Labridae, Serranidae, and Lethrinidae consistently had the highest average price per kilogram. Fishes in the family Labridae average price ranges from 5.83-5.85 USD kg⁻¹. Fishes from the family Serranidae were sold at around 3.92-6.62 USD kg⁻¹ while prices of fishes from the family Lethrinidae were within the range of 4.14-6.01 USD kg⁻¹ (Fig. 3B).

The families of Labridae, Serranidae, and Lethrinidae are all included in the list of commercially important fishes occurring in the Philippines (Froese and Pauly, 2024). Commercially important fishes exhibit high consumer demand, which may have contributed to the high price observed in the market surveys. Reef fishes are highly valued

in markets for their exceptional taste and texture. Among them, species from the family Serranidae, particularly groupers, are the most sought-after for fresh consumption. These fish are in high demand among commercial, recreational, and subsistence fishers and are commonly sold fresh in local seafood markets, often commanding the highest prices (Orth, 2023). Additionally, groupers play a significant role in Southeast Asia's live reef fish trade, where plate-sized specimens can sell for up to 180 USD kg⁻¹ (Orth, 2023).

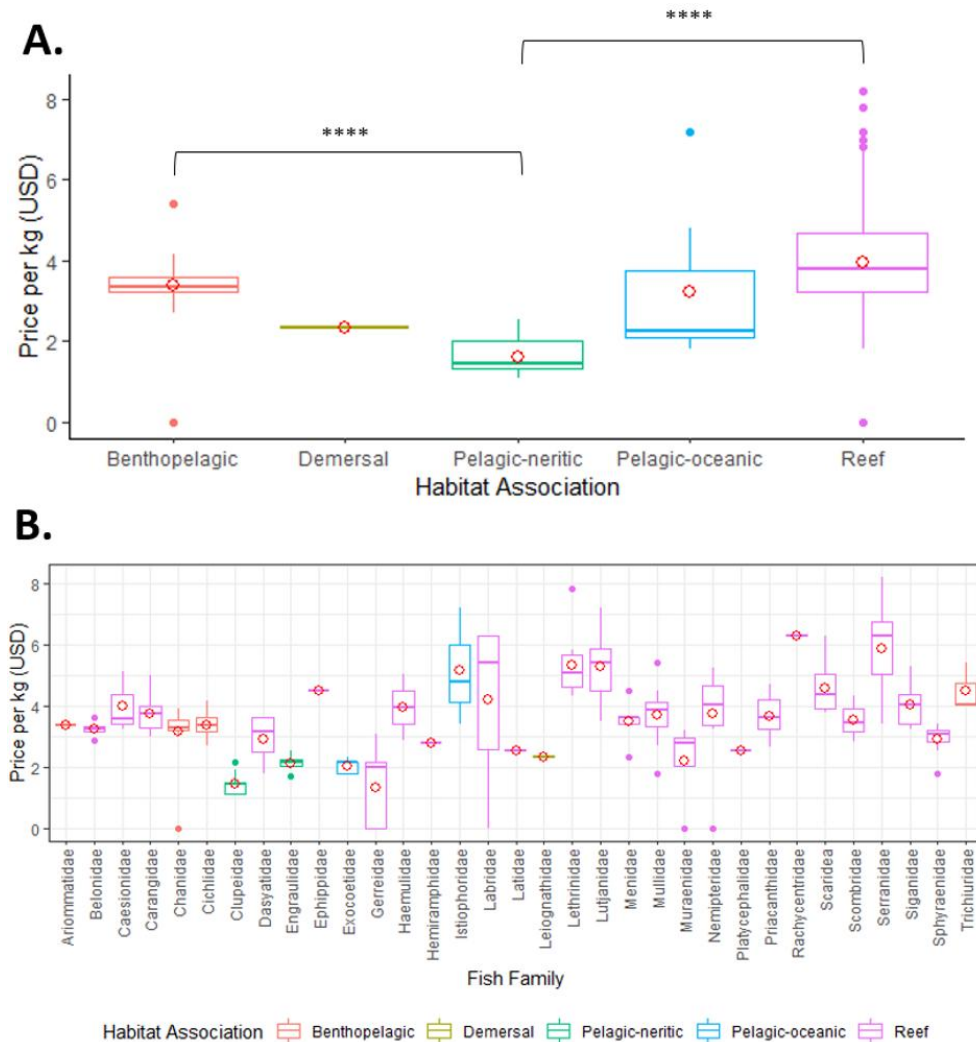


Figure 3. Boxplots illustrating fish prices in USD across habitat associations (A) and fish families (B) in the public markets of Cebu City in March-April 2018. The bar and asterisk (****) denote a significant difference between habitat associations in boxplot A ($p < 0.0001$). The color of the boxes indicates different habitat associations: red for benthopelagic, yellow for demersal, green for pelagic-neritic, blue for pelagic-oceanic, and purple for reef

As demand increased in the 1990s, reefs near Hong Kong, China were quickly depleted, and fishing grounds shifted and extended well into the Indo-Pacific region (Sadovy et al., 2003). The main exporting countries for the live reef fish trade are Indonesia, the Philippines, Australia, the People's Republic of China, Malaysia, Thailand, Vietnam, and Taiwan. The higher-priced fish are mainly supplied by countries such as Indonesia, Malaysia, Australia, and the Philippines (Sadovy et al., 2003). The Philippine

island of Palawan, particularly in Taytay, currently accounts for 70% of the country's live fish exports (Palla et al., 2015).

Volume and market dominance of key fish families in Cebu City's public markets

In the Cebu City markets, the predominant fish families sold were Scombridae (1339.33 ± 426.6 kg), Carangidae (1223.67 ± 287.5 kg), and Chanidae (613.67 ± 110.3 kg). Conversely, the families Ephippidae (4.00 ± 2.8 kg) and Haemulidae (3.50 ± 2.1 kg) contributed the lowest volumes. Notably rare were Acanthuridae, Latidae, and Platycephalidae, each observed only once throughout the survey, contributing merely 1 kg each (Fig. 4A). A significant difference in the volume of fish sold among families in the market was observed ($F(32, 49) = 22.04, p < 0.0001$).

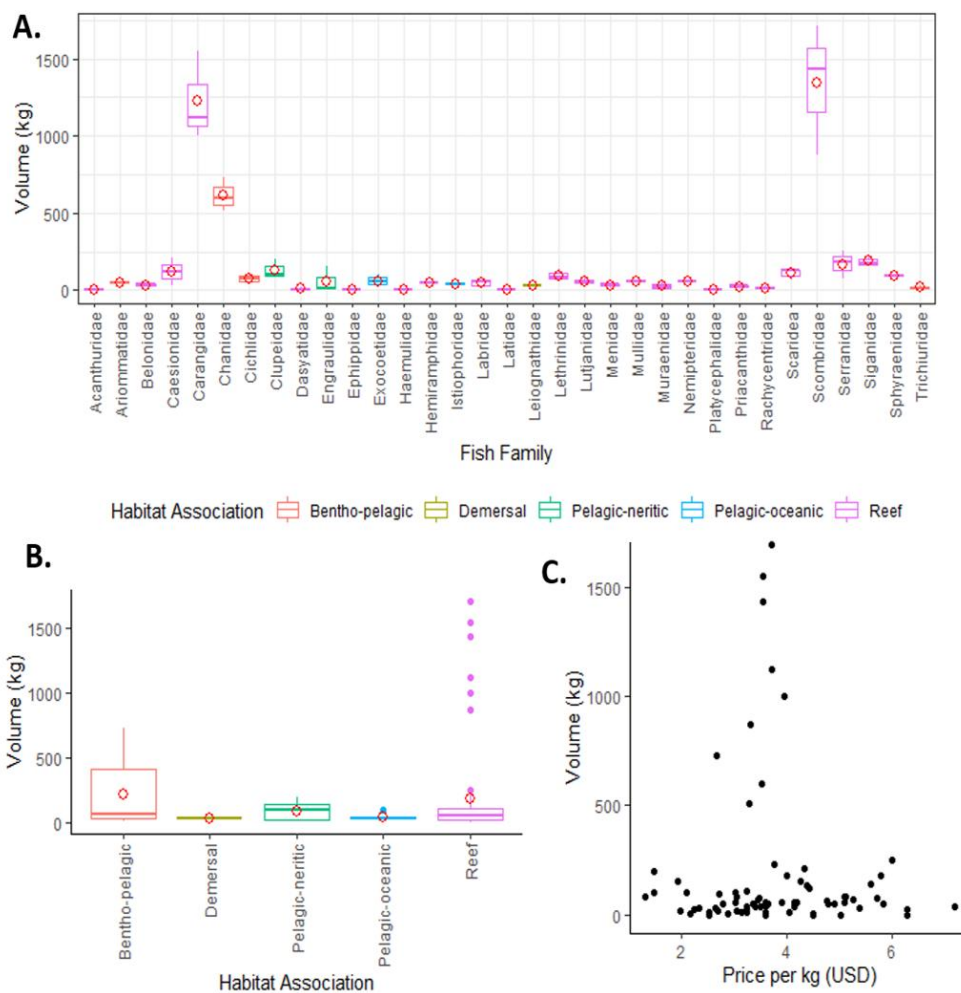


Figure 4. Boxplots illustrating fish volume in kg across fish families (A) and habitat associations (B) in the public markets of Cebu City in March-April 2018. The color of the boxes indicates different habitat associations: red for benthopelagic, yellow for demersal, green for pelagic-neritic, blue for pelagic-oceanic, and purple for reef. Scatterplot (C) displays the relationship between the volume (kg) of fish families observed in the market and the corresponding selling prices in USD. Each point represents a fish family, showcasing how volume correlates with price in the market setting

The family Scombridae had the highest total weight, with 4,018 kg of fish recorded across the three survey periods in the five Cebu City markets. This was followed by Carangidae with 3,671 kg and Chanidae with 1,841 kg. Collectively, these three families accounted for 67.7% of the total fish volume, dominating all surveyed market sites.

Scombridae and Carangidae are considered top predators in ocean ecosystems. Yellowfin and skipjack tuna of the family Scombridae feed on epipelagic fishes, establishing themselves as top predators in the trophic web (Romero et al., 2021; Martins et al., 2024). On the other hand, Carangids of the family Carangidae are fast-swimming carnivorous predators (Velasco-Reyes et al., 2022; Sandoval-Ramírez et al., 2024).

The prevalence of the family Chanidae across the five markets is likely driven by the high supply from aquaculture, particularly milkfish (*Chanos chanos*), locally known as *bangus*. These fish are primarily sourced from aquaculture operations in fishponds and are landed in various locations, including Daanbantayan and Bohol.

Milkfish contribute to 14% of global aquaculture production, with Indonesia and the Philippines as the top producers. In 2017, Indonesia accounted for 73% of the world's 1.7 million tonnes of milkfish aquaculture production, while the Philippines contributed 24% (Bagarinao, 1994; Marte, 2010; Cai et al., 2019, Jose and Radhakrishnan, 2023).

Milkfish are highly favored in aquaculture due to their fast growth, strong disease resistance, adaptability to captive conditions, low mortality, and high-quality flesh. Their economic importance is particularly notable in the Asia-Pacific region, where they command a high market value (Yusuf et al., 2014; Chen, 2019; Jose and Radhakrishnan, 2023).

The volume of fish showed no significant difference across habitat associations ($F(4,77) = 0.326$, $p = 0.86$) (Fig. 4B). One possible explanation for the consistent fish volume across habitat associations could be the homogenization of fishing practices and market preferences. It is plausible that fishing activities target similar species regardless of their habitat association, leading to a relatively uniform availability of fish across different habitats. Additionally, market demand may prioritize certain species or families, resulting in consistent sales volumes irrespective of habitat preferences.

Similarly, no significant correlation was found between the volume (kg) of fish families observed in the market and their corresponding selling prices ($r(79) = -0.3254$, $p = 0.7457$) (Fig. 4C). This finding highlights the complexity of market dynamics, where pricing appears to be influenced by factors beyond volume alone. While economic principles suggest that greater supply could lead to lower prices, the observed patterns indicate that additional variables play a more substantial role in determining fish prices.

Market forces such as consumer demand, species-specific preferences, and external economic conditions likely contribute to price variability. Certain fish species or families may retain high market value due to perceived quality, rarity, or cultural significance, irrespective of their volume. Additionally, factors such as seasonality, regulatory measures, and supply chain dynamics may further shape pricing trends.

Primary sourcing locations of fish sold in Cebu City markets

Based on vendor surveys, most fish sold in Cebu City markets came from landing sites in Daanbantayan (2,663 kg), Zamboanga (2,555 kg), and Bohol (2,051 kg), contributing 65.7% of total fish weight across three survey periods (Fig. 5). Daanbantayan is a major fish landing center, consistently supplying markets like Pasil since the 1970s (Cuyos and Spoehr, 1976; FAO, 2019). Despite high volumes, the data reflects only market-sold fish and may underrepresent actual catches. Bantayan landing site had the highest species

richness, with 25 fish families observed. Seventeen landing sites supply Cebu City markets, with 14 located in Central Visayas.

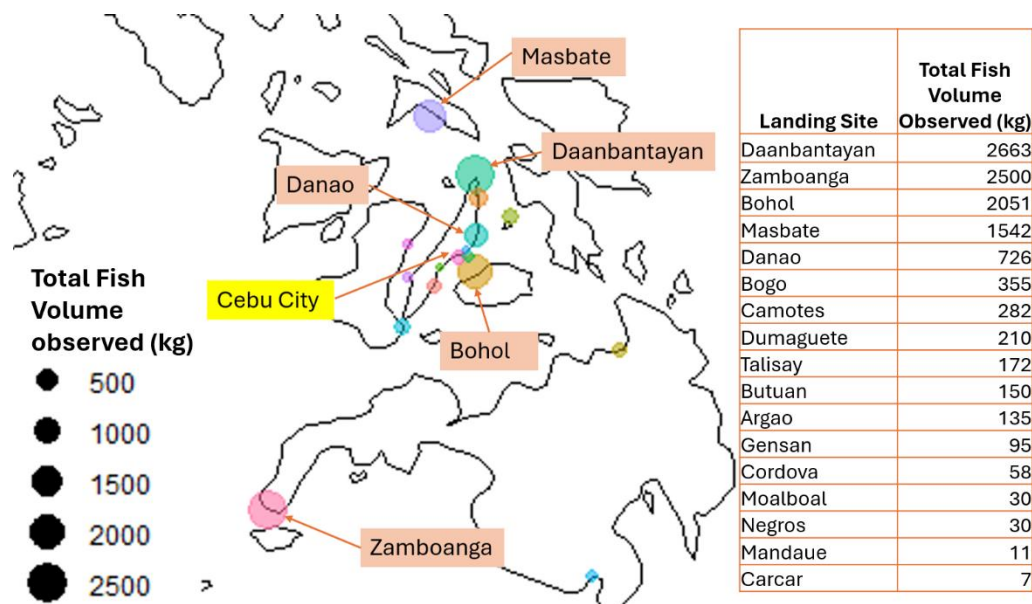


Figure 5. Volume (kg) of fish recorded from each landing site based on Vendor Interviews in Cebu City Markets in March-April 2018

Conclusion

The comprehensive market survey conducted across Banawa, Ramos, Lahug, Carbon, and Punta Princesa in March-April 2018 revealed a diverse array of fish species, totaling 109 across 35 families over three survey periods. Among these, the Carangidae, Scombridae, and Scaridae families emerged with the highest species richness. Notably, 79% of identified species were associated with reef habitats, reflecting the crucial relationship between fish populations and coral reef ecosystems, emphasizing the urgency of habitat protection measures.

Concerning trends have emerged regarding the conservation status of several species recorded in this study's survey. The Humphead wrasse is categorized as endangered in the IUCN Red List. Additionally, the Brown-marbled grouper is listed as vulnerable, while the Bali sardinella, Blackspot tuskfish, Yellow-tail parrotfish, and Narrow-barred Spanish mackerel are currently classified as near-threatened. Strengthening enforcement measures and improving oversight of species sold in markets and harvested by fishers will be crucial in preventing further population declines and ensuring sustainable fisheries management.

In terms of commercial value, the study identified several families, including Labridae, Serranidae, Lethrinidae, Lutjanidae, and Scaridae, as highly valued fishes. Furthermore, the market value of fish species was significantly influenced by their habitat associations, with reef-associated species commanding the highest mean price. This relationship suggests potential economic incentives for conserving reef habitats and associated species, presenting opportunities for sustainable economic development. The families Scombridae, Carangidae, and Chanidae dominated the surveyed markets in terms of fish volume, accounting for 67.7% of the total weight.

Recommendations stemming from this study encompass a multifaceted approach. Prioritizing conservation efforts for threatened species, enhancing market monitoring mechanisms, promoting public awareness about sustainable seafood choices, and integrating scientific findings into fisheries management policies are all essential steps toward safeguarding marine biodiversity and ensuring the sustainable management of fish resources in Cebu City and its surrounding areas. This study serves as a valuable baseline for future long-term studies. However, a key limitation of this study is that it only examined fish diversity during the hot-dry season (March-April 2018). Since fish availability in markets may fluctuate throughout the year due to seasonal variations in fishery dynamics, future studies should consider conducting surveys across different seasons to provide a more comprehensive understanding of species composition and trade patterns in Cebu's public markets.

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APPENDIX

Table 1. Comprehensive List of Fish Species organized by fish family recorded in Cebu City Markets during the Survey in March-April 2018, Including their English Name, Local Name, Habitat Association, and IUCN Red List Status

Family	Scientific Name	English Name	Local Name	Habitat Association	IUCN Red list Status	
1. Acanthuridae	<i>Acanthurus mata</i>	Elongate surgeonfish	Indangan	Reef-associated	Least concern	
2. Ariommatidae	<i>Ariomma indica</i>	Indian driftfish	Buli-buli	Benthopelagic	Not evaluated	
3. Belonidae	Unidentified	Needlefish	Balo	Reef-associated		
4. Caesionidae	<i>Caesio caeruleaurea</i>	Blue and gold fusilier	Solid	Reef-associated	Least concern	
	<i>Caesio cuning</i>	Redbelly yellowtail fusilier	Bilason	Reef-associated	Least concern	
	<i>Alectis indica</i>	Indian threadfish	Talakitok	Reef-associated	Least concern	
	<i>Atule mate</i>	Yellowtail scad	Duhao	Reef-associated	Least concern	
	<i>Carangoides sp.</i>	Longfin trevally	Mahinlo	Reef-associated		
	<i>Carangoides fulvoguttatus</i>	Yellowspotted trevally	Mamsa	Reef-associated	Least concern	
	<i>Carangoides malabaricus</i>	Malabar trevally	Mamsa	Reef-associated	Least concern	
	<i>Caranx melampygus</i>	Bluefin trevally	Mamsa	Reef-associated	Least concern	
	5. Carangidae	<i>Decapterus kurroides</i>	Redtail scad	Bodboron	Reef-associated	Least concern
		<i>Decapterus maruadsi</i>	Japanese scad	Bodboron	Reef-associated	Least concern
<i>Gnathanodon speciosus</i>		Golden trevally	Badlon	Reef-associated	Least concern	
<i>Parastromateus niger</i>		Black pomfret	Tabas	Reef-associated	Least concern	
<i>Scomberoides tol</i>		Needlescaled queenfish	Dorado	Reef-associated	Least concern	
<i>Selar crumenophthalmus</i>		Bigeye scad	Tamarong	Reef-associated	Least concern	
<i>Selaroides leptolepis</i>		Yellowstripe scad	Caraballas	Reef-associated	Least concern	
	<i>Uraspis helvola</i>	Whitetongue jack	Mamsa	Reef-associated	Least concern	
6. Chanidae	<i>Chanos chanos</i>	Milkfish	Bangus	Benthopelagic	Least concern	
7. Cichlidae	<i>Oreochromis niloticus</i>	Nile tilapia	Tilapya	Benthopelagic	Least concern	
8. Clupeidae	<i>Sardinella lemuru</i>	Bali sardinella	Tuloy	Pelagic-neritic	Near threatened	

Family	Scientific Name	English Name	Local Name	Habitat Association	IUCN Red list Status
9.Dasyatidae	<i>Neotrygon kuhlii</i>	Blue-spotted stingray	Pagi	Reef-associated	Data deficient
10. Engraulidae	<i>Encrasicholina oligobranchus</i>	Philippine anchovy	Bolinao	Pelagic-neritic	Data deficient
11.Ephippidae	<i>Chaetodipterus sp.</i>	Spadefishes	Pata	Reef-associated	
	<i>Platax orbicularis</i>	Orbicular batfish	Alibangbang	Reef-associated	Least concern
12.Exocoetidae	<i>Cheilopogon sp.</i>	Flyingfish	Palongon	Pelagic-oceanic	
13. Gerreidae	<i>Gerres erythrourus</i>	Deep-bodied mojarra	Samolok	Reef-associated	Least concern
14. Haemulidae	<i>Diagramma pictum</i>	Painted sweetlips	Lipti	Reef-associated	Not evaluated
	<i>Plectorhinchus flavomaculatus</i>	Lemonfish	Lipti	Reef-associated	Not evaluated
15.Hemiramphidae	<i>Hemiramphus far</i>	Black-barred halfbeak	Suwasit	Reef-associated	Not evaluated
	Unidentified	Halfbeaks	Suwasit	Reef-associated	
16. Istiophoridae	<i>Makaira mazara</i>	Indo-Pacific blue marlin	Malasugi	Pelagic-oceanic	Not evaluated
	<i>Cheilinus chlorourus</i>	Floral wrasse	Molmol	Reef-associated	Least concern
	<i>Cheilinus trilobatus</i>	Tripletail wrasse	Molmol	Reef-associated	Least concern
	<i>Cheilinus undulatus</i>	Humphead wrasse	Labayan	Reef-associated	Endangered
17. Labridae	<i>Choerodon anchorago</i>	Orange-dotted tuskfish	Molmol	Reef-associated	Least concern
	<i>Choerodon schoenleini</i>	Blackspot tuskfish	Lamon lamon	Reef-associated	Near threatened
	<i>Choerodon zamboangae</i>	Purple eyebrowed tuskfish	Molmol	Reef-associated	Least concern
	<i>Iniistius aneitensis</i>	Yellowblotch razorfish	Tamago/Mulmul	Reef-associated	Least concern
18. Latidae	<i>Psammoperca waigiensis</i>	Waigieu seaperch	Burgan	Reef-associated	not evaluated
19. Leiognathidae	Unidentified	Slimys, slipmouths, or ponyfishes	Sapsap	Demersal	
	<i>Lethrinus genivittatus</i>	Longspine emperor	Kiros	Reef-associated	Least concern
	<i>Lethrinus haematopterus</i>	Chinese emperor	Katambak	Reef-associated	not evaluated
20. Lethrinidae	<i>Lethrinus harak</i>	Thumbprint emperor	Katambak	Reef-associated	Least concern
	<i>Lethrinus lentjan</i>	Pink ear emperor	Katambak	Reef-associated	Least concern
	<i>Lethrinus miniatus</i>	Trumpet emperor	Katambak	Reef-associated	Least concern

Family	Scientific Name	English Name	Local Name	Habitat Association	IUCN Red list Status
21. Lutjanidae	<i>Lethrinus nebulosus</i>	Spangled emperor	Katambak	Reef-associated	Least concern
	<i>Lutianus sp.</i>	Red Snapper	Maya maya	Reef-associated	
	<i>Lutjanus argentimaculatus</i>	Mangrove red snapper	Maya maya	Reef-associated	Least concern
	<i>Lutjanus fulviflamma</i>	Dory snapper	Maya-maya	Reef-associated	Least concern
	<i>Lutjanus gibbus</i>	Humpback red snapper	Maya maya	Reef-associated	Least concern
	<i>Lutjanus lutjanus</i>	Bigeye snapper	Maya maya	Reef-associated	Least concern
	<i>Lutjanus monostigma</i>	One-spot snapper	Maya-maya	Reef-associated	Least concern
	<i>Lutjanus rufolineatus</i>	Yellow-lined snapper	Maya maya	Reef-associated	Least concern
22. Menidae	<i>Lutjanus vitta</i>	Brownstripe red snapper	Maya maya	Reef-associated	Least concern
	<i>Mene maculata</i>	Moonfish	Bilong-bilong	Reef-associated	not evaluated
	<i>Parupeneus barberinus</i>	Dash-and-dot goatfish	Timbungan	Reef-associated	Least concern
23. Mullidae	<i>Parupeneus chrysopleuron</i>	Yellow striped goatfish	Timbungan	Demersal	Least concern
	<i>Parupeneus indicus</i>	Indian goatfish	Timbungan	Reef-associated	Least concern
	<i>Parupeneus multifasciatus</i>	Manybar goatfish	Timbungan	Reef-associated	Least concern
	<i>Upeneus moluccensis</i>	Goldband goatfish	Salmonete	Reef-associated	Least concern
24. Muraenidae	<i>Upeneus sulphureus</i>	Sulphur goatfish	Timbungan	Demersal	Least concern
	<i>Gymnothorax sp.</i>	Moray eels	Ubod	Reef-associated	
	<i>Gymnothorax favagineus</i>	Laced moray	Ubod	Reef-associated	Least concern
	<i>Nemipterus bathybius</i>	Yellowbelly threadfin bream	Lagaw	Demersal	Least concern
25. Nemipteridae	<i>Nemipterus furcosus</i>	Fork-tailed threadfin bream	Lagaw	Reef-associated	Least concern
	<i>Nemipterus hexodon</i>	Ornate threadfin bream	Lagaw	Demersal	Least concern
26. Platycephalidae	<i>Scolopsis monogramma</i>	Monogrammed monocle bream	Buklid	Reef-associated	Least concern
	<i>Platycephalus sp.</i>	Flatheads	Sunugan	Reef-associated	
27. Priacanthidae	<i>Priacanthus sp.</i>	Bigeyes or catalufas	Bukaw	Reef-associated	
28. Rachycentridae	<i>Rachycentron canadum</i>	Cobia	Pandawan	Reef-associated	Least concern

Family	Scientific Name	English Name	Local Name	Habitat Association	IUCN Red list Status	
29. Scaridae	<i>Cetoscarus ocellatus</i>	Spotted parrotfish	Molmol	Reef-associated	Least concern	
	<i>Chlorurus bleekeri</i>	Bleeker's parrotfish	Molmol	Reef-associated	Least concern	
	<i>Chlorurus sordidus</i>	Daisy parrotfish	Molmol	Reef-associated	Least concern	
	<i>Scarus sp.</i>	Parrotfish	Molmol	Reef-associated		
	<i>Scarus dubius</i>	Regal parrot	Molmol	Reef-associated	Least concern	
	<i>Scarus forsteni</i>	Forsten's parrotfish	Molmol	Reef-associated	Least concern	
	<i>Scarus ghobban</i>	Blue-barred parrotfish	Molmol	Reef-associated	Least concern	
	<i>Scarus hypselopterus</i>	Yellow-tail parrotfish	Molmol	Reef-associated	Near threatened	
	<i>Scarus psittacus</i>	Common parrotfish	Molmol	Reef-associated	Least concern	
	<i>Scarus quoyi</i>	Quoy's parrotfish	Molmol	Reef-associated	Least concern	
30. Scatophagidae	<i>Scarus tricolor</i>	Tricolour parrotfish	Molmol	Reef-associated	Least concern	
	<i>Scatophagus argus</i>	Spotted scat	Kikilo	Reef-associated	Least concern	
	<i>Auxis rochei</i>	Bullet tuna	Tulingan	Pelagic-neritic	Least concern	
	<i>Euthynnus affinis</i>	Kawakawa	Bariles	Pelagic-neritic	Least concern	
	<i>Katsuwonus pelamis</i>	Skipjack tuna	Bariles	Pelagic-oceanic	Least concern	
	<i>Rastrelliger brachysoma</i>	Short mackerel	Kapisnon	Pelagic-neritic	Data deficient	
	<i>Rastrelliger faughni</i>	Island mackerel	Kapisnon	Pelagic-neritic	Data deficient	
	31. Scombridae	<i>Rastrelliger kanagurta</i>	Indian mackerel	Anduhaw	Pelagic-neritic	Data deficient
		<i>Scomber japonicus</i>	Chub mackerel	Salmon	Pelagic-neritic	Least concern
		<i>Scomberomorus comerson</i>	Narrow-barred Spanish mackerel	Tanguigi	Pelagic-neritic	Near threatened
<i>Scomberomorus guttatus</i>		Indo-Pacific king mackerel	Tanguigi	Pelagic-neritic	Data deficient	
<i>Scomberomorus semifasciatus</i>		Broad-barred king mackerel	Tikab	Pelagic-neritic	Least concern	
32. Serranidae	<i>Thunnus albacares</i>	Yellowfin tuna	Bariles	Pelagic-oceanic	Least concern	
	<i>Cephalopholis miniata</i>	Coral hind	Lapu-lapu	Reef-associated	Least concern	
	<i>Epinephelus areolatus</i>	Areolate grouper	Lapu-lapu	Reef-associated	Least concern	

Family	Scientific Name	English Name	Local Name	Habitat Association	IUCN Red list Status
33. Siganidae	<i>Epinephelus corallicola</i>	Coral grouper	Lapu-lapu	Reef-associated	Least concern
	<i>Epinephelus fuscoguttatus</i>	Brown-marbled grouper	Lapu-lapu	Reef-associated	Vulnerable
	<i>Epinephelus malabaricus</i>	Malabar grouper	Lapu- lapu	Reef-associated	Least concern
	<i>Epinephelus ongus</i>	White-streaked grouper	Lapu-lapu	Reef-associated	Least concern
	<i>Epinephelus quoyanus</i>	Longfin grouper	Lapu-lapu	Reef-associated	Least concern
	<i>Epinephelus sexfasciatus</i>	Sixbar grouper	Lapu- lapu	Reef-associated	Least concern
	<i>Plectropomus leopardus</i>	Leopard coral grouper	Suno	Reef-associated	Least concern
	<i>Siganus canaliculatus</i>	White-spotted spinefoot	Danggit	Reef-associated	Least concern
	<i>Siganus guttatus</i>	Orange-spotted spinefoot	Kitong	Reef-associated	Least concern
	34. Sphyraenidae	<i>Sphyraena sp.</i>	Barracuda	Tabangko	Reef-associated
<i>Sphyraena sp.</i>		Barracuda	Rompi	Reef-associated	
35. Trichiuridae	<i>Trichiurus sp.</i>	Hairtail	Diwit- diwit	Benthopelagic	