



SILVER POMFRET *PAMPUS ARGENTEUS* AS MAHARASHTRA'S STATE FISH

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Abstract:

The Silver Pomfret (*Pampus argenteus*) has been designated as the state fish of Maharashtra, highlighting its ecological, economic, and cultural significance. This article explores the role of state symbols in India, emphasizing the importance of biodiversity conservation. The Silver Pomfret serves as a vital resource for local communities and the fishing industry, yet its population is declining due to overfishing, habitat disruption, and pollution. In response, the Maharashtra government has initiated conservation measures, including fishing restrictions and awareness campaigns. This designation not only aims to safeguard the species but also promotes sustainable practices that support the livelihoods of coastal communities. Through understanding its biological characteristics and cultural relevance, this initiative underscores the need for collaborative efforts to ensure the sustainability of marine resources.

Keywords: Silver Pomfret Conservation, Marine Biodiversity Management, Cultural and Economic Significance

Introduction:

The significance of state symbols in India encompasses cultural identity, biodiversity awareness, historical context, and tradition. Each state in India has designated symbols that represent its diverse flora, fauna, and cultural ethos. State symbols play a crucial role in embodying the natural resources, historical significance, and unique characteristics of a state, thereby fostering a sense of pride among its residents. Among these symbols, the state fish occupies a prominent position, reflecting the ecological richness and culinary traditions of the

region. It is important that all the states declare their state fish and start contributing towards the conservation of those neglected species, which are in urgent need of conservation. This concept may also be applied elsewhere for biodiversity conservation. The varying climatic conditions have led to varied distribution of species among different states of India and the people have different preferences and cultural attachments towards different species. Sensing an opportunity to make use of this, the ICAR-National Bureau of Fish Genetic Resource, Lucknow has conceptualised the "state fish" concept as a method to conserve fish species (Sarkar *et al.* 2024). Different states of India have declared their state fish based on the abundance, preference and importance in the day to day life of the people. Out of 28 states, 21 have designated state fishes, while 3 have recognized state aquatic animals, emphasizing the importance of conservation, breeding, and cultural aspects. These efforts aim to protect biodiversity (NFDB, 2023).

Maharashtra features several state symbols, including the Mango tree, Indian giant squirrel, Blue mormon butterfly, Green pigeon, and Silver pomfret as its state fish. The designation of the silver pomfret as the state fish of Maharashtra is significant in promoting a balanced and protected marine environment while conserving this economically important seafood species (Figure 1). Notably, the silver pomfret, alongside other seafood such as hilsa and prawn, was commemorated in definitive postage stamps released by the Department of Posts, India, in 1979 and 1982 (Figure 2). This initiative honored the fish's contributions to the local economy and seafood culture. The silver

pomfret holds a vital role within the coastal environment of Maharashtra, contributing to the livelihoods of coastal communities and preserving their cultural heritage. This recognition underscores the need for sustainable practices to safeguard marine ecosystems and the communities that rely on them.

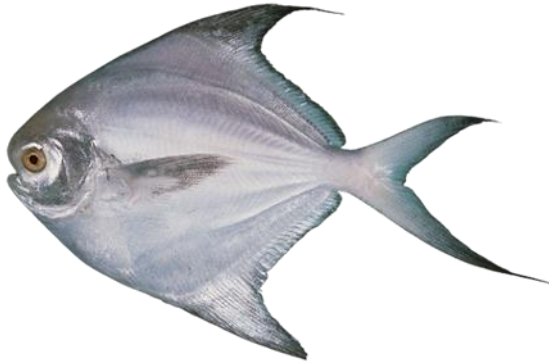


Figure 1. State Fish of Maharashtra (*Pampus argenteus*) @FAO



Figure 2. Postage stamp by Gol, 1982

The Maharashtra government has officially designated the silver pomfret (*Pampus argenteus*) as the state fish, a decision prompted by growing concerns regarding its declining population in coastal waters. This announcement was made by Sudhir Mungantiwar, the state's Minister for Fisheries, during a national conference on the Kisan Credit Card. Accompanying this designation was a government resolution (GR) outlining several measures aimed at the conservation of this species. The silver pomfret is a significant seafood choice in Maharashtra, particularly among the coastal communities, and is indigenous to the coastal regions of South and Southeast Asia, as well as the Middle East. It plays a vital role in the marine food chain, contributing to the ecological balance by maintaining populations of prey species. The GR

highlights the need to prevent the fishing of undersized individuals, promote the growth of mature pomfret, and address local conservation issues, all while aiming to enhance foreign currency earnings through increased seafood exports. Minister Mungantiwar emphasized the global demand for pomfret and its economic potential for local fishermen. He noted that the initiative not only addresses conservation challenges but could also lead to significant economic benefits for the fishing community. The government resolution aims to empower the fisheries department to implement conservation strategies for the silver pomfret, locally referred to as "paplet" or "sarangi". Supporting this decision, the GR references findings from the International Union for Conservation of Nature (IUCN), which indicate a decline in both the population and catch rates of the silver pomfret in Maharashtra. This decline is attributed to mechanized fishing practices that have resulted in the premature capture of juvenile fish, thereby exacerbating the reduction of mature populations. Fishermen's associations have voiced their concerns regarding this issue, calling for government intervention to protect the species.

Historically, silver pomfret was abundant along the coasts of Sindhudurg, Ratnagiri, Raigad, Thane, and Palghar districts; however, production figures have been troubling. According to the Marine Products Export Development Authority (MPEDA), production levels reached 17,235 tonnes in 2022, reflecting an 8.45% decrease compared to 2017. The persistent decline in pomfret stocks since the 1980s is linked to various factors, including habitat disruption caused by industrial activities such as the establishment of the Mumbai High oil production project. The Maharashtra government's decision to declare the silver pomfret as the state fish is a critical step toward addressing conservation concerns and promoting sustainable fishing practices, thereby ensuring the longevity of this economically and ecologically important species.

Taxonomy and Identification:

Pampus argenteus belongs to the family Stromateidae and the order Scrombriformes. It is commonly known as the silver pomfret. It was first

described in 1788 by the Swedish botanist Bengt Anders Euphrasén (1756-1796). It represents a significant marine resource, particularly in the context of trawling activities in India. This species is highly sought after as a food fish globally due to its palatable qualities. As per Haedrich(1984) *Pampus argenteus* exhibits a body that is notably deep and compressed, yet relatively thick. The caudal peduncle is short, deep, and compressed, devoid of keels, and possesses firm musculature. The mouth is small, subterminal, and exhibits a downward curvature. The maxilla is immobile, covered with skin, and fused. The dentition consists of minute, uniserial, flattened teeth, characterized by a prominent central cusp accompanied by two smaller cusps, while the palate is devoid of teeth. The gill membranes are broadly fused to the isthmus, with the gill opening presenting as a vertical slit covered by a flap of skin; gill rakers comprise 2 to 3 in the upper row and 8 to 10 in the lower row on the first arch. The pectoral fins are elongated and wing-like, whereas pelvic fins are absent. The caudal fin is stiff and forked, with the lower lobe being longer than the upper lobe. The anterior rays of the median fins, particularly the anal fin, and the ventral lobe of the caudal fin are often significantly elongated and distinctly falcate. The scales are very small, cycloid (smooth), easily shed, and extend onto the bases of all fins. The lateral line is positioned high, closely following the dorsal profile and extending onto the caudal peduncle. The species displays a silvery white hue on the sides, transitioning to blue or grey on the dorsal surface. The body is adorned with numerous small black dots, particularly prominent on the snout, lower jaw, and cheek. The fins exhibit a yellowish coloration with dark margins, while juvenile individuals are predominantly silvery.

Habitat and Distribution:

The silver pomfret, is a schooling pelagic fish typically found in shallow marine environments (Fischer & Bianchi, 1984). It is widely distributed across the Indo-Pacific region, with significant populations in the coastal waters of countries such as India, Bangladesh, Myanmar, and parts of Southeast Asia. In Indian waters, it is particularly abundant along the

western coast, including Maharashtra, where it is vital to local fisheries (Kuronuma& Abe, 1972; Davis & Wheeler, 1985; Froese & Pauly, 2011). The species can attain a maximum length of approximately 60 cm (Fischer & Bianchi, 1984). Adult silver pomfrets predominantly feed on ctenophores, salps, medusae, and various groups of zooplankton (Khan, 2000; Froese&Pauly, 2011). This species typically inhabits the continental shelf and is often found in deeper waters, generally between 20 to 200 meters (65 to 660 feet) deep. It tends to favor sandy or muddy bottoms, which provide suitable foraging grounds. The natural habitat and broad geographical range of the silver pomfret highlight its ecological significance and economic value to coastal communities. Understanding these biological characteristics is crucial for promoting sustainable fishing practices and ensuring the conservation of this important species.

Catch Trends:

Maharashtra boasts a coastline of approximately 720 kilometers, supporting a diverse array of marine resources. In 2023, the state recorded a per capita fish consumption rate of 2.47 kg. The pomfret fishery in Maharashtra primarily comprises three species: the silver pomfret (*Pampus argenteus*), black pomfret (*Parastromateus niger*), and Chinese pomfret (*Pampus chinensis*). Among these, *Pampus argenteus* is the most dominant species. In 2023, the total marine fish landings in Maharashtra amounted to 446,000 metric tons, with pomfret contributing 10.06% to the overall marine fish landings (DoF, 2023). The silver pomfret accounted for 40,000 metric tons from the west coast, with 18,000 metric tons originating from Maharashtra (Handbook of Fisheries Statistics, 2023). The total contribution from trawl nets was recorded at 4,162 metric tons, representing 2.46% of the total marine fish landings (DoF, 2022). Notably, the percentage share of silver pomfret in the total valuation of marine fish production in Maharashtra is 16.3% (DoF, 2022). This data underscores the economic significance of the silver pomfret within the state's fisheries sector. Thane district reported the highest fish landings in Maharashtra, totaling 8,884 tonnes in 2022. Figure 3 represents a notable decline in

production compared to the 15,808 tonnes recorded in 2017.

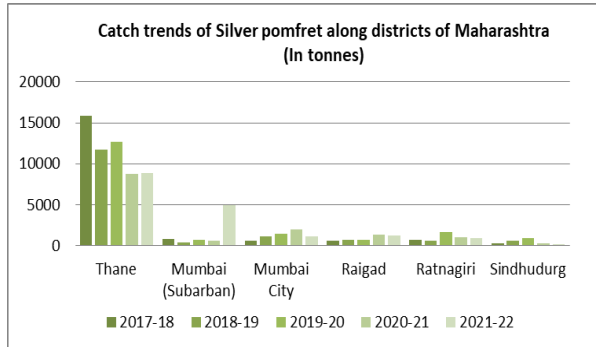


Fig. 3. Catch trends of Silver pomfret along districts of Maharashtra (In tonnes) (Source: DoF, 2023; Handbook of Fisheries Statistics, 2023)

Threats and Conservation status:

Fishermen from Maharashtra gave alert within fish-eating communities, decline is attributed to rising pollution and undersized fishing before reaching full maturity and breeding age. Due to annual decrease in production members of satpati fishermen society in palghar representing the group that supply food to Mumbai and nearby coastal area are urging for special recognition, of the species. This designation would enable to focused breeding programs and securing funding for its preservation. The community heighted the catch from last 35 years decline by 50 %. The size and weight of the fish have also notably decreased due to unlawful catches of undersized juvenile fish, coupled with escalating sea pollution. Changes in fishing practices and marketing dynamics has negatively affects the silver pomfret population in north western regions due to juvenile fishing. Various organizations and government bodies are promoting sustainable fishing practices among local fishermen. This includes education on responsible catch limits, the importance of protecting juvenile fish, and the use of selective fishing gear that minimizes bycatch.

Initiatives like the Marine Stewardship Council (MSC) certification encourage sustainable fishing practices by recognizing fisheries that meet certain environmental standards. In 2014, the IUCN declared silver pomfret as Vulnerable in the list of threatened

species. A uniform ban on fishing will be implemented for all fishing vessels in the Indian Exclusive Economic Zone (EEZ) beyond territorial waters along the West Coast, spanning from June 1 to July 31, 2024 (inclusive of both days), for a total duration of 61 days. This fishing ban will exempt traditional non-motorized fishing units (Gol, 2024). The minimum length size (MLS) for the silver pomfret (*Pampus argenteus*) is established at 14 cm, which represents the size at which the species reaches maturity. Implementing an MLS is crucial for maintaining healthy fish stocks and promoting sustainable fisheries management (Anulekshi *et al.* 2018).

Crafts and Gears:

The fishing methods employed for pomfret fisheries typically include trawls, bag nets, and gill nets, with notable areas of abundance in Maharashtra, Gujarat, and Orissa. The peak fishing season for this species is generally recognized as extending from September to January. In Indian waters, silver pomfrets are predominantly harvested using a variety of fishing techniques, including bottom trawls, gill nets, and fixed bag nets (Khan, 2000). The Fish Trawl (62 Angli disco dol), a two-seam high-opening bottom trawl net, is specifically utilized along the Ratnagiri coast for catching Ribbonfish, Squid, Croaker, and Pomfret (Sawant & Mohite, 2016). Modifications in gill netting techniques have been observed along the Satpati and Sindhudurg coasts (Waghmare *et al.*, 2018). The drift gillnets employed, with mesh sizes ranging from 140 to 155 mm (large) and 70 to 130 mm (small), account for a significant portion of pomfret landings in India (Khan, 2000). The Satpati coast is recognized as a primary fishing ground for silver pomfrets using drift gillnets (Gladstone *et al.*, 2016). Perumal and Alagarwamy (1970) documented a significant catch of *Pampus argenteus* during a routine training voyage of the Swedish-built fishery training vessel "Bluefin". In Gujarat, the use of Jarva (gill nets) and PankhaJal is particularly prevalent for capturing silver pomfrets along the Navsari and Veraval coast (Mittal *et al.*, 2023; Prassana and Dharmaraja, 1978; Ghoshet *al.* 2009).

Cultural Significance:

The Indo-Asia-Pacific region places considerable culinary value on the silver pomfret (*Pampus argenteus*), renowned for its distinctive flavor profile. When properly prepared, the fish exhibits a soft, buttery texture, making it highly desirable among consumers. In Indian markets, silver pomfret is often sold at a premium price, reflecting its cultural significance and local demand. Regionally, it is referred to by various names, such as "Pamplet" in Mumbai and "Vawali" in southern India, underscoring its importance within local culinary traditions.

In Maharashtrian cuisine, the silver pomfret is particularly esteemed for its delicate flavor and versatility. Its popularity supports local fisheries and highlights the region's rich maritime heritage. The fish is commonly sold fresh in local markets or shipped frozen to urban centers, thereby catering to diverse consumer preferences. Several traditional dishes prominently feature silver pomfret in Maharashtrian cuisine. For instance, "Pomfret Fry" involves marinating the fish in a blend of spices, including turmeric and red chili powder, and shallow frying it to achieve a crispy exterior. "Pomfret Curry," a household staple, is prepared in a coconut-based gravy enriched with spices such as coriander and tamarind, typically served alongside rice or chapati. Additionally, "Stuffed Pomfret" showcases traditional cooking techniques by filling the fish with a mixture of spices and herbs before steaming or grilling it. These dishes not only reflect the culinary expertise of the region but also emphasize the integral role of silver pomfret in both everyday meals and festive celebrations.



Figure 4. Pomfret Fry at Versova seafood festival @VSF, 2023

The Koli community, the indigenous fishing population of Maharashtra, is recognized for its deep-rooted traditions and cultural practices related to fishing. The Versova Seafood Festival, held annually at the beginning of the year, showcases a variety of seafood delicacies, with particular emphasis on silver pomfret alongside other local favorites such as mackerel (referred to as "bangda") and Bombay duck ("bombil"). This festival not only highlights the culinary significance of these fish but also celebrates the cultural heritage of the Koli community and their contributions to the region's maritime economy.

Summary:

The declaration of silver pomfret (*Pampus argenteus*) as Maharashtra's state fish marks a significant step towards addressing conservation challenges while fostering economic growth within the fisheries sector. The species plays a crucial role in maintaining marine biodiversity and supporting the livelihoods of coastal communities. Sustainable management practices are essential to combat threats such as pollution, juvenile fishing, and habitat loss. By implementing effective conservation strategies and promoting awareness among local fishermen, Maharashtra aims to restore pomfret populations while enhancing the ecological integrity of its marine environments. Ultimately, this initiative serves as a model for other states, emphasizing the importance of biodiversity conservation and the interconnectedness of cultural heritage and economic sustainability in the context of natural resource management.

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