

18 Longnose skate, *Raja rhina*



Longnose skate, *Raja rhina*. Photo credit: Department archives

History of the Fishery

There is no directed commercial fishery for longnose skate in California; however, longnose skate is taken incidentally as bycatch and sold when fishing for other groundfish species, primarily sablefish and Dover sole. The skate fishery in California is exclusively commercial due to their deep water habitat and plays a moderate role in the seafood industry. Landings in the commercial skate fishery in California have been documented by the California Department of Fish and Wildlife since 1916. Despite historical record keeping, it is difficult to determine what proportion of these landings were composed of Longnose skate (*Raja rhina*) because a general “unspecified” skate category was used when recording landings rather than individual market categories to distinguish between various skate species. In addition to longnose skate, the general “unspecified” skate category is also comprised of Big skate (*Raja binoculata*), California skate (*Raja inornata*), shovelnose guitarfish (*Rhinobatos productus*), and thornback skate (*Platyrrhinoidis triseriata*). These combined commercial skate landings varied widely in the past due to a combination of fluctuations in market demand and changes to fishing regulations. From 1916-1989, the skate catch ranged from a low of 50,419 pounds (23 metric tons) in 1944 to a high of 631,420 pounds (286 metric tons) in 1981. Throughout the last two decades, landings of all skates peaked in 1997 at 2.9 million pounds (1315 metric tons) with an ex-vessel value of \$575,000 (Figure 18-1).

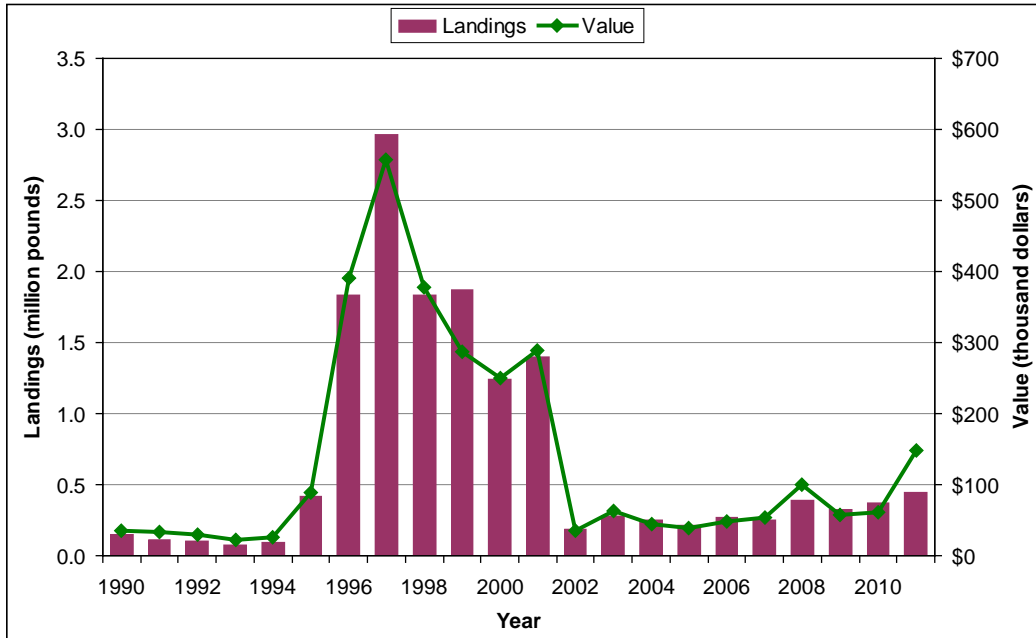


Figure 18-1. Skate commercial landings and value, 1990-2011. Data source: Commercial Fisheries Information System (CFIS) data, all species and gear types combined.

Longnose skate are easily distinguishable from other skate species, although it is still commonly reported on landing receipts as “unspecified skate”. Over the last several years, changes in management resulted in better information on longnose skate landings. Regulatory sorting requirements were implemented requiring longnose skate to be separated. In addition, dockside sampling protocols were expanded to include sampling of all skate species, resulting in increased identification and separation of species. As a result of these changes, it is apparent that longnose skate is the dominate skate species caught in California (Figure 18-2), while the other skate species are landed to a much lesser extent (Figure 18-3).

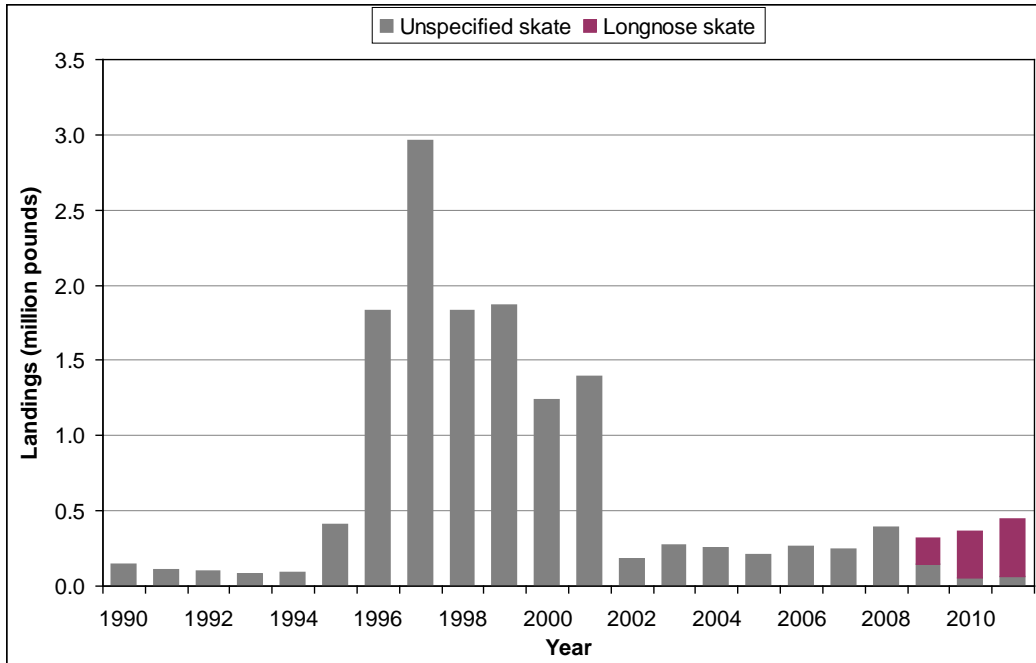


Figure 18-2. Longnose skate and unspecified skate commercial landings, 1990-2011. Data source: CFIS data, all gear types combined.

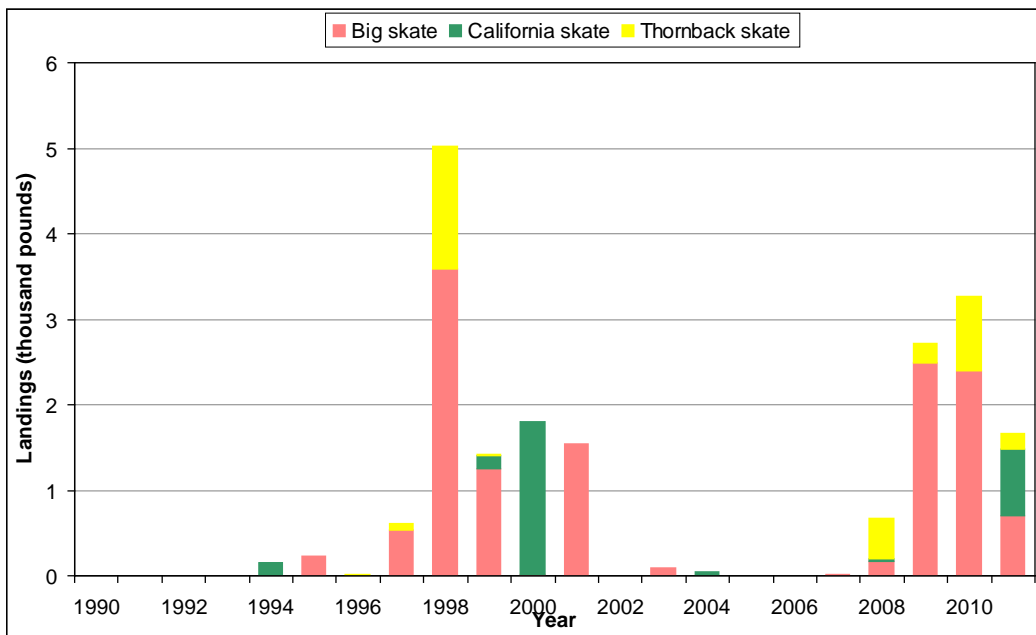


Figure 18-3. Big, California, and thornback skate commercial landings, 1990-2011. Data source: CFIS data, all gear types combined.

Longnose skate is incidentally taken while vessels are targeting other deep water groundfish species such as sablefish and Dover sole. As a result of their large size and wing span, it has been a common practice for vessel crews to “wing” skates by removing the marketable pectoral fins and discarding the carcass in order to save space

onboard rather than storing skates in a whole condition. This practice contributed to the difficulty of identifying and recording landings of skates by correct species. Beginning in 2009, existing regulatory authority was enforced to disallow the practice of “winging” in order to more accurately record species composition and estimate life history parameters. There was initial concern that landing large whole skates, in addition to mandatory sorting, would impose time and safety constraints on industry and groundfish sampling staff that would prevent compliance, and possibly encourage maximal discarding at sea. Despite these concerns, landings are being separated; now the majority of receipts record the longnose skate market category rather than the unspecified skate category, and sampling information has been safely obtained from both market categories (Figure 18-2). Accordingly, industry now spends some extra time sorting, but overall landings were not negatively impacted by this requirement. Smaller vessels were moderately impacted because they could not accommodate the onboard space necessary to separate and land longnose skate whole. However, these smaller vessels were rarely encountering skates species, so the overall amount of discard was negligible.

From 1990 to 2011, skates were almost exclusively caught with trawl gear (96 percent average), while minimal amounts were taken with hook-and-line and gill net gears. When market demand peaked from 1995 to 2001, an average of 75 percent of skates were landed in northern California—in the Crescent City and Eureka port complexes. In 2010 and 2011, there was a southern shift in landings with the majority coming from Eureka and Fort Bragg (Figure 18-4). This was likely due to changes in the trawl fishery and market demand.

Longnose skate are considered an incidental species within the groundfish fishery in that they have never been individually targeted in California waters. Instead, they are caught in the process of targeting other groundfish species with high market demand and value, such as sablefish. Despite being taken incidentally, the commercial fishing industry has utilized longnose skate rather than discarding at sea, often at substantially lower market value than other more lucrative and targeted groundfish species. In 2010 and 2011, the median price for longnose skate was \$0.40 per pound (\$ 0.18 per kilogram). In 2010, longnose skate total ex-vessel value was \$48,829, with an average price of \$0.16 per pound (\$0.07 per kilogram). In 2011, the total ex-vessel value was \$130,000 with an average price of \$0.34 per pound (\$0.15 per kilogram). The increase in ex-vessel value resulted from a combination of increased landings of longnose skate with a corresponding decline in the unspecified skate category, and likely changes in market demand.

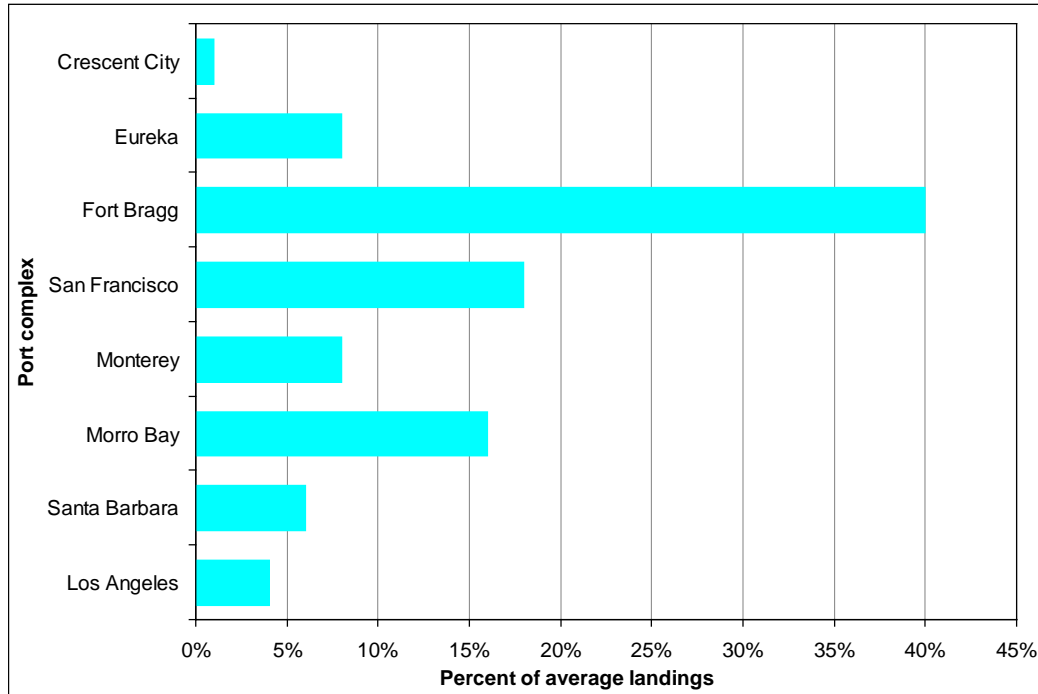


Figure 18-4. Skate average commercial landings by port, 2010-2011. Data source, CFIS data, all species and gear codes combined.

A recreational fishery for longnose skate does not exist in California. Anglers rarely fish at depths where longnose skate are likely to occur and, if encountered, their large wing span size would be a challenge for recreational anglers.

Status of the Biological Knowledge

The longnose skate is generally distinguishable from other skate species found in California because of a long and sharply pointed snout. It ranges from the southeastern Bering Sea to southern Baja California, Mexico. Although found over a wide range of habitats, they are most common over mixed cobble and sandy sediment on the sea floor, ranging from 164-656 feet in depth (50-200 meters). Very little information exists on the reproductive cycle of longnose skate. They are oviparous and egg cases are deposited onto the sea floor. Egg cases may be deposited on daily to weekly intervals for a period of several months or longer. Females grow larger than males and reach maturity around 28-39 inches (70-100 centimeters) while males reach maturity around 24-29 inches (62-74 centimeters). Longnose skate may live to at least 30 years and age at maturity can range from 5-14 years. They prey on smaller fishes, crustaceans, squid and octopus. They are preyed upon by larger marine mammals such as sea lions and sperm whales.

Status of the Population

In general, skates are vulnerable to overfishing due to sensitive life history parameters such as slow growth, late age maturation, low fecundity and relatively long life span

compared to other fishes. Because the cumulative landings equate to a significant fishery along the entire U.S. west coast, the first longnose skate stock assessment was conducted in 2008. The results revealed a healthy west coast stock estimated at 66 percent of the unfished spawning stock biomass. However, the assessment relied on critical assumptions regarding species composition of the skate catch in California, which resulted in uncertainty in the model. Future research was recommended in order to reduce uncertainty in the population model for successive stock assessments. Reducing uncertainty in the model will facilitate the development of effective management measures to maintain a sustainable population in the future.

Management Considerations

In 1982, big skate, California skate and longnose skate were adopted as part of the federal Pacific Coast Groundfish Fishery Management Plan (Groundfish FMP). These skate species were managed in the “Other Fish” complex, which is an aggregate of species that are un-assessed and generally considered underutilized. As a result of the healthy stock assessment outcome in 2008, adequate information was provided to set an optimum yield contribution for longnose skate of approximately 2.9 million pounds (1349 metric tons) to the “Other Fish” complex in 2009 and 2010. In addition, the Pacific Fishery Management Council (PFMC) decided on a mandatory sorting requirement for longnose skate beginning in 2009. The requirement was intended to provide more species-specific catch data to inform future stock assessments, which minimizes the need to take more precautionary management measures for the sake of protecting sensitive skate species. In addition, with the implementation of the Groundfish FMP’s Trawl Rationalization and Individual Fishing Quota Program in 2011, all trawl fishing has 100 percent observer coverage and greater catch accounting, assuring further catch accuracy for all skates. It will not be necessary to re-assess the stock for several years until sufficient new data can be collected to significantly inform the population model, due to the healthy outcome of the initial longnose skate assessment. The preliminary preferred Annual Catch Limit (formerly referred to as the optimum yield) for longnose skate was set at approximately 4.4 million pounds (2000 metric tons) for the 2011 and 2012 regulatory cycle and it was removed from the “Other Fish” complex to be separately managed.

Fish and Game Code Section 5508 requires that longnose skate be landed in the whole condition (the fish cannot be cut up). A conversion factor which calculates the weight of the whole fish based on the weight of the wings would need to be developed to remedy the necessity of landing longnose skate in whole condition. Until then, it is anticipated that the landings will continue to be determined by market conditions rather than regulatory obligations.

Further Reading

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Gertseva VV, Schirripa MJ. 2008. Status of the Longnose Skate (*Raja rhina*) off the continental U.S. Pacific Coast in 2007. 131 p. Available from: <http://www.pcouncil.org/groundfish/stock-assessments/>.

Love M. 2011. Certainly more than you want to know about the fishes of the Pacific coast. p 72. Santa Barbara, CA: Really Big Press.

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Skate commercial landings (pounds), 1990-2011.						
Year	Big skate	California skate	Longnose skate	Thornback skate	Unspecified skate	Total landings
1990					143,732	143,732
1991					113,144	113,144
1992					103,469	103,469
1993					78,070	78,070
1994		155			93,236	93,391
1995	230				413,048	413,278
1996				18	1,830,076	1,830,094
1997	534			70	2,964,740	2,965,344
1998	3,592			1,427	1,831,148	1,836,167
1999	1,257	141		24	1,867,897	1,869,319
2000	19	1,782			1,271,691	1,273,491
2001	1,540				1,409,386	1,410,925
2002					180,794	180,794
2003	90				275,362	275,452
2004		47		1	251,892	251,940
2005					210,418	210,418
2006				2	269,709	269,711
2007	12				250,334	250,346

Skate commercial landings (pounds), 1990-2011.						
Year	Big skate	California skate	Longnose skate	Thornback skate	Unspecified skate	Total landings
2008	167	26		479	391,649	392,321
2009	2,493		172,747	226	144,779	320,245
2010	2,399		312,288	871	52,742	368,300
2011	705	776	376,516	190	65,435	443,622

Data source: CFIS data, all gear types combined.

Skate commercial landings and value, 1990-2011.		
Year	Pounds	Value
1990	143,732	\$34,661
1991	113,144	\$32,419
1992	103,469	\$29,624
1993	78,070	\$21,814
1994	93,391	\$26,756
1995	413,278	\$88,452
1996	1,830,094	\$390,010
1997	2,965,179	\$557,836
1998	1,837,518	\$377,868
1999	1,872,075	\$286,439
2000	1,243,827	\$250,552
2001	1,399,493	\$289,377
2002	180,794	\$35,444
2003	275,469	\$62,088
2004	251,893	\$44,343
2005	209,266	\$39,337
2006	268,288	\$47,579
2007	247,495	\$54,015
2008	392,313	\$99,607
2009	320,245	\$57,853
2010	368,300	\$60,449
2011	444,350	\$148,416

Data source, CFIS data, all species and gear types combined.