

Spot Prawn (*Pandalus platyceros*)



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Life History

The largest shrimp of the [pandalid family](#), **Spot Prawns** are found along the west coast of North America from San Diego, CA to Alaska's Aleutian Islands. During 1999 to 2001, Spot Prawns were caught in experimental **fisheries** in Ensenada, Mexico, suggesting that their range may extend as far south as Punta Eugenia in central Baja California, Mexico. Spot Prawns are characterized by four distinct white spots on their **carapace** (body), a pair of spots behind their head, and a pair of spots in front of the tail. Spot Prawns typically inhabit **rocky habitats** (See Biology & Ecology – Ecosystems Where Fish Live) along the seafloor from the **intertidal zone** (See Biology & Ecology – Ecosystems Where Fish Live) to depths greater than 400 m (1,300 ft), but they can also be found among the **soft sediments** (See Biology & Ecology – Ecosystems Where Fish Live) of the seafloor. Spot Prawns may live up to 6 years, reaching lengths of 25 cm (9.8 in).

Spawning occurs annually in the late summer and early fall. Spot Prawn **larvae** (See Biology & Ecology) hatch during the late spring. The larvae go through five larval stages over 2-3 months before settling to the bottom at depths less than 55 m (180 ft). As they grow older they migrate into deeper waters, spending most of their adult life between 195 and 235 m (640-770 ft). During their lives, Spot Prawns go through 5 **life stages**. The species is a protandric hermaphrodite, meaning that they begin their lives as males and after reaching a certain age or size they change sex to be females. As males, Spot Prawns reach maturity during their second year and they will mate at least once. Then they will spend six months in a transition phase and by their third year, they will have fully transformed into females. As females they mate at least once in deep waters



Fishery Basics — California Fisheries

in the late summer, where they produce between 1,400 and 5,000 eggs. For 5 months the **ovigerous** (egg-carrying) females will carry the developing eggs under their tails until they are hatched in deep waters in the late spring. Females may reproduce a second time, but will only produce 1,000 eggs the second time.

Fishery History

Prawn fisheries began at many different times along the west coast of North America. The first commercial prawn **trap** (See Fishing Gear – Traps) fishery developed in British Columbia around 1914, but it did not become commercially significant until the mid 1970's. Similarly, a California Spot Prawn fishery was first established in Monterey in the 1930s when prawns were caught as incidental **bycatch** in octopus traps. The California Spot Prawn fishery existed as a minor fishery, with annual **landings** averaging around 0.9 t (2,000 lbs), until the early 1970s.

A commercial prawn fishery using **pots** (See Fishing Gear – Traps) has existed in Washington since the 1940s. Whereas, a **directed fishery** for Spot Prawns in Oregon was not established until 1993, when a California vessel came to Oregon and pioneered the fishery using trawling techniques. These techniques were similar to those that began the large-scale fishery in California when fishermen specifically targeted the species using **trawls** (See Fishing Gear – Trawl Nets). With trawls, 82 t (182,000 lbs) of Spot Prawn were caught in 1974 leading to an increase in landings over the next seven years as more fishermen entered this new fishery. The fishery reached its peak with more than 170 t (375,000 lbs) landed in 1981.

Due to a decrease in landings over the next few years a temporary closure of the California Spot Prawn trawl fishery was ordered by the [California Department of Fish and Game \(CDFG\)](#). Another closure in 1986 led to increased interests in a commercial trap fishery. Between 1985 and 1991 landings of Spot Prawns in the trap fishery increased from 4 to 112 t (8,800 to 247,000 lbs). A decline in landings soon followed and by 1994 both the trawl and trap fisheries faced **seasonal closures** and gear limitations. In addition, new restrictions were implemented for the trap fishery.

Although new restrictions were in place statewide, landings for both the trawl and trap fisheries almost doubled from 1994 to 1998, with landings reaching a historic high of 354 t (780,000 lbs). During this time the advent of **rockhopper** gear in the trawl fishery allowed fishermen to fish for Spot Prawns that were formerly inaccessible because the traditional trawling gear would be lost or damaged by the rocky bottoms. Increased market prices for live Spot Prawns, advancements in gear technologies, and increased fishing **efforts** by fishermen displaced from other fisheries, all contributed to a 21% decline in landings in 1999. Fishermen requested further regulations to address the decline in landings, which resulted in the implementation of a limited access plan. In 2003, California was the last state to phase out the use of trawls along the west coast for [Spot Prawn fishing](#).



Fishery Basics — California Fisheries

Current Fishery

The Spot Prawn fishery of California continues to be managed by the state. The fishery is composed of two trap fleets that operate from just north of Monterey Bay to southern California. The fishery operates under a [3 Tier permit system](#), which limits the number of vessels and the number of traps used by each vessel. In 2000, the CDFG adopted a statewide Spot Prawn fishery closure between November and January, which is the peak egg-bearing months, and a May to August closure for the trap fishery north of Point Arguello (south of Lompoc, CA).

Fewer than six vessels typically fish north of Point Arguello, and regional landings are significantly less than those of the southern California fishery.

Spot Prawn trap vessels range from 6 to 23 m (20-75 ft) in length. Trap designs are limited either to oval or rectangular-shaped traps. Normally, a fisherman will set multiple [trap strings](#) (See Fishing Gear – Traps), with 10 to 50 traps attached to a common groundline with anchors and a buoy at one end or both ends. Traps are set at depths of 122 to 305 m (400-1,000 ft) along [submarine canyons](#) (See Biology & Ecology – Ecosystems Where Fish Live) or along [shelf breaks](#) (See Biology & Ecology – Ecosystems Where Fish Live).

A recreational fishery exists for Spot Prawns. The recreational [bag limit](#) is 35 Spot Prawns per day. However, due to the depths that the traps must be set and the bag limit there is only minimal recreational fishing for Spot Prawns.

Current Challenges in Fishery

There are no current challenges facing the Spot Prawn fishery in California.

References

Alaska Fisheries Science Center. Pandalid shrimp species [Internet]. Seattle (WA): National Marine Fisheries Service; c2010 [cited 2011 May 15]. Available from: <http://www.afsc.noaa.gov/kodiak/photo/misshrimp.htm>

Bacher D. Commission finally shuts down spot prawn trawls [Internet]. Unknown: The Fishsniffer Online; c2003 [cited 2011 May 15]. Available from: <http://www.fishsniffer.com/dbachere/022103prawn.html>

California Department of Fish and Game: Marine Region [Internet]. Sacramento (CA): Department of Fish and Game; c2011 [cited 2011 May 12]. Available from: <http://www.dfg.ca.gov/marine/>



Fishery Basics — California Fisheries

California Fisheries Fund. California fisheries atlas. [Internet]. San Francisco: California Fisheries Fund; c2010. Spot prawn; 2010 [cited 2011 May 15]. Available from: http://www.californiafisheriesfund.org/reso_atlas_sprawn.html

Fisheries and Oceans Canada. Prawn fishery – pacific region [Internet]. Ottawa (ON): Fisheries and Oceans Canada; c2010 [cited 2011 May 15]. Available from: <http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/shellfish-mollusques/prawn-gcrevette/stage-etape-eng.htm>

Larson M. [Spot prawn](#). In: Leet W, Dewees C, Klingbeil R, Larson E, editors. California's living marine resources: a status report. Sacramento (CA): California Department of Fish and Game; 2001. p 121-123.

Larson M, Reilly P. [Spot prawn](#). In: Status of the Fisheries Report. Sacramento (CA): California Department of Fish and Game; 2007.

Lowry N. [Biology and fisheries for the spot prawn \[doctoral thesis\]](#). Seattle: University of Washington; 2007.

Mormorunni C. [The spot prawn fishery: a status report](#). Report. Seattle (WA): Asia Pacific Environmental Exchange; 2001.

Seafood Watch (US). [Wild-caught coldwater shrimp](#). Report. Monterey (CA): Monterey Bay Aquarium; 2008.