



## LINGCOD (*Ophiodon elongatus*)



### OVERVIEW

- **Oregon Conservation Strategy Species**
- **Size:** Up to 60 inches long
- **Weight:** Up to 82.6 pounds
- **Lifespan:** Up to at least 36 years
- **Key Strategy Habitats:** Nearshore, Estuaries
- **Similar Species:** None. While Lingcod are in the same family of fish as Kelp Greenling and Painted Greenling, they are quite different in both appearance and behavior than these two species.

### FISHING TIPS

- Start in the morning.
- Target rocky reef areas.
- Drop your hook to the bottom, then reel up slightly.
- A variety of lures and flies work well.
- Remember to check the fishing regulations for the area before you go and be sure you have your fishing license.

Lingcod have elongated bodies. They have large mouths full of long sharp teeth. Lingcod come in a variety of colors from black to brown to blue usually with dark spots and mottling on their sides. Yellow or orange spots are a common feature. These fish are targeted by both recreational and commercial fishermen. Some of those caught commercially supply the live-fish market. Stock assessment models indicate that there are two stocks, a northern stock and a southern stock, but the models have used different boundaries for the two stocks over the years. Both stocks were overfished, but both have rebounded, although to differing degrees.

### FUN FACTS

#### **Favorite Food:** Fishes.

- Females generally grow larger than males.
- Males move into spawning areas before females to set up territories and may use the same territory for years.
- Various fish markets have sold blue colored Lingcod fillets at premium prices.
- Lingcod caught in commercial fisheries are sometime sold live.
- “Hitchhiking” Lingcod are occasionally encountered while bottomfishing. The Lingcod will grab a fish that is already hooked, not let go, and ride it all the way to the surface.



# LINGCOD (*Ophiodon elongatus*)

## RANGE AND DISTRIBUTION

**In Oregon:** Lingcod can be found throughout the state's marine waters and in estuaries.

**Everywhere Else:** Lingcod range from the southwest Gulf of Alaska to central Baja. They are more common and abundant from Kodiak Island, Alaska to central Baja.

## LIFE HISTORY AND ECOLOGY

Males move in to nesting areas prior to the spawning season and set up territories before females arrive. They may use the same area for years and it may be from the intertidal zone out to about 320 feet. Nests are typically in rocky habitats often in crevices or under ledges, but sometimes on exposed surfaces. Females lay large masses of sticky eggs that can weigh over 30 pounds and be the size of a watermelon. They may lay between 97,000 and 490,000 eggs all at once each season. Larger, older females lay larger egg masses and they lay them earlier than younger smaller females. Males may guard several masses of eggs in the nest area until they hatch but females usually leave the nest area after depositing eggs. Males don't appear to eat while they are guarding the eggs. Not all males guard nests, some are "sneakers" that simply come in and deliver sperm then move out of the area. The young that hatch from an egg mass may have up to 5 different fathers.

The eggs develop and hatch more quickly in warmer than in colder water. For example, they take about 24 days to hatch in 57° F water and about twice as long in 46° water. All eggs in a batch hatch within a week of each other. The larvae that hatch live in the water column and turn into pelagic juveniles. Young Lingcod spend about 3 months in the water column before they settle to the bottom at about 3 inches in length usually between April and June. They often settle on sandy bottoms with some shells, ripples or small pebbles, but tend to move to a little more complex bottoms with small rocks or eelgrass within a few months. Larger fish tend to be found in rocky habitat or on nearby soft bottom habitat. Lingcod mature between about 2 and 9 years old and can live to at least 36 years. Although they can live in depths as great as about 1,560 feet, they move to waters generally less than about 320 feet for spawning. Tagging studies suggest that other than the seasonal inshore offshore movements for spawning, Lingcod generally don't tend to travel great distances.

There is evidence of both life history and genetic differences in Lingcod from the northern and southern parts of their range. The Lingcod in the colder northern waters grow larger, mature at larger sizes, live longer and have lower natural mortality rates than those found in the warmer southern waters. Similarly, genetic differences, thought to be confined to a single chromosome, were found in Lingcod from northern and southern portions of their range, with a large proportion Lingcod in the central portion were found to have a mix of the genetic markers found the northern and southern areas. Regional diet differences between Lingcod sampled from northern waters and southern waters were also found to occur. Lingcod in southern water ate more cephalopods (squid and octopus) while those in northern



## LINGCOD (*Ophiodon elongatus*)

waters ate more fish. Females grow to larger sizes than males and this is true in all locations that Lingcod were sampled.

While most Lingcod are brownish in color with white flesh, about 20 percent have blueish color that is visible both in the live fish and in the flesh of these fish. There has been much speculation as to why this occurs, but the reason(s) for these blue color morphs remains unclear.

Known predators of Lingcod include several rockfish species such as Black, Canary, and Copper Rockfish; Chinook and Coho Salmon; Spiny Dogfish; White Sharks; Steller Sea Lions; Harbor Seals; Common Murres; Bald Eagles; and many other species many of which eat only the juveniles. Humans also eat Lingcod. There is a long history of use by Native Americans and they are caught in both recreational and commercial fisheries.

### DIET AND FORAGING

Lingcod eat mainly fish and cephalopods as adults. Pelagic juveniles eat krill and small fish.

### HABITAT CHARACTERISTICS

Adult Lingcod live on or near the bottom in rocky habitats but are also found on nearby soft bottom habitats. Young Lingcod also prefer structured habitat near the bottom. They are found both in the ocean waters and in estuaries.

### CONSERVATION AND MANAGEMENT

**Threats:** Lingcod were declared overfished in 1999. They experienced heavy fishing pressure in the 1980s and 1990s.

**Conservation and management:** Lingcod are included in the federal Pacific Coast Groundfish Fishery Management Plan administered by the Pacific Fishery Management Council (PFMC). The Oregon Department of Fish and Wildlife works in concert with PFMC and manages fisheries within state waters. The Pacific Fishery Management Council conducts stock assessments for this species. The management goal is to ensure that fisheries for this species are sustainably managed. Lingcod was declared rebuilt in 2005; recovering much more quickly than anticipated. The quick recovery was attributed to a combination of enactment of a rebuilding plan and favorable ocean conditions for recruitment. There is an extensive list of research recommendations that include: fishery-independent surveys of untrawlable rocky habitat where Lingcod live to provide better information about abundance and distribution; defining stock structure; and age validation for Lingcod aging techniques.



# LINGCOD (*Ophiodon elongatus*)

## REFERENCES

- Brown, B. 2021. Geographic and ontogenetic variation in the trophic ecology of Lingcod (*Ophiodon elongatus*) along the U.S. West Coast. Master's Thesis at San Jose State University.  
[https://scholarworks.sjsu.edu/etd\\_theses/5173](https://scholarworks.sjsu.edu/etd_theses/5173)
- DeMott, G. E. 1983. Movement of tagged lingcod and rockfishes off Depoe Bay, Oregon. Master's Thesis available at Oregon State University Libraries.
- Lam, L. B. L. Basnett, M. A. Haltuch, J. Cope, K. Andrews, K. M. Nichols, G. C. Longo, J. F. Samhuri, and S. L. Hamilton. Geographic variability in lingcod *Ophiodon elongatus* life history and demography along the US West Coast: oceanographic drivers and management implications. Marine Ecology Progress Series 670:203-222.
- Longo, G. C., L. Lam, B. Basnett, J. Samhuri, S. Hamilton, K. Andres, G. Williams, G. Goetz, M. McClure, and K. M. Nichols. Strong population differentiation in lingcod (*Ophiodon elongatus*) is driven by a small portion of the genome. Evolutionary Applications DOI: 10.1111/eva.13037.
- Love, M. S. 2011. Certainly more than you want to know about the fishes of the Pacific Coast. A postmodern experience. Really Big Press, Santa Barbary, CA.  
<https://www.pcouncil.org/groundfish/safe-documents/>  
<https://www.pcouncil.org/groundfish/stock-assessments/>  
<https://www.pcouncil.org/groundfish/fishery-management-plan/>  
[https://www.dfw.state.or.us/MRP/finfish/groundfish\\_sport/index.asp](https://www.dfw.state.or.us/MRP/finfish/groundfish_sport/index.asp)
- Tushingham, S. and C. Christiansen, 2015. Native American fisheries of the northwestern California and southwestern Oregon Coast: A synthesis of fish-bone data and implications for Late Holocene storage and socio-economic organization. Journal of California and Great Basin Anthropology 35(2):189-215
- Petrie, M. E. and C. H. Ryer. 2006. Laboratory and field evidence for structural habitat affinity of young-of-the-year lingcod. Transactions of the American Fisheries Society 135:1622-1630.
- Wood, C. L., K. L. Leslie, A. Greene, L. S. Lam, B. Basnett, S. L. Hamilton, and J. F. Samhuri. 2021. The weaker sex: Male lingcod (*Ophiodon elongatus*) with blue color polymorphism and more burdened by parasites than are other sex-color combinations. PLoS ONE One: 16(12):30261202.  
<https://doi.org/10.1371/journal.pone.0261202>