

# Surfperches

## General

The surfperches, family Embiotocidae, are a small abundant assemblage of 23 species found predominantly in temperate eastern North Pacific waters, two which are found in the Sea of Japan. Nineteen of the 20 species found in California occur in inshore coastal waters. Tuleperch (*Hysterocarpus traski*) occupies freshwater and estuarine habitats. Collectively, the 19 marine species are found in a variety of habitats, including beaches, rocky substrate, intertidal and subtidal kelp beds. A few species inhabit several of the habitat types. Included in this group are the pile perch (*Rhacochilus vacca*), rubberlip surfperch (*Rhacochilus toxotes*), shiner perch (*Cymatogaster aggregata*), walleye surfperch (*Hyperprosopon argenteum*), and the white surfperch (*Phanerodon furcatus*). The majority of surfperches occupy only one type of habitat. Species most commonly found along beaches include the barred surfperch (*Amphistichus argenteus*), calico surfperch (*Amphistichus koelzi*), redbtail surfperch (*Amphistichus rhodoterus*), silver surfperch (*Hyperprosopon ellipticum*), and the spotfin surfperch (*Hyperprosopon anale*). Black perch (*Embiotoca jacksoni*), dwarf perch (*Micrometrus minimus*), kelp perch (*Brachyistius frenatus*), rainbow perch (*Hypsurus caryi*), reef perch (*Micrometrus aurora*), sharpnose seaperch (*Phanerodon atripes*), and striped seaperch (*Embiotoca lateralis*) tend to be associated with rocky substrate and kelp beds. The pink seaperch (*Zalem-bius rosaceus*) inhabits deep water and is seldom taken in the sport catch.

The surfperch fishery in California includes both sport and commercial components. The sport fishery is enjoyed by anglers of all ages who fish for surfperch from piers, jetties, sandy beaches, and boats. The recreational catch of surfperch for 1999 totaled 489,000 fish, with the majority being caught in central and northern California. The average sport catch for 1993 through 1999 was 864,000 fish with a high of 1,119,000 fish in 1998.

Surfperch are easy to catch, which makes them highly sought. They can be caught using light gear and a variety of baits such as clams, tubeworms, or sand crabs. A spinning or casting outfit using 10 to 15 pound test monofila-

ment line, and a standard two-hook surf leader with size six hooks, is ideal for shore based surfperch fishing.

Annual commercial landings of surfperches have also been highly variable. While the market for fresh "perch" fillets is relatively small, the total catch for the fishery was 49,000 pounds in 1999. The California Department of Fish and Game did not distinguish between species in their statistics until 1987, simply listing the category as surfperch. Currently, there is a large commercial fishery for various surfperches in the southern part of the state and a moderate fishery focusing on redbtail surfperch in northern California.

Surfperches can be identified by their elliptical, compressed body form and forked tail. Most are marked with bars or stripes. They have a continuous dorsal fin with nine to 11 spines and 19-28 soft rays. The anal fin has three spines with 15-35 soft rays.

The diet of surfperches consists of isopods (e.g., rock lice) of all sizes, and gastropod mollusks (e.g., snails); various amphipods (e.g., skeleton shrimp), polychaete worms, brittle stars, and small crabs, also are included. Surfperches are usually bottom grazers, but apparently will feed midwater when competitors are absent.

Surfperch reproduction is viviparous, their young being highly developed and free swimming at birth. Newborn males of a few species are reproductively mature.

Much information is lacking on this group. Although the taxonomy has been recently refined, life history and habitat requirements are areas in need of more research.

## Barred Surfperch

### History of the Fishery

The commercial fishery for barred surfperch is minor compared to the sport fishery. Its popularity as a sport fish stems from abundant numbers and accessibility. The average catch for the 1993-1999 period was 176,000 fish in southern California, and 202,000 fish in the remainder of the state. In the southern California sport fishery for barred surfperch, 99 percent were caught from beaches and jetties. Similarly, 99 percent of central and northern California's catch also came from shore. The best months for fishing are December, January, and February with the majority of large individuals being gravid females. Sand crabs are the best bait for barred surfperch, especially female sand crabs carrying orange colored eggs. Small jigs and spinners also work well. Although barred surfperch are excellent sport fish for the light tackle angler, they are sometimes considered a pest to anglers pursuing other fish such as California halibut or corbina.



Barred Surfperch, *Amphistichus argenteus*  
Credit: DFG

### Status of Biological Knowledge

Barred surfperch have eight to 10 rust-colored, irregular bars on their sides with spots in between. The background color is usually silver or white, and the back can take on a blue or grayish coloration. Similar species are the calico surfperch and the redbtail surfperch, but the barred surfperch can be distinguished from the redbtail and calico because it lacks red coloration in its fins.

Barred surfperch are found in small schools along sandy beaches and near jetties, piers, and other sources of food and cover. They range from Bodega Bay in northern California to north central Baja California. While the majority are found in the surf zone, some have been caught in water as deep as 240 feet. The largest individual ever taken was a female that weighed 4.5 pounds and was 17 inches in length. Most fish are in the one- to two-pound range and are highly prized by anglers.

Barred surfperch mate during the fall and winter months, and young are released during spring and summer. Males and females both darken considerably during courtship, and males make "figure-eights" around females before mating. A female can produce from four to 113 young, depending on her size. Females undergo a five-month gestation period, and juveniles are born at about 1.75 inches in length. Juveniles are miniature replicas of the parents and are independent at birth. The young usually live relatively close to where they were born.

### Status of the Population

During the last seven years, the sport fishery in southern California has yielded up to 306,000 barred surfperch (1998), while central and northern California together produced upwards of 252,000 fish annually. No estimates have been made of the size or current status of the barred surfperch population.

## Calico Surfperch

### History of the Fishery

The calico surfperch is of moderate sport value along the California coast. Due to its striking similarity and frequent misidentification with the redbtail surfperch, calico surfperch, until recently, have been considered of minor importance in the sport catch. The mean sport catch from 1993-1999 was 16,000 fish. There is no targeted commercial catch but small numbers are taken in the directed redbtail surfperch fishery. The calico fishery has historically included fishing from piers, sandy beaches, and skiffs.

### Status of Biological Knowledge

The calico surfperch can be identified by its silvery surface, which is covered by olive-green mottling and broken bars down each side. The calico reaches a length of 12 inches and rarely weighs more than one pound.

The range of the calico surfperch is from north central Washington to northern Baja California. The primary habitat of the calico is sandy beaches, although they can occasionally be found over rocky substrate. The vertical distribution of the calico includes depths from the surface down to 30 feet.



Calico Surfperch, *Amphistichus koelzi*  
Credit: DFG

### Status of the Population

At this time, little information is available on the population status of the calico surfperch.

## Pile Perch

### History of the Fishery

Pile perch sustain a limited commercial fishery in Del Mar, California, and Papalote Bay, Baja California, but do not contribute substantially to annual commercial landings in the state.

They are of interest as a sport fish throughout the state, with an average of 16,000 perch caught between 1993 and 1999. Many are caught from piers, jetties, beaches, or skiffs. Pile perch may be caught year-round on any number of popular baits, including clams, sand shrimps, and worms.

### Status of Biological Knowledge

Pile perch can be identified by the silvery sides with a dark vertical bar about midbody, and a unique dorsal fin with the first few soft dorsal rays longer than any of the others, giving the fin a peaked appearance. They are equipped with strong, well-developed teeth, enabling them to feed on hard shelled mollusks, crabs, and other



Pile Perch, *Rhacochilus vacca*  
Credit: DFG

crustaceans. Their specialized dentation differs enough from rubberlip surfperch to convince some ichthyologists to place them in their own genus (*Damalichthys*).

Pile perch are found between southeastern Alaska and northern Baja California, including Guadalupe Island. They usually live along rocky shores, from the surface down to 150 feet, and grow to around 17.5 inches in length.

Fecundity increases with age and size of the females. Average fecundity at first reproduction is 11.7 young, and sometimes exceeds 60 in older females. Adult longevity of pile surfperch is seven to 10 years.

#### Status of the Population

Because accurate landings data for pile perch are lacking, little can be concluded about the current population status in California.

### Redtail Surfperch

#### History of the Fishery

Redtail surfperch sustain a sport fishery from central California to Vancouver Island, British Columbia. They support a commercial fishery only in northern California, especially in the inshore waters of the Eureka/Crescent City area where over 99 percent of the catch is taken. These fish are taken primarily from sandy beaches or the mouths of rivers and streams entering the sea, but also can be caught from jetties and piers inside harbors and bays. Humboldt and Del Norte counties in northern California are the primary locations of the winter redtail commercial fishery. Fishing is mostly from open beaches using hook-and-line gear. The best catches are in March and April when the fish are concentrated for spawning. Commercial fishing is closed from May 1 to July 15. The annual commercial harvest averaged 37,000 pounds over the last 10 years, with a high catch in 1990 in excess of 62,000 pounds and a low catch of around 27,000 pounds in 1998.

Sport fishing for redbails occurs in the same areas where they are commercially taken. They are taken year-round by hook-and-line, but are usually targeted during the

spawning season. The sport catch since 1993 has ranged from a low of 10,000 fish in 1998, to a high of 56,000 in 1994.

#### Status of Biological Knowledge

Redtail surfperch are distinguished by the nine or ten vertical, orange-to-brassy bars alternating at the lateral line and the light red pelvic, anal, and caudal fins. The body is moderately deep and laterally compressed, with a light green back and silver sides and belly. During the 1990s, adult female redtail averaged 10.5 inches and weighed 1.1 pounds, while the males averaged 9.8 inches and weighed 0.8 pounds. The largest recorded California redtail was a female that was 16.5 inches long and weighed 3.7 pounds. The largest recorded individual was 16.5 inches long and weighed 3.7 pounds. Females produce eight to 45 young about one year after fertilization, sometime between May and August.

Redtail surfperch are found from Vancouver Island, Canada, to Monterey Bay, California, but the fishery is centered north of the San Francisco Bay area.

#### Status of the Population

There are no estimates of the size of the redtail surfperch stocks in California coastal waters. The commercial catch averaged 50,000 pounds during the 1970s, 48,000 pounds during the 1980s and 38,000 pounds during the 1990s, which suggests a decreasing population. Another indicator of problems with the population is the decrease in weight from an average per fish weight of 1.8 pounds during the late 1950s and early 1960s, to 0.9 pounds during the 1990s.



Redtail Surfperch, *Amphistichus rhodoterus*  
Credit: DFG

## Rubberlip Surfperch

### History of the Fishery

The rubberlip surfperch is one of the many important surfperch sport fish along the California coast. It is caught along jetties and piers, and also taken by skiff anglers nearshore or in kelp beds. The sport catch over the last seven years ranged from 13,000 fish in 1993 to 44,000 fish in 1997 with an average of 19,000. The commercial fishery is very small with landings of less than 1,000 pounds annually from southern California.

### Status of Biological Knowledge

The large, thick lips of the rubberlip distinguish it from other surfperches. Its coloration varies from olive-to brassy-brown on the sides, with one or two dusky bars on adult fish. The pectoral fins are yellow to orange, and the pelvic fins are usually black. The maximum length of rubberlip seaperch is 18.5 inches, making the rubberlip the largest of the surfperches.

Rubberlip surfperch are found from Russian Gulch State Beach (Mendocino County), California, to central Baja California, including Guadalupe Island. These fish range from inshore waters to depths of 150 feet.

Although no data have been collected on age at sexual maturity, gravid rubberlip surfperch have been caught from April to June. Time of birth is estimated to be midsummer.



Rubberlip Surfperch, *Rhacochilus toxotes*  
Credit: DFG

### Status of the Population

No recent estimates have been made of the rubberlip perch population its size is unknown at this time.

## Striped Seaperch

### History of the Fishery

Striped seaperch is one of the eight to 10 species that make up the small commercial "perch" fishery. However, it is a minor component when compared to such species as the barred surfperch. Conversely, striped seaperch do

comprise a substantial portion of the state's sport fishery. The mean take of striped seaperch for the last seven years was 65,000 fish, almost wholly from central and northern California. These perch are easily taken from piers, jetties, beaches, and skiffs, and are favorites of anglers due to their beautiful coloration.



Striped Seaperch, *Embiotoca lateralis*  
Credit: DFG

### Status of Biological Knowledge

Striped seaperch can be easily identified by the red, blue, and yellow lines that run laterally along the length of the body. Maximum length is 15 inches. These fish are sexually mature in their third year of life and produce about 18 young per female. At age seven, the average number of young produced per female is 32. The maximum life expectancy for this fish is approximately 10 years.

Striped seaperch are found from southeastern Alaska to northern Baja California.

### Status of Population

Population estimates of striped seaperch have not been made, but recent landing figures indicate that this species should be able to sustain a healthy sport catch.

## Walleye Surfperch

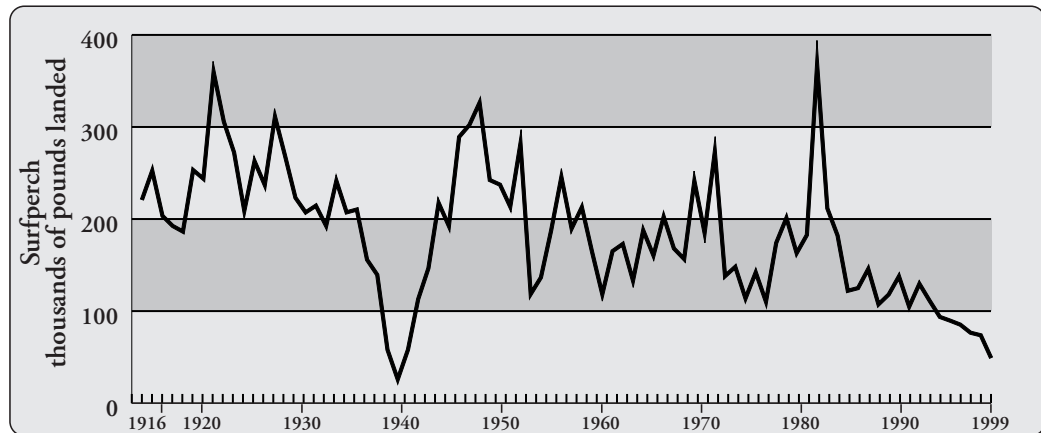
### History of the Fishery

Sport anglers enjoy fishing for walleyes. In 1993, anglers caught 164,000 individuals, well over 90 percent being caught from shore, jetties, and piers. Walleyes can be taken on sand crabs and other invertebrates, as well as on small spinners and jigs. They are excellent to eat.

### Status of Biological Knowledge

Walleye surfperch are silver to bluish above, with very faint pink bars that fade quickly after death. Most notable are the large eyes and black tipped pelvic fins. Similar species are the spotfin surfperch and the silver surfperch. However, the spotfin has black spots on its dorsal and anal fins, while the silver lacks any black coloration.

**Commercial Landings  
1916-1999, Surfperches**  
Data Source: DFG Catch  
Bulletins and commercial  
landing receipts.



Walleye surfperch are found in large schools along sandy beaches, jetties, kelp beds, and other habitats with rich invertebrate life. They range from Vancouver Island, British Columbia, to central Baja California, including Guadalupe Island. They reach a length of 12 inches and are found to depth of 60 feet.

Walleye surfperch mate from November to December and, after a five-month gestation period, give birth in mid-April. Males engage in an aggressive "swooping" courtship before mating. Females, depending on size, will have five to 12 young that are about 1.5 inches at birth. The young are miniature replicas of the parent and mature the fall or winter following their birth.

#### Status of the Population

The recent sport take has averaged 112,000 fish per year. However, the total stock size is unknown at this time.

### Surfperch: Discussion

Surfperches are important both commercially and as sport fish. Most of the California coastal species are taken in the sport catch and the majority of the catch is taken when spawning aggregations are present. Female surfperches are intentionally targeted by sport anglers because they are larger than males. Sport anglers also grade their catch, which probably results in an even greater take of mature females with a resulting decline in the fishery. The redbtail and barred surfperches are the most notable in the commercial catch and may be important to local economies. Total commercial surfperch landings have fluctuated over the years, but over the long-term have declined by 25 percent since the 1950s. Recent research has indicated that some of the decline is associated with the increases in water temperature.

Surfperch habitats have been, and will continue to be, areas of conflict. As humans develop the shoreline, areas inhabited by surfperches may become polluted or destroyed. Although surfperches may adapt to structures such as jetties and piers, it should not be assumed that they can continue to adapt to all the changes that are forced upon them.

Action is needed if surfperch populations are to be restored.

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