



**BATIQUITOS LAGOON  
FOUNDATION**

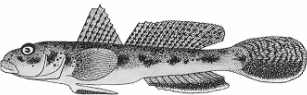
ANCHOVY



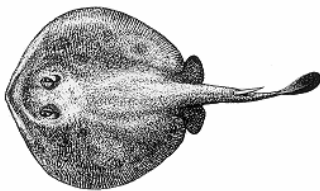
TOPSMELT



YELLOWFIN GOBY



ROUND STINGRAY



CALIFORNIA KILLIFISH



PIPEFISH



# FISH

## Fishes of the Lagoon

There were only a few species of fish in Batiquitos Lagoon (just five!) before it was opened to the ocean and tides at the end of 1996. High temperatures in the summer, low oxygen levels, and wide ranges of salinity did not allow the ecosystem to flourish. Since the restoration of tidal action to the lagoon, the fish populations have significantly increased in numbers and diversity and more than sixty-five species have been found. Lagoons serve as breeding and nursery areas for a wide array of coastal fish, provide habitat and food for resident species and serve as feeding areas for seasonal species.

Different areas of the lagoon environment provide specific habitat needs. These include tidal creeks, sandy bottoms, emergent vegetation, submergent vegetation, nearshore shallows, open water, saline pools and brackish/freshwater areas. These habitats are defined by water characteristics including salinity, water temperature, water velocity and water depth. The lagoon bottom varies with the type of substrate such as rock, cobble, gravel, sand, clay, mud and silt.

**Tidal creeks** and channels provide refuges for small fish species and for eggs and larvae of larger fish. Species in tidal creeks include gobies and topsmelt.

**Sandy bottoms** provide important habitat for bottom-dwelling fish species such as rays, sharks and flatfish. The sandy areas provide important refuges for crustaceans, which are prey to many fish species within the lagoon. The burrows of ghost shrimp are utilized by the arrow goby.

**Emergent vegetation** (vegetation that grows in water but emerges above it) provides habitat and refuge for many small species of fish. These include some gobies and the California killifish.

**Submergent vegetation** (vegetation which is completely underwater), such as eelgrass, occurs in many of the coastal environments of the region. Eelgrass often forms a productive refuge used by most of the small fish species. Dominant species include members of the pipefish and goby families and the California killifish, Pacific staghorn sculpin and mullet. Often the bottom feeding mullet is seen jumping out of the water to clear its gills of algae and bacteria (“blowing its nose”).

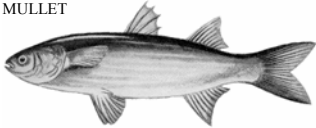
CALIFORNIA HALIBUT



C-O TURBOT



STRIPED MULLET



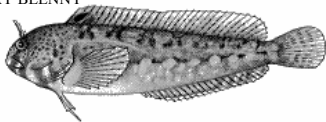
LEOPARD SHARK



WHITE SEABASS



BAY BLENNY



CALIFORNIA GRUNION



**Nearshore shallow water** is very important for the larvae and juveniles of many of the species that use bays, lagoons and estuaries as nurseries. Important species include the California halibut, diamond turbot, sardines and croakers. Transient species from intertidal and nearshore soft bottom habitats will use the lagoon in spring and summer. They usually enter the lagoon as either eggs or larvae or as juveniles or adults seeking habitat and food. Seasonal species include sunperch, anchovies, croakers, stingrays and halibut.

**Open water** provides habitat for anchovies, sardines, topsmelt and striped mullet. Open water is often a permanent feature of embayments which have uninterrupted tidal exchange.

**Saline pools** and increased salinity occur in areas subject to reduced tidal circulation. Saline pools provide habitat for only the most salt tolerant species of fish including topsmelt and killifish.

**Brackish and freshwater habitats** contain fish species that can tolerate or prefer low salinity. These species include the tidewater goby, topsmelt, and striped mullet. Some introduced fish species found in these areas include mosquito fish, fat head minnow, largemouth bass, bluegill, catfish, bullhead and common carp.

The fishes in the lagoon are part of a food web: most eat other lagoon animals and plants (worms, shrimp, clams, crabs, algae, plant or animal plankton, smaller fish, etc.), and some are eaten by other lagoon creatures (for example, Great Blue Herons and other fisher birds eat various kinds of surfperch and Pacific staghorn sculpins).

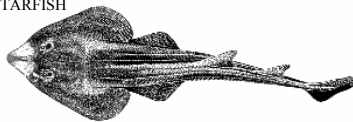
SHINER SURFPERCH



KELP BASS



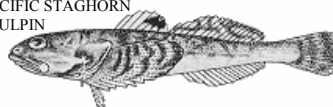
SHOVELNOSED GUITARFISH



PACIFIC HERRING



PACIFIC STAGHORN SCULPIN



GIANT KELPFISH

