

= California sea lion =

The California sea lion (*Zalophus californianus*) is a coastal eared seal native to western North America . It is one of five species of sea lion . Its natural habitat ranges from southeast Alaska to central Mexico , including the Gulf of California . Sea lions are sexually dimorphic , males are larger than females , and have a thicker neck and protruding crest . They mainly haul out on sandy or rocky beaches , but they also frequent manmade environments such as marinas and wharves . Sea lions feed on a number of species of fish and squid , and are preyed on by Orcas and white sharks .

California sea lions have a polygynous breeding pattern . From May to August , males establish territories and try to attract females with which to mate . Females are free to move in between territories , and are not coerced by males . Mothers nurse their pups in between foraging trips . Sea lions communicate with numerous vocalizations , notably with barks and mother - pup contact calls . Outside of their breeding season , sea lions spend much of their time at sea , but they come to shore to molt .

Sea lions are particularly intelligent , can be trained to perform various tasks and display limited fear of humans if accustomed to them . Because of this , California sea lions are a popular choice for public display in zoos , circuses and oceanariums , and are trained by the United States Navy for certain military operations . The International Union for Conservation of Nature (IUCN) lists the species as Least Concern due to its abundance . Predation by California sea lions on threatened or endangered salmon species at Bonneville Dam has resulted in more than 50 of them being killed by state officials .

= = Taxonomy = =

The California sea lion was described by René Primevère Lesson , a French naturalist , in 1828 . It is grouped with other sea lions and fur seals in the family Otariidae . Otariids , also known as eared seals , differ from true seals in having external ear flaps , and proportionately larger foreflippers and pectoral muscles . Along with the Galapagos sea lion and the extinct Japanese sea lion , the California sea lion belongs to the genus *Zalophus* , which derives from the Greek words *za* , meaning " intensive , " and *lophus* , meaning " crest . " This refers to the protruding sagittal crest of the males , which distinguishes members of the genus .

Traditionally , the Galapagos sea lion and Japanese sea lion were classified as subspecies of the California sea lion . However , a genetic study in 2007 found that all three are in fact separate species . The lineages of the California and Japanese sea lion appear to have split off 2 - 2 million years ago during the Pliocene . The California sea lion differs from the Galapagos sea lion in its greater sexual dimorphism . The Steller sea lion is the closest extant relative of the *Zalophus* sea lions , being a sister taxon .

= = Appearance , physiology , and movement = =

Being sexually dimorphic , California sea lions differ in size , shape , and coloration between the sexes . Males are typically around 2 - 4 m (7 - 9 ft) long and weigh up to 350 kg (770 lb) , while females are typically around 1 - 2 m (5 - 9 ft) and weigh up to 100 kg (220 lb) . Females and juveniles have a tawny brown pelage , although they may be temporarily light gray or silver after molting . The pelage of adult males can be anywhere from light brown to black , but is typically dark brown . The face of adult males may also be light tan in some areas . Pups have a black or dark brown pelage at birth . Although the species has a slender build , adult males have robust necks , chests , and shoulders . Adult males also have a protruding crest which gives them a " high , domed forehead " ; it is tufted with white hairs . They also have manes , which are less developed than those of adult male South American and Steller sea lions . Both sexes have long , narrow muzzles .

As an otariid , the California sea lion relies on its foreflippers to propel itself when swimming . This

form of aquatic locomotion , along with its streamlined body , effectively reduces drag underwater . Its foreflipper movement is not continuous ; the animal glides in between each stroke . The flexibility of its spine allows the sea lion to bend its neck backwards far enough to reach its hindflippers . This allows the animal to make dorsal turns and maintain a streamlined posture . When moving on land , the sea lion is able to turn its hindflippers forward and walk on all fours . It moves the foreflippers in a transverse , rather than a sagittal , fashion . In addition , it relies on movements of its head and neck more than its hindflippers for terrestrial locomotion . Sea lions may travel at speeds of around 10 @. @ 8 km / h (6 @. @ 7 mph) , and can dive at depths of 274 m (899 ft) and for up to 9 @. @ 9 minutes , though most dives are typically 80 m (260 ft) and last less than 3 minutes .

Sea lions have color vision , though it is limited to the blue @-@ green area of the color spectrum . This is likely an adaptation for living in marine coastal habitats . Sea lions have fairly acute underwater hearing , with a hearing range of 0 @. @ 4 ? 32 kHz . Sea lions rely on their whiskers or vibrissae for touch and detection of vibrations underwater . Compared to the harbor seal , the California sea lion 's vibrissae are smoother and less specialized and thus perform less well when following hydrodynamic trails , although they still perform well .

= = Ecology = =

= = = Range and habitat = = =

The California sea lion ranges along the western coast and islands of North America , from southeast Alaska to central Mexico . Mitochondrial DNA sequences in 2009 have identified five distinct California sea lion populations : the U.S. or Pacific Temperate stock , the Western Baja California or Pacific Tropical stock , and the Southern , Central , and Northern Gulf of California stocks . The U.S. stock breeds mainly in the Channel Islands , although some breeding sites may be established in northern California , and females are now commonly found there . The Western Baja California stock mainly breeds near Punta Eugenia and at Isla Santa Margarita . The above @-@ mentioned stocks are separated by the Ensenada Front . The stocks of the Gulf of California live in the shallow waters of the north (Northern stock) , the tidal islands near the center (Central stock) , and the mouth of the bay (Southern stock) . The stock status of the sea lions at the deep waters of the central bay has not been analyzed .

During the breeding season , sea lions gather on both sandy and rocky shores . On warm days , they lie closer to the water . At night or in cool weather , they travel farther inland or to higher elevations . Non @-@ breeding individuals may gather at marinas , wharves , or even navigational buoys . California sea lions can also live in fresh water for periods of time , such as near the Bonneville Dam in the Columbia River . In 2004 a healthy sea lion was found sitting on a road in Merced County , California , almost a hundred miles upstream from the San Francisco Bay and half a mile from the San Joaquin River .

= = = Diet and predation = = =

California sea lions feed on a wide variety of seafood , mainly squid and fish , and sometimes clams . Commonly eaten fish and squid species include salmon , hake , Pacific whiting , anchovy , herring , rockfish , lamprey , dogfish , and market squid . They mostly forage near mainland coastlines , the continental shelf , and seamounts . They may also search along the ocean bottom . California sea lions may eat alone or in small to large groups , depending on the amount of food available . They sometimes cooperate with other predators , such as dolphins , porpoises , and seabirds , when hunting large schools of fish . Sea lions sometimes follow dolphins and exploit their hunting efforts . Adult females feed between 10 ? 100 km (6 @. @ 2 ? 62 @. @ 1 mi) from shore . Males may forage as far as 450 km (280 mi) from shore when water temperatures rise . They also have learned to feed on steelhead and salmon below fish ladders at Bonneville Dam and at other locations where fish must queue in order to pass through dams and locks that block their passage .

Sea lions are preyed on by killer whales and large sharks . At Monterey Bay , California sea lions appear to be the more common food items for transient mammal @-@ eating killer whale pods . The sea lions may respond to the dorsal fin of a killer whale and remain vigilant , even when encountering resident fish @-@ eating pods . Sea lions are also common prey for white sharks . They have been found with scars made by attacks from both white sharks and shortfin mako sharks . Sharks attack sea lions by ambushing them while they are resting at the surface . Sea lions that are attacked in the hindquarters are more likely to survive and make it to the shore .

= = Life history = =

= = = Reproductive behavior and parenting = = =

California sea lions breed gregariously between May and August , when they arrive at their breeding rookeries . When establishing a territory , the males will try to increase their chances of reproducing by staying on the rookery for as long as possible . During this time , they will fast , relying on a thick layer of fat called blubber for energy . Size and patience allow a male to defend his territory more effectively ; the bigger the male , the more blubber he can store and the longer he can wait . A male sea lion usually keeps his territory for around 27 days . Females have long parturition intervals , and thus the males do not establish their territories until after the females give birth . Most fights occur during this time . After this , the males rely on ritualized displays (vocalizations , head @-@ shaking , stares , bluff lunges , and so on) to maintain their territorial boundaries . Since temperatures can reach over 30 ° C (86 ° F) during this time , males must include water within their territories . Some territories are mostly underwater , particularly those near steep cliffs . Sea lions that fail to establish a territory are driven out to sea or gather at a nearby beach .

Before mating begins , females gather into " milling " groups of 2 ? 20 individuals . The females in these groups will mount each other as well as the males . These groups begin to disintegrate as the females begin to mate . The territorial and mating system of the California sea lion has been described as similar to a lek system , as females appear to choose their mates while moving through different territories . They avoid males that are too aggressive or energetic . Males are usually unable to prevent females from leaving their territories , particularly in water . Mating may occur outside the rookeries , between non @-@ territorial males and females , as the latter move to and from the mating site . In some rookeries , copulation may be monopolized by a few males , while at others , a single male may sire no more than four pups .

Female California sea lions have a 12 @-@ month reproductive cycle , consisting of a 9 @-@ month actual gestation and a 3 @-@ month delayed implantation of the fertilized egg before giving birth in June or July . Interbirth intervals are particularly long for this species , being 21 days for sea lions off California and more than 30 days for sea lions in the Gulf of California . Females remain with their pups on shore for 10 days and nurse them . After this , females will go on foraging trips lasting as long as three days , returning to nurse their pups for up to a day . Pups left on shore tend to gather in nurseries to socialize and play . When returning from a trip , females call their pups with distinctive calls to which the pups will reply in kind . A mother and pup can distinguish each other 's calls from those of other mothers and pups . At first , reunions largely depend on the efforts of the mothers . However , as pups get older , they get more involved in reunions . Older pups may sometimes join their mothers during their foraging trips . Adult male California sea lions play no role in raising pups , but they do take more interest in them than adult males of other otariid species ; they have even been observed to help shield swimming pups from predators . Pups are weaned by a year but can continue to suckle for another year .

= = = Communication = = =

California sea lions communicate with a range of vocalizations . The most commonly used one is their characteristic bark . Territorial males are the loudest and most continuous callers , and barks

are produced constantly during the peak of the breeding season . Sea lions bark especially rapidly when excited . The barks of territorial and non @-@ territorial males sound similar , although those of the former are deeper . Males may bark when threatening other males or during courtship . The only other vocalization made by territorial males is a " prolonged hoarse grunt sound " made when an individual is startled by a human . This vocalization is also made by groups of non @-@ reproductive males .

Female sea lions are less vocal . Their barks , high @-@ pitched and shorter than those made by males , are used in aggressive situations . Other aggressive vocalizations given by females include the " squeal " , the " belch " , and the " growl " . The sound a female sea lion gives when calling her pups is called a " pup @-@ attraction call " , described as " loud " and " bawling " . Pups respond with a " mother @-@ response call " , which is similar in structure . Pups will also bleat or bark when playing or in distress . California sea lions can produce vocalizations underwater . These include " whinny " sounds , barks , buzzings , and clicks .

= = = Nonbreeding activities = = =

Outside of the breeding season , males migrate to the northern ends of the species range to feed , while females forage near the breeding rookeries . Sea lions can stay at sea for as long as two weeks at a time . They make continuous dives , returning to the surface to rest . Sea lions may travel alone or in groups while at sea and haul @-@ out between each sea trip . Adult females and juveniles molt in autumn and winter ; adult males molt in January and February . Gulf of California sea lions do not migrate ; they stay in the Gulf year @-@ round .

= = Intelligence and trainability = =

Marine biologist Ronald J. Schusterman and his research associates have studied sea lions ' cognitive ability . They have discovered that sea lions are able to recognize relationships between stimuli based on similar functions or connections made with their peers , rather than only the stimuli 's common features . Sea lions have demonstrated the ability to understand simple syntax and commands when taught an artificial sign language . However , the sea lions rarely used the signs semantically or logically . In 2011 , a California sea lion named " Ronan " was recorded bobbing her head in synchronization to musical rhythms . This " rhythmic entrainment " was previously seen only in humans , parrots and other birds possessing vocal mimicry .

Because of their intelligence and trainability , California sea lions have been used by circuses and marine mammal parks to perform various tricks such as throwing and catching balls on their noses , running up ladders , or honking horns in a musical fashion . Trainers reward their animals with fish , which motivates them to perform . For ball balancing , trainers toss a ball at a sea lion so it may accidentally balance it or hold the ball on its nose , thereby gaining an understanding of what to do . A sea lion may go through a year of training before performing a trick for the public . However , its memory allows it to perform a trick even after three months of resting . Some organizations , such as the Humane Society of the United States and World Animal Protection , object to using sea lions and other marine mammals for entertainment , claiming the tricks are " exaggerated variations of their natural behaviors " and distract the audience from the animal 's unnatural environment . Less entertainment @-@ oriented zoos may still encourage animal play by throwing fish at animals in different directions and providing play equipment .

The California sea lion is used in military applications by the U.S. Navy Marine Mammal Program , including detecting naval mines and enemy divers . In the Persian Gulf , the animals can swim behind divers approaching a US naval ship and attach a clamp with a rope to the diver 's leg . Navy officials say the sea lions can do this in seconds , before the enemy realizes what happened . Organizations like PETA believe that such operations put the animals in danger . However , the Navy insists that the sea lions are removed once their mission is complete .

= = Status = =

The IUCN lists the California sea lion as Least Concern due to " its large and increasing population size . " The estimated population is 238 @, @ 000 ? 241 @, @ 000 for the U.S. or Pacific Temperate stock , 75 @, @ 000 ? 85 @, @ 000 for the Western Baja California or Pacific Tropical stock , and 31 @, @ 393 for the population in the Gulf of California . Off the Pacific coast of the United States , sea lions are so numerous that they are close to carrying capacity , while the Gulf of California population declined by 20 % by 2008 . Sea lions may be killed when in conflict with fishermen , by poaching , and by entanglements in man @-@ made garbage . They are also threatened by pollutants like DDT and PCB which accumulate in the marine food chain .

In the United States , the California sea lion is protected on the federal Marine Mammal Protection Act (MMPA) , passed in 1972 , which outlaws hunting , killing , capture , and harassment of the animal . In 1994 an amendment to the Act allowed for the possibility of limited lethal removal of pinnipeds preying on endangered salmonids should the level of predation be documented to have a significant adverse impact on the decline or recovery of ESA @-@ listed salmonids . Applications have been granted for removal of several individual sea lions at Ballard Locks and at the Bonneville Dam , where up to 92 sea lions can be killed each year for a 5 @-@ year period . Critics have objected to the killing of the sea lions , pointing out that the level of mortality permitted as a result of recreational and commercial fisheries in the river and as part of the operation of hydroelectric dams pose a greater threat to the salmon .

These animals exploit more man @-@ made environments like docks for haul @-@ out sites . Many docks are not designed to withstand the weight of several resting sea lions which cause major tilting and other problems . Wildlife managers have used various methods to control the animals and some city officials have redesigned docks so they can better withstand them .

= = = 2015 Californian shore sea lions pups crisis = = =

In January and February 2015 , 1450 malnourished or sick sea lion pups have been found on the coast of California , and estimations give a higher number of dead pups . NOAA has pointed the cause to unprecedentedly warm PDO in the North American west coast as a result of a failed attempt at El Niño , which has reduced the abundance of anchovies , sardines and mackerel , principal components of the sea lion diet just in the pups nursery season . Pups are leaving the rookeries in search of food long before they are capable of hunting fish , the outcome are pups really malnourished washed out on the shores , these conditions lead some of these pups to death if not rescued on time . These " unusual warm waters " affect the abundance of same species of fish and sea food , which have their effects in mammals and birds , a similar event has occurred by the end of 2014 with the unusual mass dead of Cassins auklet just in the period the chicks start to fledge .