

AMERICAN AVOCET - RECURVIROSTRA AMERICANA

Taxonomy: Kingdom: Animalia Phylum: Chordata Class: Aves Order: Charadriiformes Family: Recurvirostridae Genus: Recurvirostra Species: R. americana

Habitat:

Biomes: American Avocets forage in shallow fresh and saltwater wetlands, salt ponds, impoundments, and evaporation ponds. They nest in areas with little or no vegetation along dikes and islands. During winter they also use intertidal mudflats, tidal lagoons, brackish impoundments, sewage ponds, rice fields, and flooded pastures.

Distribution:

In US: American avocets were previously found across most of the United States until extirpated from the East Coast. The breeding habitat consists of marshes, beaches, prairie ponds, and shallow lakes in the midwest, as far north as southern Canada. These breeding grounds are largely in areas just east of the rocky mountains including parts of Alberta, Saskatchewan, Montana, Idaho, Washington, Utah, North and South Dakota, Nebraska, Colorado, and even down to parts of New Mexico, Oklahoma and Texas. Their migration route lands them in almost every state in the western United States. The avocet's wintering grounds are mainly coastal. Along the Atlantic Ocean, they are found in North and South Carolina, Georgia and Florida. There are also wintering grounds along the Gulf of Mexico in Florida, Texas, and Mexico, and along the Pacific Ocean in California and Mexico. There are resident populations in the Mexican States of Zacatecas, San Luis Potosi, Guanajuato, Hidalgo, Mexico City and Puebla, and in Central California.

In Other Countries: ^^^^^^

Holistic Description: The American Avocet takes elegance to a new level. This long-legged wader glides through shallow waters swishing its slender, upturned bill from side to side to catch aquatic invertebrates. It dons a sophisticated look for summer with a black-and-white body and a rusty head and neck. During the winter the head and neck turn a grayish white, but the bird loses none of its elegance as it forages along coastal waters or rests while standing on one leg.

Species Richness: NO SUBSPECIES

Population Dynamic: Shooting and trapping of American avocets led to population decline until the 1900s. During this time, the species was extirpated from most of the East Coast of the United States. By 1918, Avocets became protected under the Migratory Bird Treaty Act. Since that time, other threats have emerged. Contaminants and toxins such as DDT, selenium, and methylmercury, have had significant impacts on American avocet breeding success, especially because Avocet chicks are more susceptible to environmental disruptions than adults. The avocet also faces habitat loss. While agricultural and industrial environments have become alternate habitat for the avocet, natural wetlands are decreasing rapidly.

Evolution and Systematics:

Evolution: On basis of fossil evidence, Recurvirostridae are considered by some to be a very old family, which gave rise to flamingos (Phoenicopteridae) before the middle Eocene.

Systematics: On the basis of morphology and various genetic tools, the family Recurvirostridae, the stilts and avocets, is phylogenetically nearest the family Haematopodidae, the oystercatchers. Some fossil evidence suggests that the Recurvirostridae and Phoenicopteridae are related, but such a relationship is not supported by DNA-DNA hybridization; similarities likely are the result of convergent evolution.

Number of Species: NO SUBSPECIES

Number of Genera: NO SUBSPECIES

Physical Characteristics:

Size and Length: Length: 16.9-18.5 in (43-47 cm) Weight: 9.7-12.3 oz (275-350 g)

Wingspan: 28.4 in (72 cm)

Coloration: Breeding birds have a chic rusty head and neck that turns grayish white after breeding. A black patch on the back and black-and-white wings mark its largely white body. The legs are bluish gray.

General Body Features: Large, slender shorebird with a long, upturned bill, a long neck, and a round head. Its oval body sits atop long legs.

Special Features of the Body: Shorebirds are designed, or adapted, to survive in open habitats. Their brown, rust, black, and white plumage makes them less conspicuous to predators. Their bi-coloration, dark on the back and lighter on the belly, further camouflages them from predators. Their light bellies blend in against the light sky when seen from below. When observed from above, by a falcon for example, their dark backs blend in with the beach or mudflat below.

Special Features of the Head and Sensory Organs: Unusual beak is specific adaptation to the life in swampy areas. When searching for food, avocet relies on the eyesight. As soon as the prey is located, avocet will sweep its long beak through the water to grab it. These water birds find most of their food in or near the water. They will swoop their long, thin, open bills

back and forth in the water to catch insects and some aquatic crustaceans. Their bills are highly adapted tools for finding food. Some species will probe for invertebrates in mud or water, poking their bills up and down in rapid succession like a sewing machine until they feel something to eat. Others have bills perfectly adapted to swishing through the water to filter food from the water column

Dentition: BEAK/LAMELLAE/GIZZARD

Special Features of the Limbs and Digits: Shorebirds have long legs for wading. Their long toes give them the stability they need for their seemingly endless walking and running along the water's edge and in soft mud.

Any Special Internal Anatomy: Not only used for finding food, bills are used for preening as well. A special oil gland located at the base of their tails helps to keep their feathers dry. The birds spread the oil from this gland with their bills or the backs of their heads when preening themselves. The oil repels water from the feathers, keeping them warm and dry.

Sexual Dimorphisms: Sexes similar in plumage but different in size (male larger), and in bill shape (shorter and more strongly recurved on female).

Differences Between Juvenile Stage and Adult: Juveniles are best identified by their pale fringed upperparts, shorter, straighter bills, and loosely textured underpart plumage

Behavior:

Diurnal, Nocturnal, or Crepuscular: Diurnal

Activity: American Avocets wade in shallow wetlands often less than 8 inches deep, but they also swim in deeper waters. On the breeding grounds, avocets breed in loose colonies and defend the nest site. Intruders are met with outstretched necks or a crouch-run where they ruffle their feathers, crouch down, and run at the intruder. Upon the arrival of a terrestrial predator, avocets may approach with a teetering gait and outstretched wings, as if on a tightrope. They also try to distract the predator by crouching on the ground as if incubating, only to move and crouch again in a new location. In its pre-copulation display, the male American Avocet preens himself with water, gradually gaining intensity to the point of frenzied splashing just before mating with the female. After mating, the pair intertwines their necks with their bills crossed and runs forward. The pair stays together for a single breeding season. One notable display, known as "circling," occurs before and during nesting and involves two pairs, or a pair and a third individual. Individuals face each other in a circle and stretch their bills toward each other while calling and rotating in a circle. On the wintering grounds they forage and rest in flocks often with other shorebirds, especially the Black-necked Stilt.

Locomotion: For short distances, normally walks or wades rather than flies. Shakes feet on exit from water to remove mud from feet. Runs during interactions with other individuals. Hops when disturbed. Head and legs extended during flight. Sometimes, when disturbed while resting on one leg, will fly and land with other leg folded against breast. Good swimmer. Paddles with partly webbed feet, while maintaining upright sitting posture on water with tail elevated. Downy young swim from nest islands to nursery areas, and dive to avoid capture. Older flightless chicks can swim as far as 7 m underwater using wings and feet.

Communication and Perception: The call of male and female American Avocets is a repeated, high-pitched kleet. They are generally silent, calling only when disturbed.

Home Range: After birds arrive on the breeding grounds, there is a gradual transition from flocking, where birds show no aggression, to aggressive territorial behavior. Pairs can sometimes be distinguished within flocks. Eventually, pairs stay separate on territories. Avocets nest in loose colonies.

Degree of Sociality: A semi-colonial species, showing a strong tendency to nest with other pairs. Most breeding areas have dense colonies, loose colonies, and relatively solitary nesting pairs simultaneously. However, pairs will nest alone. Avocets also will nest in association with other species. Degree of association with other nesting individuals varies, but nests are clumped within suitable habitat. In California, Avocet nests were randomly distributed along dikes, and Stilt nests were regularly distributed along dikes. Internest distance often are greater at sites that are more accessible to ground predators.

Level of Aggression: The Upright Posture, used to threaten both conspecifics and heterospecifics, is generally adopted by both birds in an encounter. In the Upright Posture, a bird faces parallel to an opponent with neck extended vertically; its wings may be folded or extended. Avocets perform the Crouch-Run with ruffled feathers to chase or threaten another bird. In the Crouch Run the neck is retracted close to the body, the feathers of the back are ruffled, the tail is tipped slightly forward, and the individual runs toward the opponent. When physical contact is made, Avocets primarily use their feet, whereas their wings and sensitive bill are used secondarily. Physical contact between Avocets during interactions is most common in late winter or early spring and tends to be associated with pairing.

Migration: Medium-distance migrant. In the western United States, American Avocets may migrate south for the winter, or they may migrate west from inland breeding sites to coastal wintering sites.

Predators:

Predators: Peregrine falcon, Prairie Falcon, Great-Horned Owl, Northern Harrier, Red Fox, Burrowing Owl, California Gull, Mink, Coyote, Raccoon, Gopher Snake, Night Heron, Snow Egret, White-Faced Ibis

Anti-Predator Defenses: When adults give an Alarm Call, the response by chicks depends on chick age and time of day. Chicks < 1 wk old almost always attempt to hide when approached by a human intruder. During the day, young chicks (1–3 wk) tend to crouch on mudflats or near vegetation. At night, chicks tend to crouch in shallow open water. Older chicks (2–5 wk) were more likely to run or try to swim away. Group flight is the response to aerial predators, including Northern Harriers, Peregrine Falcons, Merlins (*Falco columbarius*), Short-eared Owls (*Asio flammeus*), and also terrestrial predators, such as humans and domestic dogs. Avocets also take flight in response to movements or alarm calls by other shorebirds. When a Northern Harrier harassed a wintering Avocet, causing it to flap its wings and call in distress, a flock of Avocets flew repeatedly at the Harrier, and 2 individuals made contact with their bills. Aggressive displays also drive other non-predators away from nesting areas.

Parasites: Besides these threats, avocets are prone to avian botulism (bacterial disease) and influenza (viral disease).

Diet and Nutrition:

Adult Diet: American Avocets forage for aquatic invertebrates in shallow water while wading or swimming. Their diet consists of beetles, water boatmen, midges, brine flies, fairy shrimp, water fleas, amphipods, and more. They also eat small fish and seeds from aquatic plants. They capture aquatic invertebrates in the water column by sweeping their bill side to side, a signature behavior called scything. With each step they put their slightly open bill in the water and move it in the direction of the outstretched foot, alternating sides with each step. They also capture prey by pecking and plunging. Pecking involves lunging out with their bill to peck at prey within the water column or in the wetland bottom. Individuals also plunge their head and neck underwater to grab prey in the water column. Foraging methods vary by time of day, flock size, and date. Scything and pecking occur more often during the day, while plunging is more common at night.

Juvenile Diet: ^^^^^^

Special Adaptations for Getting Prey: Although scything is the hallmark foraging method used by this species, it has flexible feeding behaviors. Avocets use three visual feeding methods: Pecking, Plunging, and Snatching; and 6 tactile feeding methods: Bill Pursuit, Filtering, Scraping, Single Scything, Multiple Scything, and Dabble Scything. Pecking consists of visual search for prey while standing still or walking slowly, followed by a quick jab of the bill to capture prey on mud or near the water surface. Pecking is more common in loose aggregations of individuals. In Plunging, the head and upper breast enter the water to capture food from within the water column. Snatching is the capture of a flying insect with the bill. Bill Pursuit is a rarely observed behavior where an individual rapidly opens and closes its bill while moving it erratically along a shallow water surface. Birds use Bill Pursuit probably to collect small rapidly moving organisms from the water. In Filtering, the bill opens and closes rapidly while moving over mud; the feeding bird then pauses to swallow. Scraping is extending of the neck to move the bill 5–20 cm forward through the mud followed by swallowing. In Single Scything, the bill is held open slightly at the level of the muddy substrate and moved from one side to the other; one step occurs between each swipe, and the swipe moves toward the leading foot.

Reproduction:

Mode of Reproduction: Monogamous

Mating System: Monogamous. Although bill morphology makes it possible to identify sexes at a distance, systematic surveys of sex ratios have not been published.

Mating Season: January to April

Courtship: A pair forms when a female persistently associates with a male and is eventually tolerated.

Territoriality: HOME RANGE and The degree of territoriality varies with stage of the nesting season. Before egg-laying, the territory centers on the feeding area, which may or may not be close to the eventual nesting site. The territory is defended by the male and female acting singly or together to drive away other Avocets.

Mating: Pre-copulatory display is initiated by the female Solicitation Posture or by male and female Sexual Preening. The female adopts a stiff Solicitation Posture: neck extended with her bill sometimes submerged in water. The male performs Sexual Preening by standing 20–30 cm from the female, extending his neck and preening his breast on the side facing the female. Water is used in Sexual Preening by shaking the bill when placing it in the water and bringing water in the bill to the breast; intensity increases during the course of the display, culminating in vigorous splashing immediately prior to mounting the female. Sometimes the female also preens. The female may turn slightly to keep herself aligned parallel to the direction of the male. While the female holds the Solicitation Posture, the male mounts to copulate, resting his tarsometatarsi on her back. The male flutters his wings to maintain balance, and cloacal contact is made. The female sometimes moves her head slowly from side to side during copulation. Mount time averaged 4.9 s. Males sometimes attempt to copulate with inanimate objects

Nesting: Male and female avocets select a nest site together. The male leads the female around making scrapes in the ground, until they both choose a spot to nest. They typically nest on islands or dikes, placing the nest on the ground with little or no surrounding vegetation. The male or female makes a scrape in the ground with their breast and feet. They line the shallow depression with grass or other vegetation, feathers, pebbles, or other small objects, but sometimes the nest is completely unlined. Additional lining may be added to the nest throughout incubation, especially if rising waters threaten to flood the nest.

Egg-Laying: Clutch Size: 3-4 eggs Number of Broods: 1 brood Egg Length: 1.6-2.4 in (4.2-6 cm) Egg Width: 1.1-1.8 in (2.9-4.6 cm) Incubation Period: 18-30 days Egg Description: Greenish brown with irregular dark spots. Pointed on one end.

Hatching and Incubation/Gestation: Downy and able to walk.

Development: Chicks are precocial and downy. Chicks become dry and are able to leave the nest within 1–2 hours, but walk awkwardly for the first day. At first, chicks stand and look when parents give Alarm Calls, and parents typically must peck them to make them crouch. After several days, chicks crouch when parents give Alarm Calls. In captivity, chick's first response to Alarm Call playbacks was to crouch.

Parental Care: Brooding only occurs during the first week unless weather is poor. Brooding in nest is similar to incubation. On land, parent rests on its tibiotarsi, and young stand beneath with legs visible below parent's wings. In water, parent stands with young beneath. Chicks feed themselves. Food abundance in nursery areas and its relationship to chick-feeding has not been studied. Young do not remain in nest for long after hatching and are mobile enough to defecate away from it.

Lifespan: Around 9 years of age.

Conservation:

Official Federal Status: Least Concern

Special Statuses in Individual States: NONE

Threats: American Avocets are common and their populations have been stable between 1966 and 2015, according to the North American Breeding Bird Survey. Partners in Flight estimates the global breeding population at 450,000. The species rates an 11 out of 20 on the Continental Concern Score, which means it is not on the Partners in Flight Watch List and is a species of low conservation concern. People drained or converted wetlands on a large scale in the early twentieth century, causing population declines as traditional breeding sites were eliminated. Creation of sewage ponds, agricultural evaporation ponds, rice fields, and salt ponds now provide additional breeding habitat to counteract past losses. Many wetlands in the western United States however, are contaminated with selenium that leaches from the soil following irrigation, which can cause low reproductive success and embryo deformities. Methylmercury, a pollutant associated mainly with the burning of coal, also causes chick deaths in some wetlands.

Conservation Efforts: ^^^^^^

Extra Facts:

1. In response to predators, the American Avocet gives a series of call notes that gradually rise in pitch, simulating the Doppler effect and making its approach seem faster than it actually is.
2. A female American Avocet sometimes lays eggs in the nest of another female, who incubates them without noticing. This is called “brood parasitism,” and American Avocets may do it to other species, too; American Avocet eggs have been found in the nests of Mew Gulls. On the other hand, species such as Common Terns and Black-necked Stilts may also parasitize avocet nests. In the case of the stilts, the avocets reared the hatchlings as if they were their own.
3. American Avocets place their nests directly on the ground without the benefit of shrubs to provide shade. To keep the eggs from overheating during incubation, they dip their belly feathers in water.
4. American Avocet chicks leave the nest within 24 hours of hatching. Day-old avocets can walk, swim, and even dive to escape predators.
5. The oldest recorded American Avocet was at least 15 years old when it was found in California, where it had been banded a decade and a half earlier.

Notable Species: NONE