

Calidris himantopus (Stilt sandpiper)

Family: Scolopacidae (Sandpipers)

Order: Charadriiformes (Shorebirds and Waders)

Class: Aves (Birds)



Fig 1. Stilt sandpiper, *Calidris himantopus*

<http://www.arkive.org/stilt-sandpiper/calidris-himantopus/image-G86449.html>

TRAITS. Stilt sandpipers on average are 20.3 – 23 cm in length, weigh 55g and have a life expectancy of about 11 years. In general, the males are more slender than females and have a long neck with a thin, black decurved bill that droops at the tip and long, dull green legs (Hilty, 2002). Female stilt sandpipers are slightly larger than their male counterparts and possess a brown ventral barring (Fig. 1) (Jehl Jr 1973). The non-breeding plumage of these birds consists of the upper body part being mostly plain grey with a white patch on its rump while the lower part of the body is white. In addition, the fore neck and sides of the chest are smudged grey (Hilty, 2002). The breeding plumage differs from the non-breeding plumage. The upper body turns a greyish brown while the lower body turns a dirty white. Additionally, the crown and

cheeks are reddish brown, there is the presence of a narrow white eyebrow stripe and the under parts of the body are black in colour (Hilty, 2002). Juveniles have an upper body that is scaled buff with the fore neck and sides of the chest containing fine grey streaks (Hilty, 2002).

ECOLOGY. During winter (November to February), it is found along the arctic coast of Hudson Bay. As it is a long distance migrant, the stilt sandpiper also winters in central South America (EOL, 2013) from Bolivia and Brazil to Uruguay and central Argentina. During the breeding season, it is normally found on the wet North American tundra (Jehl Jr, 1973). The stilt sandpiper has a range for nesting extending westward from Cape Henrietta, Ontario to Alaska in relatively open areas of dry tundra (Jehl Jr, 1973) (Fig. 2). During the winter/migration period it may be found along the edges of ponds and in shallow coastal lagoons or mudflats (EOL, 2013).

SOCIAL ORGANIZATION. The stilt sandpiper is territorial and forages in flocks but keeps a certain distance between individuals within them. This distance is inversely proportional to the density of the prey. At low prey densities, a distance of 15 bird lengths (about 5m) is kept from the other bird. At higher prey densities, this distance is less (Pierce, 1985). During the breeding/incubation period, the pairs of stilt sandpiper are evenly distributed within the territory. Within 2 weeks of hatching, the chicks begin to forage on their own after being previously led to the area by their parents in the beginning. Within one month of hatching, the chicks begin to congregate in small flocks with which they leave the breeding grounds (Jehl Jr, 1973).

ACTIVITY. The stilt sandpiper is diurnal (primarily active during the day) but it migrates at night. It occurs regularly in small numbers only at Salton Sea's south end during migration and non-breeding seasons (CDFW 2012). It is in the migration period; June 1st- June 6th that they are often seen in association with dowitchers and yellowlegs (EOL, 2013). Males usually arrive a day or two before the females to the breeding ground (Jehl Jr, 1973).

FORAGING BEHAVIOUR. The stilt sandpipers use eight modes to feed, sometimes alone or in small groups. There are four visual modes: 'Pecking' involves the bird's head thrusting towards the prey, while 'plunging' (Fig. 3) is underwater pecking. 'Snatching' is where the stilt sandpiper aims at a flying insect with its bill. 'Bill pursuit' is another visual mode where the sandpiper rapidly opens and closes its bill on the water surface (Pierce, 1985) (Fig. 4). There are also four non-visual modes. 'Filtering' is where the bill is rapidly dabbled and swept from side to side through mud or surface algae. 'Probing' involves insertion of the bill semi-vertically into a soft substrate of varying depths. 'Scything' is where the bird will hold its head, neck and bill at a low horizontal angle and then sweep from one side to the other in an arc then repeat in the opposite direction; 'lateral probing' is also a non-visual mode used where the bill is pushed at various angles under stones for prolonged periods (Pierce, 1985). Stilt sandpipers are considered to be opportunistic feeders and change their feeding style upon the availability of prey (Pierce, 1985). Their diet varies from insects to molluscs to seeds and they also eat leaves and roots of aquatic plants (Kaufman, 2001).

COMMUNICATION. Visual communication: Males establish territories at first through aerial displays which may involve hovering over the desired nesting area in a wide circle. These displays can last around 8 minutes. This is followed by landing on the spot where their wings are held vertically for a moment and then folded. They also vigorously chase passing birds of the same species away (Jehl, 1973).

Vocal communication: The stilt sandpiper displays many different types of vocalizations. ‘Eree’ - it is given by males upon the marking of its territory in a drawn out but gradually increasing manner. ‘xxree-ee-haw’ - a prolonged song made during flight, ‘Trrrrr’ - a rapid, gurgling, descending trill used by males when threatening others, ‘oo-it’ – given by birds with chicks as an alarm that their eggs have hatched and is described as being sharp in sound (Jehl Jr, 1973).

SEXUAL BEHAVIOUR. Due to rapid gonadal progression, the stilt sandpiper males can breed immediately upon arrival. However, the females take 3-5 days for enlargement of their ova (Jehl Jr, 1973). As soon as females enter the nesting area, the males produce spectacular aerial and ground displays that includes them singing song after song. It is the ground displays that determine the initial mate pairing. The small males to large females are the first to pair up (Jehl Jr, 1973). Through pairing up, a bond is formed which lasts throughout the incubation period or until the egg is fledged. Each nest contains 4 eggs produced in intervals over 36 hours. Both sexes participate in incubation. Males will incubate the eggs throughout the day while females will do the same during the night. Throughout the breeding grounds the stilt sandpiper population is dispersed. Each mating pair displays monogamy and develops a strong bond. (Pitelka, Holmes and Maclean 1974). These bonds lead to territorial fidelity. This term refers to the stilt sandpiper remaining mated to its companion throughout the entire breeding season and that upon returning to the grounds the following mating season; it will meet its mate from the previous year there. This outcome allows the old pair to nest immediately (Jehl Jr, 1973)

JUVENILE BEHAVIOUR. The stilt sandpipers are hatched around June and tend to leave their nest a day after hatching to find their own food. They have a short, ‘gritty’ call and lose their juvenile plumage within a month or two of hatching which is then replaced by one similar to a non-breeding adult. The parents only tend to their young for four days. The mother leaves within a week of the young hatching leaving the chicks to become independent. The juvenile sandpipers are able to fly within 17-18 days (Kaufman, 2001).

ANTIPREDATOR BEHAVIOUR. This type of behaviour depends on the distance of predator from the stilt sandpiper nest. Avian predators such as hawks invoke a scant reaction from the sandpiper but their movements are carefully watched (Jehl Jr, 1973). During the incubation period at the presence of a predator 75 to 100m away from the nest, the bird flies off inconspicuously, 50m or more above the ground and then returns back rapidly to a height of 30m to 50m. It may then again fly for 15 minutes or more before descending from 60m away and then cautiously return to its nest (Jehl Jr 1973). When the intruder is near the nest, the bird will fly a small distance from the nest and challenge this intruder. This challenge usually involves either a

wing- up display or a threat song from the bird. It may also involve throwing debris over its shoulder or preening their necks very vigorously (Jehl Jr, 1973). Stilt sandpipers also have long unbroken incubation periods to prevent predators from locating the nest. They also limit the number of pairs that can begin nesting simultaneously, this is in order to make the nests as inaccessible as possible to the predators (Jehl Jr, 1973). In addition, their reddish brown breeding plumage acts as protection against predators by camouflaging both the sandpiper and nest during the season (Hilty, 2002) (Fig.5)

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Fig. 2 *Calidris himantopus* geographic distribution

<http://maps.iucnredlist.org/map.html?id=22693437>



Fig. 3. *Calidris himantopus* utilizing the “plunging” method of foraging

<https://houstonaudubon.org/birding/gallery/stilt-sandpiper.html>



Fig. 4 *Calidris himantopus* utilizing the “bill pursuit” method of foraging

<http://www.thewesternisles.co.uk/birds/stilt-sandpiper-2.htm>



Fig. 5 *Calidris himantopus* camouflaged during nesting

<http://www.arkive.org/stilt-sandpiper/calidris-himantopus/image-G87980.html>

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