

## **BLACK-NECKED STILT (*Himantopus mexicanus*)**

**Associated Species:** Other species that may respond similarly to habitat components used by the Black-necked Stilt are: Wilson's Phalarope, American Avocet, Long-billed Dowitcher, Marbled Godwit, Willet, Baird's, Least and Western Sandpipers, and the Greater Yellowlegs.

**Distribution:** Distribution of the Black-necked Stilt, like that of the American Avocet, is highly dependent on suitable local habitat, making the breeding range somewhat spotty and localized. The Black-necked Stilt breeds in North America in the western and west-central United States, the Gulf and Atlantic Coasts, Baja California, western Mexico, southwest-central Canada, and portions of the Bahamas and West Indies.

Breeding in Utah occurs on mudflats and shorelines in the wetlands associated with the Great Salt Lake, Utah Lake, the Bear and Malad Rivers in northern Utah, the Logan and Little Bear River in Cache Valley, Bear River Refuge; and in the Uintah Basin at Ouray National Wildlife Refuge, and other reservoirs in Uintah County; and at Fish Springs National Wildlife Refuge (Parrish et al. 2002). The Black-necked Stilt is a year-round resident in portions of Mexico.

A five-year survey of the Great Salt Lake yielded a mean of 25,522 (July-September) (Paul and Manning 2002). The Refuge mean from the survey was 8,352. The average breeding population of Black-necked Stilt on the Refuge is about 3,000 (Refuge files 1991-2003, late May).

**Ecology (Robinson et al. 1999):** The primary foods for the Black-necked Stilt are invertebrates of the water column and flying insects near the water's surface including brine shrimp, *Artemia*, flies and fly larvae, *Diptera*, mosquitos and midges (Chironomidae); terrestrial invertebrates including grasshoppers; small fish, crayfish, and seeds, especially sago pondweed and bulrushes. Stilts forage on bare ground and while wading in water depths up to 6 inches, usually in water fresher than avocets prefer. They do not usually swim and forage as the avocet does. The stilt's principal hunting technique is pecking-seizing insects on or near the surface of the water or on land while standing still or walking slowly. Black-necked Stilt can be found foraging along the shallow borders of freshwater and alkaline lakes, brackish ponds, salt marshes, and wet pastures (Parrish et al. 2002).

The birds arrive in Utah in early April. Very little information exists as to where and when pair formation occurs among stilts. Observations made in the 1970s suggest Black-necked Stilts do not form pair bonds until reaching the breeding grounds. Further observation notes that some stilts remain in pairs after the breeding season at migration stopovers; however, it is also noted that males and females differ in their migratory behavior on wintering ranges.

Stilts build their nests in loose colonies, sometimes with avocets. However, it appears that stilts will put more distance between their nest and other stilts than do avocets. Nest site selection is similar to that of avocets; very sparse vegetation in an area affording an unobstructed view all around. Nesting locations are generally on islands, when available, on dikes, or other areas associated with the water's edge. Nests are built on the ground, scraped into bare mud usually near patches of saltgrass or salicornia, *Salicornia rubra*, and then lined with small bits of weeds,

grasses, twigs, shells, or bones. Average clutch size is four eggs. Incubation is shared by both sexes, alternating throughout the day and night, and lasts 22-26 days. Chicks are hatched precocial, downy, and able to feed themselves. After a day or two the parents move the brood to areas more suitable for feeding and hiding from predators. Similar to avocets, stilt juveniles will spend time in flocks with other stilts and depart for wintering grounds in small flocks beginning in August and throughout September. Stilts undergo molt of both body feathers and primaries during August and September.

**Habitat Requirements:** Black-necked Stilts breed in fairly specific habitat regimes similar to the American Avocet. Nesting occurs in areas with salt ponds, potholes, or shallow alkaline wetlands. Nesting also occurs in some mudflats of inland lakes and impoundments and evaporation ponds. The alkaline wetlands are characterized by the presence of common cattail, bulrushes, and sedges; however, most time is spent in more open area with no vegetation or with sparse vegetation consisting of salicornia, saltgrass, or greasewood. The birds feed in open water generally fresher than that of avocets from 0-6 inches deep, or on dry ground. The nests are usually built on islands or dikes with sparse vegetation. In desert wetlands, Utah in particular, stilts nest along the lake shoreline among scattered patches of vegetation, along barren mudflats, or up on small patches of vegetation over water.

**Seasonal Use/Refuge Habitats:** The Refuge is an important breeding location for Black-necked Stilt in the Great Basin. They arrive in April and may be found as late as November on the Refuge (Table 6). Black-necked Stilt numbers peak on the Refuge in August likely due to staging and post-breeding birds. More details will be added to this section in subsequent updates as time permits. Updates may include which Refuge units the species has historically and currently used and timing of use (arrival, departure, and peak dates).

**Habitat and/or Population Objectives:** The current continental population is estimated at 150,000 (Brown et al. 2000). Black-necked Stilt has been identified as a Priority Species by Utah Partners in Flight Plan (Parrish et al. 2002) and the Intermountain West regional shorebird plan (Oring et al. 2000). Utah population objective is *to strive to maintain a breeding population of Black-necked Stilt of at least 25,000 pairs within the Great Salt Lake Ecosystem. Fall staging numbers should be at least 40,000 birds.* The Refuge's contribution toward the Utah objective would be to:

*Population Objective:* Maintain breeding population at 1,500 pair.

*Habitat Objectives:* 1) Maintain 800 acres of dikes (791 acres) and nesting islands (12 islands totaling 8.5 acres) April-June, as suitable nesting habitat (mudflats and sparsely vegetated areas close to water depths of 15-20 cm) ;

2) Maintain 8,600 acres of shallow emergent marsh and 31,200 acres of vegetated mudflat (water-depths 0-8 inches) during peak migration to encourage use by migrating and staging stilts at a population level of at least 16,500 birds (July-September).

*Habitat Management Strategy:* See Section V. Habitat Management Strategies: Dikes, Wetlands, and Saltair Mudflats.

**Refuge Specific Monitoring and Research Needs:**

1. Determine number of breeding pair on the Refuge.
2. Determine annual staging numbers of Black-necked Stilt on the Refuge.
3. Identify length-of-stay or turnover rates for staging and/or migrating Black-necked Stilt.
- 4 Determine nesting success and predation rates of breeding population on Refuge.

**Landscape Scale Research Needs (Haig and Oring 1998 and Robinson et al. 1999):**

- 1 Determine and describe migratory routes as well as wintering sites in Mexico.
- 2 Investigate interactions among water quality and quantity, invertebrates, plants, and birds in Great Basin ecosystems.
- 3 Investigate energetics and nutrition of the Black-necked Stilt.
- 4 Determine adult survival rates.