Least Tern (*Sterna antillarum*)

NMPIF level: Biodiversity Conservation Concern, Level 2 (BC2)

NMPIF assessment score: 13

NM stewardship responsibility: Low

NAWCP status: High Concern

New Mexico BCRs: 35

Primary breeding habitat(s): Emergent Wetlands and Lakes

Summary of Concern

Least Tern is a broadly distributed species of coastal flats and river sandbars. It has lost nesting habitat and declined in numbers throughout its range. The interior subspecies of Least Tern (*Sterna antillarum athalassos*) is listed by the U.S. Fish and Wildlife Service (1985) as endangered, except within 80 km of the coast. The New Mexico Department of Game and Fish (1988) listed the Interior Least Tern as endangered in New Mexico in 1976. A single breeding colony exists in New Mexico, at Bitter Lake NWR.

Associated Species

Snowy Plover (SC1), Killdeer, American Avocet, Black-necked Stilt

Distribution

Least Tern has a wide but fragmented breeding distribution in North America. Colonies occur locally along the Pacific and Atlantic coasts. Interior Least Terns breed in the interior of North America, primarily along major river systems, although these populations are only small remnants of the historical populations (BISON-M 2003 and references therein). They also breed along other rivers and occasionally at lakes in Montana, North and South Dakota, Nebraska, Kansas, Oklahoma, Texas, Colorado, New Mexico, Missouri, Louisiana, and Arkansas (Thompson et al. 1997). The Interior Least Tern is the only subspecies that occurs in New Mexico (Thompson et al. 1997, BISON-M 2003, and references therein).

In New Mexico, they breed regularly only at Bitter Lake NWR, and they occur occasionally elsewhere along the Pecos River valley (Thompson et al. 1997, Parmeter et al. 2002). Nonbreeding, transient

individuals have been observed at the Holloman Wetlands in recent years (May 2002, September 2002, and June 2004; Smith and Johnson 2005).

Ecology and Habitat Requirements

Least Terns nest colonially on bare or sparsely vegetated sand or dried mudflats, on coasts, rivers, or emergent wetland areas. As open beaches and river sandbars have been impacted by human activities, agricultural fields, parking lots, and bare land areas have provided occasional alternative nesting habitats. The species shows a high degree of colony site tenacity and fidelity, but small colonies tend to be less stable than larger ones. Successful colonies require an open area largely free of vegetation, above high water levels, and safe from ground predators; thus islands are commonly favored where available (Thompson et al. 1997). Most Least Terns begin breeding in their third year and continue to attempt breeding every year thereafter. Sand is typically the dominant nesting substrate. Nests are placed on a small ridge or elevated area and may be quite close to nests of other species such as Snowy Plover. Typical clutch size is 2-3 eggs. Clutches of one are common later in the season, and clutches of four have been reported. Only one brood is reared per season, and annual productivity averages around 0.5 (Thompson et al. 1997). The longevity record for a Least Tern is 24 years, 1 month, and several reports exist of Least Terns living 20 or more years. Annual adult survival is typically over 0.85 (Thompson et al. 1997). Least Terns arrive at Bitter Lake NWR in early May and remain through August (Thompson et al. 1997).

Interior Least Terns will re-use successful nesting colony sites, and small colonies are less likely to persist than large ones. Colony sites are abandoned when they become unsuitable due to vegetation encroachment, predation, increased human activities, floods, or other factors. As river bars have been destroyed by channelization, water diversion, and dams, Least Terns have adapted by nesting at human-made nesting habitats, such as gravel pits, gravel rooftops, and dredge material (Thompson et al. 1997, and references therein).

Nesting habitat requires an adequate supply of fish nearby. Least Terns eat primarily small fishes, but shrimp and other invertebrates are occasionally taken. At Bitter Lake NWR, Interior Least Terns are reported to fly at least 3 km from nesting colonies to foraging areas. In one study, playa habitats that were apparently suitable for nesting, but were 11-19 km from fishing habitat, were not used by terns (Johnson et al. 1997).

Least Terns forage by hovering 1-10 m above shallow water and plunge-diving to capture prey in the upper 15 cm. Diet includes surface-swimming fish 2-9 cm long, such as mosquito fish, shiners, minnows, and shad. Prey size varies with the size of chicks being fed. Least Terns may occasionally capture flying insects or skim the water surface for swimming insects (Thompson et al. 1997).

Conservation Status

Species Assessment

DISTRIBUTION	3
THREATS	5
GLOBAL POPULATION SIZE	2
LOCAL POPULATION TREND	2
IMPORTANCE OF NEW MEXICO TO BREEDING	1
COMBINED SCORE	**13**

Least Tern is a Biodiversity Conservation Concern, Level 2 species for New Mexico, with a total assessment score of 13. It receives a highest vulnerability score of 5 from NAWCP for threats to breeding areas, although NMPIF gives only a 3 for threats to breeding in the state. NAWCP also gives this species a 4 for population trend and places it in the conservation category High Concern. Two of the five subspecies, the California Least Tern and the Interior Least Tern, are federally listed as endangered. Where not endangered or threatened, Least Tern is a U.S. Fish and Wildlife Service (2002) Bird of Conservation Concern. The state population is listed as endangered by New Mexico Department of Game and Fish.

Population Size

NAWCP estimates a North American breeding population of 60,000-100,000 (Kushlan et al. 2002). Total population for New Mexico consists of several breeding pairs.

Population Trend

For a number of years, the small New Mexico population has remained stable. For this reason, NMPIF assigns a score of 2 for local population trend. This species is difficult to survey and data on trends are limited. Survey data indicate that the interior population increased somewhat following listing as endangered in 1985 (Thompson et al. 1997). However, BBS data for the central United States show a strongly negative trend for 1980-2004 (annual trend = -13.8, $p = 0.04$, $n = 22$).

Threats

Least Tern populations declined in the late 1800s and early 1900s because of the millinery trade and egg collection. After the Migratory Bird Treaty Act of 1916, populations rebounded. The breeding

distribution of interior populations has become fragmented over the past century (mostly since the 1940s) as nesting habitats have been destroyed by flooding behind dams, channelization, and untimely release of water from dams. Populations declined in many breeding areas during the 1950s–1970s, possibly because of use of organochlorine pesticides and nesting-habitat disturbance by humans, then rebounded again since 1980 as result of increased conservation efforts (Thompson et al. 1997). Quality of New Mexico breeding habitat is potentially variable due to changing water levels. Colonies may become vulnerable to disturbance and predation if water levels drop, and flows are required to maintain suitable nesting substrate.

Management Issues and Recommendations

Management actions include fencing to exclude people and predators from nesting sites, restoration of natural flooding patterns to control vegetation on nesting sites, dredging to create new nest sites, and placing decoys to attract birds to abandoned colony sites (Thompson et al. 1997, NatureServe 2004). Management for Least Tern in New Mexico must focus on maintaining suitable conditions for the sole breeding colony at Bitter Lake NWR.

NMPIF Recommendations

- Manage river flows to maintain optimal breeding substrate and conditions at Bitter Lake NWR.
- Maintain or draw down on areas adjacent to alkali flats.
- Encourage management of foraging habitat for transients and migrants at Holloman Wetlands.

Species Conservation Objectives

NMPIF Objectives

- Maintain current population (average of 5 breeding pairs) at Bitter Lake NWR.
- Establish 1 additional breeding population in the Pecos watershed by 2019.
- Maintain nesting success of 1 fledgling per pair/per year.

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