

## **Long-billed Curlew (*Numenius americanus*)**

NMPIF level: Species Conservation Concern, Level 1 (SC1)

NMPIF assessment score: 17

NM stewardship responsibility: Low-Moderate

U.S. Shorebird Plan status: Category 5, Highly Imperiled

New Mexico BCRs: 16, 18, (35)

Primary breeding habitat(s): Plains-Mesa Grassland

Other habitats used: Agricultural (foraging), Emergent Wetland

### **Summary of Concern**

The Long-billed Curlew is a large grassland-breeding shorebird of western North America. It has suffered large population declines due to historical over-harvest, and continuing loss of suitable breeding habitat due to “even age” grazing management, and agricultural and urban development.

### **Associated Species**

Mountain Plover (SC1), Prairie Falcon (SC2), Scaled Quail (SC2), Western Kingbird, Say's Phoebe, Loggerhead Shrike (SC2), Lark Bunting, Cassin's Sparrow (Stewardship), Western Meadowlark

### **Distribution**

Long-billed Curlew breeds in shortgrass and mixed grass habitats of the Great Plains and Great Basin, and intermontane valleys of the western United States and southwestern Canada. Its breeding range extends north into British Columbia, Alberta and Saskatchewan, west to the eastern portions of California and Oregon, and south and east to eastern New Mexico. It winters primarily in coastal areas of southern California, western Mexico, and southern Texas (Dugger and Dugger 2002). Recent evidence suggests a higher number of wintering curlews in the grasslands of the Mexican Plateau and the Chihuahuan Desert than previously known.

In New Mexico, Long-billed Curlews breed primarily in grassland in the northeast quadrant, especially from White Lakes and Rowe Mesa east and north, following the uplands above the Canadian Escarpment. The species has occasionally nested in the northwest part of the state, and as far south as

the Plains of San Agustin and in the east, Milnesand. Breeding has been recorded in the following counties: Colfax, Union, Mora, Harding, Santa Fe, San Miguel, Quay, Bernalillo, Torrance (probably), Guadalupe, DeBaca, Roosevelt, Curry (probably), Chaves, and Socorro (S.O. Williams, pers. comm.).

### **Ecology and Habitat Requirements**

In New Mexico, Long-billed Curlew breeding is largely confined to the Plains-Mesa Grassland habitat type. For nesting, curlews require open, level or gently sloping or rolling grasslands where grass height does not exceed 12 inches and may be as low as 4 inches (Dugger and Dugger 2002, Gillihan et al. 2001). Vertical structure is more important than species composition in determining suitability for nesting. In Idaho, breeding abundance is negatively correlated with vegetation height and percent vertical coverage (Pampush and Anthony 1993). In Utah, nests were often located in sites with grass less than 4 inches tall, with taller grass in the immediate vicinity (Paton and Dalton 1994). Hay fields may provide the kind of short vegetation preferred by nesting curlews, if haying operations are properly timed. Agricultural areas including cropland, fallow and stubble fields are rarely used for nesting, but may be important foraging areas (Cochran and Anderson 1987). In southeast Colorado, curlews showed a preference for nesting in proximity to standing water (McCallum et al. 1977). Proximity to water may influence nesting success, possibly because this provides a diversity of foraging habitats (Dugger and Dugger 2002). Shrub incursion decreases habitat suitability for nesting, but widely scattered shrubs are tolerated and may provide shelter for young. Areas of bare ground, high densities of shrubs or trees, or tall dense grass are avoided (Dugger and Dugger 2002). Some studies suggest curlews require fairly large blocks of grassland, with territory sizes averaging 14 ha set within a 300-500-m grassland buffer area in the most densely populated areas in southwest Idaho (Bicak et al. 1982, Redmond et al 1981). In Saskatchewan, surveys noted 1 pair per 6-7 km<sup>2</sup> (Sadler and Maher 1976). There is no data on territory size or patch size requirements from the southern Great Plains.

Long-billed curlews arrive on their New Mexico breeding grounds in early to mid-March, establish territories by mid-April and initiate nests by late April. Nests with eggs occur from May to mid-June, with early hatchlings appearing in late May. Most pairs have large young by mid-July, and adults start leaving breeding areas in late July (S.O. Williams, pers. comm.). Broods continue to forage in short grass habitats but increase use of areas with more vegetative cover, including agricultural fields and weedy areas (Pampush and Anthony 1993). Proximity to such habitat may be beneficial, especially in areas where nest site vegetation is sparse. Before and after breeding, and during migration, curlews forage in grassland, cultivated and stubble fields, wet meadows, and around prairie dog colonies and wetland margins. Both young and adults require abundant invertebrate prey (Dugger and Dugger 2002).

### **Conservation Status**

### **Species Assessment**

DISTRIBUTION	3
THREATS	4
GLOBAL POPULATION SIZE	5
LOCAL POPULATION TREND	3
IMPORTANCE OF NEW MEXICO TO BREEDING	2
<b>COMBINED SCORE</b>	<b>17</b>

Long-billed Curlew is a Species Conservation Concern, Level 1 species for New Mexico, with a total assessment score of 17. It receives a maximum vulnerability score of 5 for its small population size, and a score of 4 for threats to breeding and non-breeding, from the U.S. Shorebird Conservation Plan. Long-billed Curlew is a U.S. Fish and Wildlife Service (2002) Bird of Conservation Concern.

### Population Size

The U.S. Shorebird Conservation Plan estimates a population size of 40,000 (Brown et al. 2001). Size of the Long-billed Curlew population in New Mexico is unknown, but is roughly estimated to be between 500 and 1,000 nesting pairs (S.O. Williams, pers. comm.).

### Population Trend

Recognizing that there is ongoing debate about the adequacy of the BBS for estimating trends of Long-billed Curlew due to its early breeding season (U.S. Shorebird Conservation Plan discussions), BBS data currently indicate that curlew populations show significant declines in prairie regions of the central United States, but increases in parts of the Intermountain West. BBS coverage is insufficient to determine a long-term trend in New Mexico. BBS data for 1966-2004 are:

	Annual Trend (%)	P-value	Number of Routes
New Mexico	3.8	0.60	15
FWS Region 2	-2.3	0.11	23
Western BBS	1.3	0.20	182
Survey-wide	-1.6	0.08	257

## **Threats**

The principal ongoing threats to Long-billed Curlews breeding in New Mexico are poor grazing management and, secondarily, destruction of suitable nesting habitat. Areas which are consistently overgrazed leaving much bare ground are unsuitable for nesting. Because fairly large blocks of grassland habitat are required, the species is vulnerable to habitat fragmentation through conversion to agriculture. However, the species does use and may benefit from proximity to agricultural areas, and landscapes with a mixture of grassland and cropland can sustain the species.

## **Management Issues and Recommendations**

Management for breeding populations of Long-billed Curlews in New Mexico should concentrate on the protection and maintenance of large blocks of grassland habitat with suitable vertical structure for nesting. Both pre-nesting season grazing and fall burning can be useful tools for maintaining the open short and mixed-grass habitat preferred by nesting curlews. In addition, wetland areas used by curlews during fall and spring migration should receive necessary protections and be managed to ensure an abundance of foraging habitat and prey items for this large shorebird.

## **NMPIF Recommendations**

- Seek to prevent further conversion of upland prairie habitat to cropland.
- Seek to protect nesting areas from human disturbance during the nesting and brood rearing season.
- In breeding areas, maintain large patches of habitat up to three times larger than the average territory size of 14 ha, to provide an adequate buffer and encourage nesting (Dechant et al. 2003).
- Maintain a patchwork of shortgrass areas for nesting with scattered shrubs and tall grass areas for foraging and brood-rearing (Gillihan et al. 2001).
- Grazing of known breeding sites to reduce the density of residual vegetation prior to breeding may be beneficial, especially in years of above-average precipitation, but should be avoided in dry years. However, avoid grazing during the incubation period as it reduces nest success (Cochran and Anderson 1987).
- Use controlled fall burning as necessary to control shrub incursion into areas of Long-billed Curlew breeding habitat.

## Species Conservation Objectives

### U.S. Shorebird Conservation Plan Objectives

- Increase population by 30% to 1970 levels, an estimated 57,000 birds.

### NMPIF Objectives

- Develop and carry out a monitoring program to adequately assess status and trends of Long-billed Curlew populations in New Mexico.
- Maintain or increase Long-billed Curlews in all known breeding areas.

### Sources of Information

Bicak, T. K., R. L. Redmond, and D. A. Jenni. 1982. Effects of grazing on Long-billed Curlew (*Numenius americanus*) breeding behavior and ecology in southwestern Idaho. Pages 74-85 in J. M. Peek and P. D. Dalke, editors. Proceedings of the wildlife-livestock relationships symposium. University of Idaho, Forest, Wildlife and Range Experiment Station, Moscow, ID.

Brown, S, C. Hickey, B. Harrington, and R. Gill, eds. 2001. U.S. Shorebird Conservation Plan, Second Edition. Manomet Center for Conservation Sciences, Manomet, MA.

Cochran, J. F., and S. H. Anderson. 1987. Comparison of habitat attributes at sites of stable and declining Long-billed Curlew populations. *Great Basin Naturalist* 47:459-466.

Dechant, J. A., M. L. Sondreal, D. H. Johnson, L. D. Igl, C. M. Goldade, P. A. Rabie, and B. R. Euliss. 2003. Effects of management practices on grassland birds: Long-billed Curlew. Northern Prairie Wildlife Research Center, Jamestown, ND. Northern Prairie Wildlife Research Center Online.

Dugger, B. D., and K. M. Dugger. 2002. Long-billed Curlew (*Numenius americanus*). In *The Birds of North America*, No. 628 (A Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, D.C.

Gillihan, S. W., D. J. Hanni, S. W. Hutchings, T. Toombs, and T. VerCauteren. 2001. *Sharing Your Land with Shortgrass Prairie Birds*. Rocky Mountain Bird Observatory, Brighton, CO.

McCallum, D. A., W. D. Gaul, and R. Zaccagnini. 1977. The breeding status of the Long-billed Curlew in Colorado. *Auk* 94:599-601.

Pampush, G. J., and R. G. Anthony. 1993. Nest success, habitat utilization and nest-site selection of Long-billed Curlews in the Columbia Basin, Oregon. *Condor* 95:957-967.

Paton, P. W. C., and J. Dalton. 1994. Breeding ecology of Long-billed Curlews at Great Salt Lake, Utah. *Great Basin Naturalist* 54:79-85.

Redmond, R. L., T. K. Bickel, and D. A. Jenni. 1981. An evaluation of breeding season census techniques for Long-billed Curlews (*Numenius americanus*). *Studies in Avian Biology* 6:197-201.

Sadler, D. A., and W. J. Maher. 1976. Notes on the Long-billed Curlew in Saskatchewan. *Auk* 93:382-384.

U.S. Fish and Wildlife Service. 2002. Birds of conservation concern 2002. Division of Migratory Bird Management, Arlington, VA. 99 p.