

Tracking the Migrations and Stopover Behaviors of Long-billed Curlews Nesting in the Northern Great Plains of Montana

Dennis Jorgensen is the Program Officer for the World Wildlife Fund in the Northern Great Plains.



Many grassland bird species are of conservation concern due to large-scale, continuing habitat loss and degradation over much of their range. Forty percent of North America's declining bird species are those that depend on grasslands. Among grassland birds, the Long-billed Curlew, North America's largest shorebird, is perhaps one of the most recognizable, if not the most charismatic among them. In 2009 the U.S. Fish and Wildlife Service, Region 6, Nongame Migratory Bird Program published the "Status Assessment and Conservation Action Plan for the Long-billed Curlew (*Numenius americanus*)". This assessment highlighted significant concern regarding the conservation status of Long-billed Curlews due to loss of portions of their historical breeding range and apparent population declines, particularly in the short-grass and mixed-grass prairies of the western Great Plains.

The Montana Long-billed Curlew project was undertaken to fill gaps in scientific knowledge of the migrations of Long-billed Curlews originating from breeding grounds in Montana, and was a component of the larger Pacific Shorebird Migration Project (<http://alaska.usgs.gov/science/biology/shorebirds/migration.php>) which tracked curlews from breeding grounds in Oregon and Nevada. The Montana Long-billed Curlew project was initiated by the US Geological Survey – Alaska Science Center (USGS – ASC), Point Blue Conservation Science, World Wildlife Fund's Northern Great Plains Program, The Nature Conservancy Montana, and The Nature Conservancy Migratory Bird Program.

The project area was situated within the northern Great Plains in the Prairie Pothole Region, which is one of the regions encompassing the greatest abundance of breeding Long-billed Curlews throughout their current range. More specifically the study took place in Phillips County in north central Montana, bounded by the Milk River to the north and the Missouri River to the south. The topography was composed of predominantly flat to rolling upland grasslands and sagebrush steppe, and the dominant land use in the project area was cattle grazing.

In May of 2009 and 2010, 14 adult curlews were located and captured on nests. Despite their size and the relatively well grazed short grass in which they prefer to make their nests, curlews were remarkably well camouflaged, and tended to remain perfectly still with their long bills laid flat on the ground when approached. Their mottled brown

feathers often left us creeping up on surprisingly similar looking cow pats, likely an adaptation to resemble the pats of the once abundant bison on the grasslands of North America. Finding nests was in fact the most time consuming activity and averaged over 8 person hours per nest.

When a curlew was captured it was sexed, weighed, and equipped with an 18g solar-powered Argos PTT. PTTs were attached using a leg-loop backpack-harness with Teflon straps. After PTT attachment the curlew was released back to its breeding territory. The transmitters were programmed to transmit for 10 hours and to rest for 24 hours. CLS America (Argos) provided the raw data, which was subsequently processed using software developed by USGS-ASC (Douglas Argos-Filter Algorithm).

The results of the tracking of Long-billed Curlews in Montana, Oregon and Nevada were published in the peer reviewed journal *The Condor: Ornithological Applications* (Vol. 116, 2014, pp. 50-61) in a research article entitled

"Annual migratory patterns of Long-billed Curlews in the American West." With respect to the 14 curlews tagged in Montana we found that all wintered within the species' known winter range, wintering



Photo by Dennis Linghor

inland from the Texas Panhandle south to the Mexican Plateau, or near the Gulf of Mexico. Montana breeders migrated east of the Rocky Mountains and traveled more than twice the distance of Oregon and Nevada breeders. Montana birds all exhibited stopovers; not all birds tagged at other sites did. Montana birds also stopped more often and longer during most passages. Individuals exhibited strong fidelity to breeding and wintering sites, though pairs tended not to winter together, and many birds showed a strong propensity for agricultural regions during winter. Ultimately the project results underscored the importance of tracking migration across multiple breeding populations to capture broad variation in migration patterns and findings that curlews from Montana, Oregon and Nevada all occupied agricultural landscapes during winter suggesting that they are important to Long-billed Curlews at this time of year.

The project partners were excited by the prospect of using tags that were sufficiently small and light to place on Long-billed Curlews, which of course was enabled by the fact that the PTTs were solar powered. However, few might anticipate that now five years and five months after their initial deployment in May 2009 two units are remarkably still sending data on the movements of tagged curlews, revealing the value of both the technology and the company that produced it to those seeking novel insight through tracking.

Photo by Nils Warnock - Audubon Alaska



Dennis Jorgensen releasing a PTT tagged curlew in the northern Montana prairies.