

Table 2.1. Recommended prioritized conservation actions for Long-billed Curlews (LBCU) throughout their range. This list serves to identify conservation action items that could lead to the conservation of this species. Where "Lead party" has been identified it is not meant to obligate any party to provide funding or implement the action. In a few cases, potential partners and costs have been identified; in most cases that needs to be completed.

Task	Action Group	Annual Cycle	Action Item	Lead party	Potential Partners	Cost (K) per year	Cost (K) Total	Duration	Comments
1.0	Population Monitoring and Assessment	Breeding	Test inherent assumptions of the BBS	FWS					
1.1	Population Monitoring and Assessment	Breeding	Detectability as a function of density, i.e., is the proportion detected a function of the number of birds present.	FWS	USGS, state agencies, NGOs	10K	10K	1yr	
1.2	Population Monitoring and Assessment	Breeding	Road bias. Do trends along roads mirror the landscape in general for LBCU?	FWS	USGS, state agencies, NGOs	10K	20K	2yr	
2.0	Population Monitoring and Assessment	Breeding	Test/develop methods to improve the poor precision of the BBS. This project will include 2.1 and 2.2, below. The area of this project is ND, SD, e. MT.	FWS	State agencies, NGOs	21K	42K	2yr	N. Niemuth, and S. Jones, in 2009-2010
2.1	Population Monitoring and Assessment	Breeding	Increase the number of routes and evaluate the effect.	FWS	Above				Above
2.2	Population Monitoring and Assessment	Breeding	Time-of-year. Examine by comparing data collected in rangewide survey vs. BBS data. BBS routes will be run during 1-15 May.	FWS	Above				Above
3.0	Population Monitoring and Assessment	Migration	Identify and map migratory pathways and important stop-over sites between breeding grounds and the wintering grounds.	FWS, state agencies					
4.0	Population Monitoring and Assessment	Migration	Determine movements of birds to and from breeding sites; timing, locations of critical migratory stop-over, and length of stay.						

5.0	Population Monitoring and Assessment	Migration	Determine micro-habitat requirements for migration sites.						
6.0	Population Monitoring and Assessment	Wintering	Complete a map of current Long-billed Curlew wintering range and habitat.	FWS, state agencies, Mexico					
7.0	Population Monitoring and Assessment	Wintering	Assess the importance of wintering sites through LBCU range.						
8.0	Population Monitoring and Assessment	Wintering	Determine important areas that support winter roosts.						
9.0	Population Monitoring and Assessment	Wintering	Determine distribution, abundance, and habitat use of LBCU wintering at inland and coastal sites.						
10.0	Population Monitoring and Assessment	Wintering	Assess existing levels of conservation protection for wintering habitats.						
11.0	Population Monitoring and Assessment	Wintering	Conduct research on Long-billed Curlew wintering ecology.						
12.0	Population Monitoring and Assessment	Wintering	Determine importance of water, and required distance from wintering areas.						
13.0	Population Monitoring and Assessment	Wintering	Determine threats and limiting factors on the wintering grounds.	WHSRN, state agencies, federal agencies					
14.0	Population Monitoring and Assessment	Wintering	Quantifying the effects of disturbance on coastal wintering grounds e.g. human recreational activity, particularly on foraging rates and habitats.	Universities, NGOs	FWS				
1.0	Habitat Assessment and Management	Breeding	Determine micro- and macro-habitats across the breeding range, using data from rangewide survey.	FWS	Texas A & M	10K	10K	1 year	Completed, Saalfeld et al. 2008.
2.0	Habitat Assessment and Management	Breeding	Improve LBCU breeding habitat in North America, including publishing recommendations as Best Management Practices.	Shorebird Temperate Group; JVs	FWS, USGS, NGOs				

2.1	Habitat Assessment and Management	Breeding	Improve LBCU breeding habitat and Best Management Practices - Northern Prairies.	JVs	FWS, USGS, NGOs	10	10	1yr
2.2	Habitat Assessment and Management	Breeding	Improve LBCU breeding habitat and Best Management Practices - Great Basin and sagebrush grasslands.	JVs	FWS, USGS, NGOs	10	10	1yr
2.3	Habitat Assessment and Management	Breeding	Improve LBCU breeding habitat and Best Management Practices - shortgrass prairies.	JVs	FWS, USGS, NGOs	10	10	1yr
3.0	Habitat Assessment and Management	Breeding	Determine minimum habitat requirements.					
4.0	Habitat Assessment and Management	Breeding	Determine effects of energy development, particularly oil and gas and wind farms; determine appropriate mitigation recommendations.					
4.1	Habitat Assessment and Management	Breeding	Assess effects of wind power and oil/gas development - habitat fragmentation.					
4.2	Habitat Assessment and Management	Breeding	Assess effects of wind power and oil/gas development - infrastructure.					
4.3	Habitat Assessment and Management	Breeding	Assess effects of wind power and oil/gas development - nesting success.					
4.4	Habitat Assessment and Management	Breeding	Assess effects of wind power and oil/gas development - interference with breeding/territorial display/defense.					
4.5	Habitat Assessment and Management	Breeding	Assess effects of wind power and oil/gas development - strike hazard.					
5.0	Habitat Assessment and Management	Breeding	Assess effects of invasive species (e.g. cheatgrass) on LBCU nesting success, across the geographic and habitat range of the species.					

6.0	Habitat Assessment and Management	Breeding	Determine the best timeline for habitat restoration, seed mixtures, and the response to restoration, across its range.						
7.0	Habitat Assessment and Management	Breeding	Determine if collisions are a threat and methods to reduce/mitigate risks from collisions (e.g. wind farms, communications towers).						
8.0	Habitat Assessment and Management	Migration	Protect, restore, and protect migration and staging habitat.	WHRSN, JV, state agencies					
9.0	Habitat Assessment and Management	Wintering	Protect and improve LBCU habitat in wintering grounds.						
1.0	Research	Breeding	Reduce critical knowledge gaps regarding demographics, population size and trend, adult survival, and life history.	Researchers, USGS	Universities, NGOs, state agencies				
1.1	Research	Breeding	Estimate reproductive success and breeding habitat use in geographic areas where information is lacking.	FWS	State agencies, NGOs				
1.2	Research	Breeding	Determine adult and juvenile survival rates across breeding range and in a variety of micro-habitats.						
1.3	Research	Breeding	Increase knowledge about dispersal patterns (juvenile and adult) and factors affecting dispersal.						
2.0	Research	Breeding	Assess potential effects of various non-habitat limiting factors.						
2.1	Research	Breeding	Assess role of water in different areas, and at different stages in the reproductive cycle.						
2.2	Research	Breeding	Evaluate the effect of predation across a wide geographic range.						
2.3	Research	Breeding	Evaluate the effect of cattle/bison grazing at different stocking rates and rotation timing.						

2.4	Research	Breeding	Evaluate the effects and timing of other disturbances (e.g. haying, fire).						
3.0	Research	Breeding	Compile information on reproductive success from across the breeding range, for an evaluation for a population viability analysis.						
4.0	Research	Breeding	Assess how important and extent of colonial and semi-colonial nesting.						
5.0	Research	All	Assess importance of contaminants such as pesticides, heavy metals.						
6.0	Research	Breeding	Investigate correlations between climate changes, timing of spring arrival of LBCU on breeding grounds.						
1.0	Education and Outreach	Breeding	LBCU projects for education and outreach on the value of conserving intact native shortgrass and mixed-grass prairie.						