

Long-billed Curlews and Grasslands in BC

David Bradley, Birds Canada

Grassland bird populations in North America are not doing well. The State of Canada's Birds report produced in 2019 revealed that this group of birds has declined by 57% since 1970. At Birds Canada, this alarming report is a wakeup call to focus our work more clearly to benefit birds living in our grassland and agricultural landscapes. To this end, in 2017 we began a study of Long-billed Curlews breeding in the East Kootenay grasslands at the Skookumchuck Prairie Important Bird and Biodiversity Area. This work had three main aims: to fit satellite transmitters to curlews to track their movements over a full year, to determine the breeding success of those birds in a natural prairie environment, and to connect with farmers and local naturalists in the area to learn from them about the species and what it means to them. Through this project, we were able to track the birds as they migrated to southern California for the non-breeding season and returned in the spring. In 2019 and 2021, we followed this study to an agricultural area near Prince George, to



determine if birds breeding on farms there also faced similar threats throughout their life cycle as those in natural grasslands. In doing so, we were able to meet with farmers and landowners to speak with them about curlews and even tag birds that bred on their land, which was a fantastic experience for both the farmers and the Birds Canada team.

In 2022, we initiated a BC-wide citizen-science curlew survey to get a handle on the numbers of birds in the province. This survey followed a similar protocol to a survey conducted across the North American breeding range of curlews in 2004-2005, whereby between April 23rd and May 13th observers surveyed along pre-defined roadside routes approximately 30 km long stopping every 800m to conduct focal counts. Each stop consisted of a 5-min point count where all curlew individuals seen or heard within the 400-m radius circle were recorded. Additionally, the observers noted down broad habitat and weather variables at each stop for inclusion in statistical models.

The survey was completed by 150 volunteers who surveyed 1,576 point count stations over 95 routes in 5 general regions: Okanagan, Kootenay, Thompson, Cariboo-Chilcotin, and Omineca regions. A total of 270 individual curlews were detected on 60% of the survey routes (57 of 95 routes), representing a minimum population estimate for the province. Interestingly, 41% of these curlews (110 birds) were detected in the Cariboo-Chilcotin region, likely because of a higher sampling effort due to routes previously being surveyed in 2021 and hence a potentially biased route selection. A further 31% of birds (83 birds) were detected in the Omineca region, 20% (53 birds) in the Kootenays, 7% (20 birds) in

the Thompson, and 1% (4 birds) in the Okanagan. On average, 0.17 curlews were detected per point count station, which represents a density of 0.34 curlews/km². Curlew density seemed to decrease along a North-South gradient, with the highest density (by far) in the Prince George-Nechako region (0.70/km²), followed by Cariboo-Chilcotin (0.41/km²), Kootenay (0.33/km²), Thompson (0.11/km²), and Okanagan regions (0.06/km²). When extrapolated out to the entire province based on the amount of grassland and suitable farmland habitat, we derived an estimate of between 2,693 and 10,681 birds. These estimates are within the range previously made in 2004 (2,934) and 2005 (7,436).

These results have revealed an interesting trend about the distribution of those birds. The Omineca region had no curlews prior to around the early 2000's, after which sightings and breeding records in the region have increased steadily. In contrast, the numbers of birds found in the southern portion of their BC range has decreased dramatically in the past few decades. This shift from a southern distribution in natural grasslands to a northern distribution where curlews now predominantly occupy hay fields and seeded pasture may be the result of a combination of shifting land use patterns and the effects of climate change. However, a cautionary note can be found in the limit to how far the range of curlews can expand northwards as the availability of suitable habitat north of the Prince George-Vanderhoof area is limited by the vast forests of central BC. The ability of the birds to use low-intensity agricultural land as habitat is a positive sign for the species, despite the loss of grassland habitat in southern parts of the province. We hope to repeat the survey every few years to confirm the curlew's range distribution in the province and determine population trends.

Lastly, we would like to thank the 150 volunteers who gave up their valuable time to collect the data for the study, as well as Environment and Climate Change Canada for funding this work.

