

Note

First confirmed nest of Long-billed Curlew (*Numenius americanus*) in roadside brush stubble

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Abstract

Long-billed Curlew (*Numenius americanus*) typically nests in open grass habitat, such as native grassland, hayfields, or cow pasture. In May 2019, we discovered a Long-billed Curlew nest in the dense roadside shrub stubble near Prince George, British Columbia. The shrub stubble substrate for this nest appeared to be taller and denser than adjacent hayfields, which reduced the visibility of the nest site. The eggs in this nest were the first to hatch of the 11 curlew nests we monitored in the area.

Key words: Concealment; Long-billed Curlew; nesting; *Numenius americanus*

Long-billed Curlew (*Numenius americanus*) typically nests in open grassland habitats, from native grassland to agricultural lands, such as hay fields and cattle pastures. Long-billed Curlew nests are often found in areas of variable vegetation density and height (Dugger and Dugger 2020), and are often constructed close to cow pies and other mounds or objects (Cochrane and Anderson 1987; Coates *et al.* 2019). In general, the surrounding vegetation to nests is below 10 cm high at nest initiation (Dugger and Dugger 2020) and nesting success has been found to be higher when forb cover is lower (Gregory *et al.* 2011). In Utah, vegetation surrounding Long-billed Curlew nests (within 15 m) was significantly shorter than random sites (Paton and Dalton 1994), meaning curlews typically prefer shorter vegetation. The Birds of British Columbia (1990) documents curlew nest site preference of dry grasslands and avoidance of dense grass and shrubs (Campbell *et al.* 1990). In rare cases, curlews are known to nest in cropland (Devries *et al.* 2010).

During May to June 2019, we studied Long-billed Curlews around Prince George, British Columbia in the most northerly breeding latitude documented for this species (Davidson and Mahony 2015). On 9 May at 1000 we found a Long-billed Curlew nest in

mowed roadside stubble, within 4 m of both the road edge and the adjacent hay field fence.

This nest, along Wright Creek Pit Road, Prince George, British Columbia (54.13846°N, 122.77565°W), was 3.31 m from the gravel road edge, and 3.78 m from the fence line of the adjacent hay field (Figure 1). The vegetation within 1 m of the nest was made up of a variety of shrub, tree, and wildflower species (percent cover within 1 m: spirea [*Spiraea* sp.] 60%, Trembling Aspen [*Populus tremuloides* Michaux] 20%, Giant Red Paintbrush [*Castilleja miniata* Douglas ex Hooker] 5%, Arctic Lupine [*Lupinus arcticus* S. Watson] 5%, peas [family Fabaceae] 5%, and buttercups [*Ranunculus* sp.] 5%). There were also three or four small forb species under the larger and woodier species. Besides estimated percentage cover, vegetation measurements were not made. The nest (Figure 1) had a diameter of 14–18 cm and a depth of 3.5 cm.

The day after finding the nest, we flushed the female from the nest in order to float the eggs. Based on the egg floating (Hays and Lecroy 1971; Stocking *et al.* 2010), we estimated the incubation of the nest to have started 7–10 days earlier, or about 30 April–2 May.

This nest was the third nest (hereafter N3) we found in the 2019 season, of 11 discovered nests within a 325 ha study area. Including N3, we found



FIGURE 1. Long-billed Curlew (*Numenius americanus*) nest N3 along rural road in Prince George, British Columbia (May 2019) showing four eggs. Photo: G.H. Sorenson.

seven nests that were successful (fledged), two due to hatch after our field season (still incubating), and two nests that failed during laying and incubation (Figure 2). Within 300 m of N3, we found three other curlew nests, all in relatively uniform hayfield (Figure 2). At the time we discovered N3, the adjacent hay fields all had grass heights <10 cm, making nesting curlews visible at a distance. At the same time, N3 was very well concealed in ~20–30 cm tall, previously-mowed shrubby vegetation. Photos of N3 taken within a day of other nearby nests demonstrate the increased concealment of N3 (Figure 3a,b) relative to N2 (Figure 3c).

We monitored all of the nests found in the Wright Creek Pit Road area to determine hatching date, fledging success, and survival. N3 was the first to hatch, fledging four chicks on 27 May. One nest, about 60 km south, hatched on 26 May, while six of the nests we monitored hatched between 28 May and 13 June (and two nests were still being incubated when we left the field site on June 14). All but one of the 11 monitored nests at Wright Creek were likely first attempts (four eggs in nest, one possible second attempt with three eggs). N3 hatched one day earlier than nearby nests and successfully fledged all four chicks. Not only was the nest better concealed, but the brown cryptic colouring of Long-billed Curlew appeared to better match the brown shrub stubble than the tan and green hayfields, suggesting better camouflage as well as concealment (Figure 3).

Stevens *et al.* (2017) suggested that ground-nesting birds can choose the backgrounds in which they nest to provide better camouflage. Indeed, Coates *et al.* (2019) suggested camouflage was a possible reason Long-billed Curlews placed their nests near cow pies. Stevens *et al.* (2017) documented two strategies of camouflage in ground nesting species: those which flee at the approach of a predator and rely on their egg's camouflage and those which remain on the nest, thus relying on the camouflage of the adult plumage. Long-billed Curlews fit in this latter group, relying on their cryptic plumage and lack of movement to protect them from predators (Dugger and Dugger 2020). Upon our approach of nests, curlews often remained still on the nest even when we stood within 1–2 m of the nest for several minutes. Long-billed Curlew eggs are rarely left unattended (Dugger and Dugger 2020), but are also cryptically coloured (Allen 1980). The eggs in the roadside stubble nest did not appear to have any camouflage differences from those in the hay field nests we observed.

Further monitoring and study is required to determine if the Long-billed Curlews nesting in denser vegetation that we observed may have allowed earlier nesting and contributed to nesting success. The nesting substrate of N3 was quite different from the other nearby Long-billed Curlew nests we monitored and from those observed in other nest description studies (Gregory *et al.* 2011; Dugger and Dugger 2020).

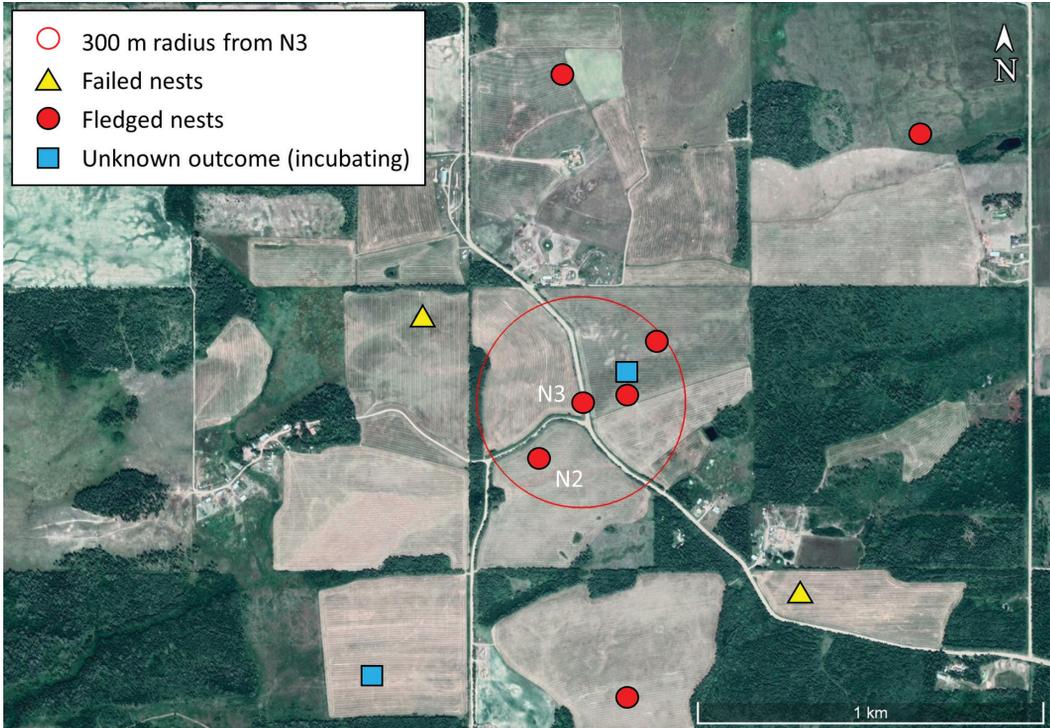


FIGURE 2. Map of nesting locations of Long-billed Curlew (*Numenius americanus*) in Wright Creek Pit Road area (Prince George, British Columbia, 2019) centred on nest N3. Eleven nests were found and monitored within the local study area. Google Earth Imagery date: 29 July 2018. Data providers: Maxar Technologies 2020. Accessed July 2020.

Author Contributions

Writing – Original Draft: G.H.S.; Writing – Review & Editing: G.H.S., D.W.B., and A.L.H.; Conceptualization: G.H.S., D.W.B., and A.L.H.; Investigation: G.H.S. and A.L.H.; Funding Acquisition: D.W.B.

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FIGURE 3. Long-billed Curlew (*Numenius americanus*) nest N3 and nearby nest N2 taken within 24 h: a. N3 with female on nest from level of bird in early morning sunlight, 10 May 2019, 0602; b. N3 with female on nest from another angle, 10 May 10, 1026; c. nearby nest (N2) with female on nest, 9 May 2019, 0950. Photos: G.H. Sorenson.

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