SPECIES ACCOUNT

Species Data

Common Name:	Long-billed Curlew
Scientific Name:	*Numenius americanus*
Species Code:	B-LBCU
BC Status:	Blue-listed
Identified Wildlife Status:	Version 2
COSEWIC Status:	Special Concern

Project Data

Project Name:	Bella Vista / Goose Range Sensitive Ecosystems Inventory
Project Type:	Terrestrial Ecosystem Mapping
Area:	North Okanagan
Ecoprovince:	Southern Interior
Ecoregions:	Thompson-Okanagan Plateau
Ecosections:	Northern Okanagan Basin (NOB)
BGC Units:	IDFxh1
Map Scale:	1:20 000

Distribution

Provincial Range

Long-billed Curlews are widely distributed throughout the central-southern interior of BC. Birds sporadically appear on the south coast during migration, where they are restricted to estuaries, mudflats, airports, or other open grassy areas (BC Environment 1997). Breeding range is restricted to the dry grasslands of the southern interior, north at least to Riske Creek (Campbell *et al*. 1990). Very dry subzones (xh, xm, xw) of the BG, PP and IDF biogeoclimatic zones are used, as well as agricultural areas of otherwise unsuitable zones (Cannings 1999). Breeding populations are disjunct, and centred in the following areas (Cannings 1999):

1. East Kootenay (Grasmere/Tobacco Plains, St. Mary's Prairie/Wycliffe, and Skookumchuck Prairie)
2. Creston (grain fields from Duck Lake south to the US border)
3. South Okanagan-Similkameen (Chopaka and Osoyoos north to Penticton)
4. North Okanagan (Swan Lake and the north end of Okanagan Lake north to Grindrod and east to Lumby)
5. Thompson-Nicola (Chase east to Cache Creek)
6. Fraser-Chilcotin-Cariboo (Fraser Valley from Lillooet north almost to Quesnel, and the Chilcotin Valley west to at least Alexis Creek)
7. McBride (relatively new; birds first seen in 1978)

- New breeding populations also may occur at Vanderhoof and Prince George.

The highest breeding concentrations occur in the Fraser-Chilcotin area (Cannings 1999).

Elevation Range

Breeding is restricted to elevations between 280 and 1220 metres, and generally occurs below 600 metres (Campbell *et al.* 1990, Cannings et al. 1987).

Distribution in the Project Area

Breeding is known from surrounding areas at the head of Okanagan Lake and the Vernon Commonage. A 1995 survey found 12 birds in cultivated fields in the North Okanagan (Siddle 1995), a drastic reduction from the 61 birds counted in 1982 (Cannings 1999).

Ecology and Habitat Requirements

Curlews arrive in BC in late March to mid-April, and generally depart in July or early August (Campbell *et al.* 1990, Cannings 1987). Nesting begins in April or the first half of May, and most clutches are initiated around the third week of May (Cannings 1987). Nests consist of a shallow scrape on the ground usually lined with grasses, bits of cow dung or a few twigs (Cannings *et al.* 1987). Clutch size ranges from two to five (Cannings 1999). Young curlews are precocial; they will toddle out of the nest even before they are dry, and appear to start pecking food off the ground by the second day (Allen 1980). Fledging occurs in early July, when the southerly migration of adults begins (Cannings 1999). Females generally depart first, followed by males and then juveniles in late July.

Curlews frequent grasslands, as well as newly ploughed fields, green hayfields, meadows, and pastures, not necessarily near water (Campbell et al. 1990). They prefer flat or gently rolling topography (Hooper and Pitt 1996), but have been documented on gentle to moderate slopes (Ohanjanian 1987). Nesting generally occurs on dry, open grasslands with low profile vegetation, but they will also use ploughed and planted fields during migration, brood-rearing, and even nesting season (Canings 1999).

Curlew pairs show strong site fidelity to nesting territories, which tend to be clumped (Cannings 1999). Territory size is highly variable, ranging from 12 ha in Idaho, and 20-30 ha at Skookumchuck Prairie, to 176 ha in Washington (Cannings 1999, Ohanjanian 2002). Pairs do not normally nest closer together than 250 m (Allen 1980). Nesting birds require large contiguous openings at least 250 m wide with low profile vegetation (De Smet 1991, BC Environment 1997, Fraser *et al.* 1991). A 200-400 metre buffer between nesting territory and unsuitable habitat, such as trees, or regular human/livestock disturbance is also required (Ohanjanian 1992). Brood rearing requires larger areas, with home ranges of up to 1000 ha. Ohanjanian (2002) suggests 250 ha to 500 ha for typical WHAs, depending on number of pairs and amount of habitat.

Major food items taken on dry grasslands appear to be insects such as grasshoppers and beetles (Campbell 1972, Cannings *et al.* 1987, De Smet 1992). Other food items include caterpillars, worms, crustaceans, mollusks, toads, eggs and nestlings of other birds, and berries at certain times (Chapman 1995, De Smet 1992). Ohanjanian (1992) found that earthworms are an important forage item, especially in early spring.

Predators of curlews and eggs include Gopher Snake, magpie, raven, Badger, weasels, Coyote, dogs and raptors, particularly Swainson's Hawk, Feruginous Hawk and Great Horned Owl (Cannings 1999). Redmond and Jenni (1986, in Cannings 1999) found that raptors were responsible for 73% of the loss of young.

Reproducing

Security / Thermal Habitat

Nesting territories have been found in cheatgrass and bunchgrass habitats, and occasionally dense low shrub and antelope brush habitats, crested wheatgrass seedings, grain fields, alfalfa fields, fallow fields, and stubble (Ohanjanian 1987, De Smet 1992, Pampush and Anthony 1993).

Curlews prefer habitats with very short grass for nesting, and are quite tolerant of heavy grazing pressure, often preferring grasslands that have been grazed or burned, or even those covered by cheatgrass (Cannings 1999). In the Chilcotin, short, open vegetation, low shrub cover, high grass cover, and reduced patchiness of bare ground are preferred (Hooper and Pitt 1996). Areas with grasses greater than 20 cm high are not heavily used, and the presence of trees, large bushes or tall, thick patches of grasses and sagebrush inhibits breeding (Campbell *et al.* 1990, De Smet 1992). Preferred vegetation profile during nesting is described as less than 10 cm tall, with less than 40% coverage of vegetation 30 cm tall (Ohanjanian 2002).

Hooper and Pitt (1996) found that numbers of birds increased with spring and summer grazing levels. While grazing of native grasslands may benefit curlews, by preventing full vertical growth of grasses and forbs (Pampush 1980), the response to grazing is probably negative in shrub-steppe habitats, due to increased shrubby vegetation (Bock *et al.* 1992). Birds likely still require some bunchgrass for cover and for thermal cover for chicks (Bryan and Mulholland 1992). Late summer or fall grazing is likely beneficial, by keeping the vegetation profile low, while avoiding range degradation and potential trampling of eggs and young.

Living

Food

Curlews forage in croplands and grasslands, including those dominated by cheatgrass, throughout the breeding season (Pampush and Anthony 1993). During brood rearing and outside the breeding season, seepage areas, hayfields and irrigated fields are used for foraging (Fraser *et al.* 1991). While nesting occurs in short grass habitats, broods are also reared where vegetation is higher, often wetter meadows (Cannings 1999).

In West Idaho, birds flew to forage sites within 10 km of their territory (Pampush and Anthony 1993). Forage flight distance is unknown in BC.

Ratings

This model employs a 4-class rating scheme because there is insufficient knowledge of habitat requirements to use a 6-class scheme yet there is sufficient knowledge to go beyond a 2-class rating scheme. This complies with the recommended rating scheme in the RIC standards manual (1999).

Provincial Benchmark

Ecosection	Chilcotin Plateau
Biogeoclimatic Units	BG, PP, IDF (xh, xw, xm)
Habitats	Plateau grasslands

Map Themes

Habitat Use	Life Requisite	Season	Rating Code	Ecosystem Attributes
Reproducing	Security	Spring	RE	• dry, open habitats with low profile vegetation (cheatgrass or grazed bunchgrass grasslands)
Living	Food	Growing season	LIG	• grasslands, meadows, agricultural areas

Ratings Assumptions

Reproducing – Security/Thermal Habitat (RE)	
Site Series	• Grasslands and dry pastures rated up to High • Shrub-steppe, cultivated fields and meadows up to Moderate
Structural Stage	• Stage 2 rated up to High. Stage 3 rated up to Moderate
Shrub Density	• Dense rated down 1
Range Condition	• Cheatgrass or Poa seral assoc. rated up to High, knapweed rated up to Low (it is assumed that Poa will be grazed to low profile in the study area)
Aspect	• No effect on rating
Slope	• Moderate slopes rated up to Moderate, steep slopes rated Nil
Soil Texture	• No effect on rating
Soil Depth	• No effect on rating
Living – Food (LIG)	
Site Series	• Grasslands, hayfields and meadows rated up to High • Shrub-steppe up to Moderate
Structural Stage	• Stage 2 rated up to High. Stage 3 rated up to Moderate
Shrub Density	• Dense rated down 1
Range Condition	• No effect on rating
Aspect	• No effect on rating
Slope	• Steep slopes rated Nil
Soil Texture	• No effect on rating
Soil Depth	• No effect on rating

Map Interpretation

Two map themes are generated from this model, nesting (RE) and general living during the growing season (LIG), which encompasses foraging and brood rearing. Nesting overlays general living on the map.

Nesting suitability values are portrayed by dot density, which applies dot of various shades (darker =higher suitability), randomly within the polygon, based on the percent area of the polygon with that rating.

Very little foraging habitat that is not already considered suitable nesting habitat (e.g. pastures and hayfields) occurs in the study area. Foraging values are therefore very similar to nesting values, and will not be displayed on the map.

Interpretation of the habitat map should address the size of suitable areas, as curlews prefer contiguous openings at least 250m wide. Proximity to trees also affects the use of the area, as curlews are less likely to nest adjacent to forest. Polygons containing treed areas (structural stages 4-7) are highlighted on the map for this purpose.

The grassland ecosystems curlews prefer are affected by both short- and long-term grazing practices. Recent grazing can lower the vegetation profile, creating the short grass structure preferred. The more gradual change in species composition from disturbance can have both positive and negative impacts. Higher cheatgrass cover and less tall bunchgrasses improve suitability for curlews, while an increase in other weed species such as knapweed, or shrubs such as sagebrush, will reduce suitability. Because the effects from grazing may be constantly changing, the habitats predicted by this model may have fluctuating values, but are not likely to change to or from Nil without drastic impacts.

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Long-billed Curlew Suitability Map