

# LONG-BILLED CURLEW

## *Numenius americanus*

Original<sup>1</sup> prepared by I.A. (Penny) Ohanjanian

### Species Information

#### Taxonomy

The Long-billed Curlew (*Numenius americanus*) is the largest member of the sandpiper family, Scolopacidae, to breed in British Columbia. Two subspecies are recognized by some researchers, the lesser Long-billed Curlew (*N. americanus parvus*) which nests in Canada and the northern United States, and the greater Long-billed Curlew (*N. americanus americanus*) which occurs farther south (Allen 1980; Cannings 1998). Genetic work has not yet been carried out to determine if this distinction is valid.

#### Description

The Long-billed Curlew is a large, long-legged shorebird found primarily in grassland habitats during the breeding season. It has mottled, light brown plumage, a buff-coloured breast, and cinnamon underwing linings. The bill is long and curves downwards, reaching a length of up to 195 mm in females and 140 mm in males (Jenni et al. 1982).

#### Distribution

##### Global

In the United States, Long-billed Curlews breed west of the Mississippi River in Washington, Oregon, northeastern California, Idaho, Nevada, central Utah, northern New Mexico, northern Texas, northwestern Oklahoma, Wyoming, Montana, Colorado, North Dakota, South Dakota, Nebraska, and western Kansas (Sauer et al. 2000). Since the early 1900s they have been extirpated from much of their historic range (Allen 1980; De Smet 1992). The major wintering areas for Long-billed Curlews are the coastal lowlands of California, the inland grasslands of the Central Valley, west Texas, eastern New Mexico, and along the Gulf coast in Texas and

Louisiana (Sauer et al. 2000). De Smet (1992) has also reported this species wintering in the coastal lagoons of southern Mexico and south to Venezuela.

During the last century in Canada, curlew numbers have declined and the breeding range has shrunk. Formerly a breeder in southern Manitoba, the species is now listed as extirpated (De Smet 1992; Sauer et al. 2000). Long-billed Curlews remain in Saskatchewan (Smith 1996, cited by Hill 1998) but no longer occupy some of their historic range in the southeastern portions of the province (De Smet 1992). In Alberta, Long-billed Curlews breed in the southern half of the province, with the highest densities in the grasslands south of Red Deer (Hill 1998).

##### British Columbia

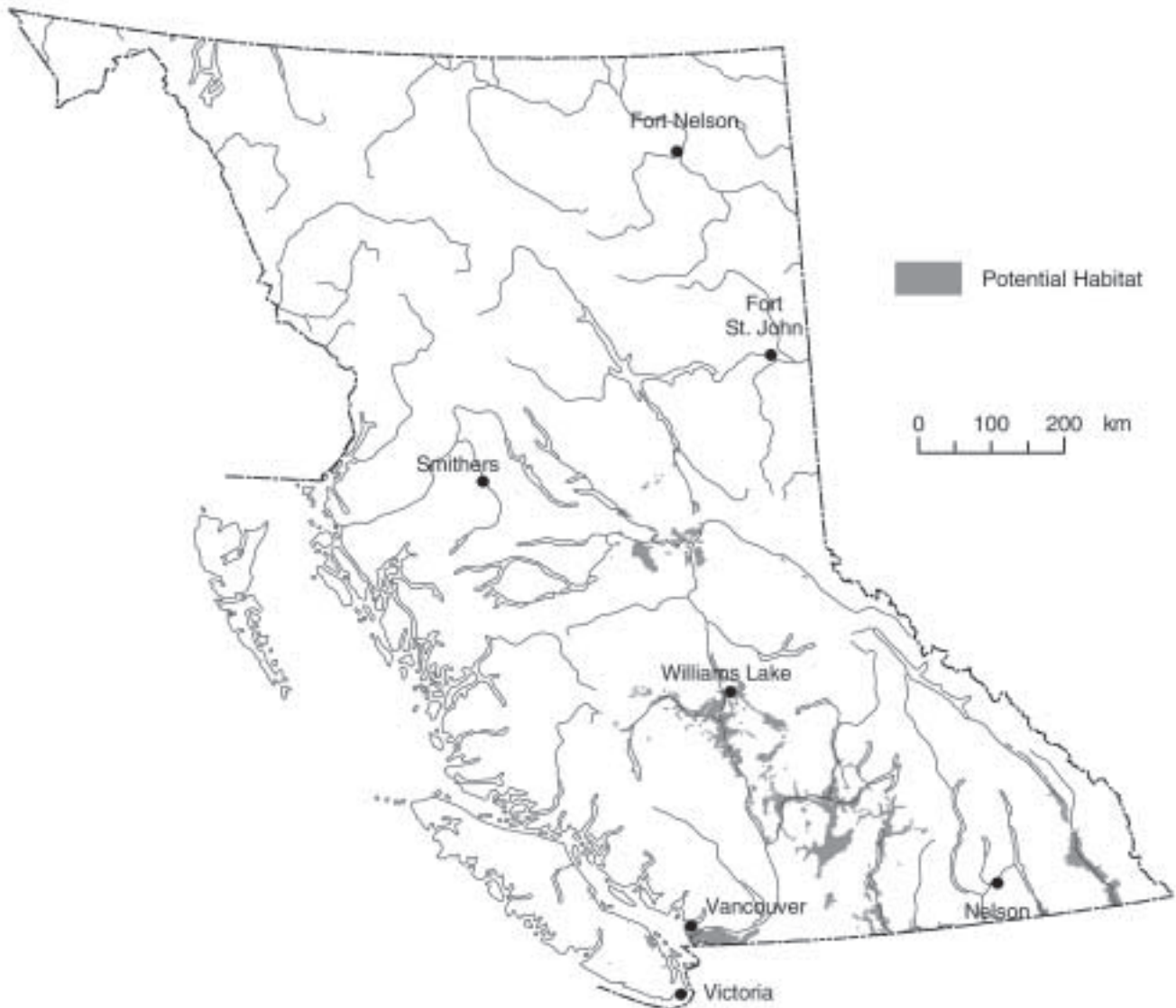
Non-breeding birds are widely distributed through the south-central Interior, north to the Nechako Lowland. This shorebird appears sporadically on the south coast during spring and autumn migration, where it is restricted to estuaries, mudflats, airports, or other open grassy areas.

The Long-billed Curlew breeds in the southern Interior. Breeding areas are fairly disjunct and include areas from (1) Lillooet north to Quesnel (Chubb Lake), (2) the Chilcotin west to Alexis Creek, (3) the south Okanagan and lower Similkameen valleys, (4) the North Okanagan, (5) the Thompson-Nicola, and (6) the East Kootenay Trench (Cannings 1999). Small populations breed in agricultural cropland near McBride and in the Creston Valley (Van Damme 1996, cited by Cannings 1999). Records outside the periphery of its breeding range suggest that it may breed over a slightly larger range than currently documented. Breeding does not occur on the coast.

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<sup>1</sup> Volume 1 account prepared by M. Sarell.

## Long-billed Curlew (*Numenius americanus*)



Note: This map represents a broad view of the distribution of potential habitat used by this species. The map is based on several ecosystem classifications (Ecoregion, Biogeoclimatic and Broad Ecosystem Inventory) as well as current knowledge of the species' habitat preferences. This species may or may not occur in all areas indicated. More detailed maps are available for this species from the Ministry of Sustainable Resource Management.

### ***Forest region and districts***

Coast:<sup>2</sup> Campbell River, Chilliwack

Northern Interior: Fort St. James (possible),  
Prince George, Vanderhoof

Southern Interior: 100 Mile House, Arrow Boundary,  
Cascades, Central Cariboo, Chilcotin, Headwaters,  
Kamloops, Kootenay Lake, Okanagan Shuswap,  
Quesnel, Rocky Mountain

### ***Ecoprovinces and ecoregions***

CEI: CAB, CHP, FRB, QUL

COM: WIM

GED:<sup>2</sup> FRL, NAL

SBI: NEL

SIM: EKT, ELV, SCM, UCV, UFT

SOI: GUU, NIB, NOB, NOH, NTU, OKR, PAR,  
SHB, SOB, SOH, STU, THB

### ***Biogeoclimatic units***

BG: xh1, xh2, xh3, xw, xw1, xw2

CDF: mm

CWH: dm, vh1, vh2, vm1, xm1

ICH: xw

IDF: dk1, dk2, dk3, dk4, dm2, mw1, mw2, mw2a,  
xh1, xh1a, xh2, xh2a, xm, xw

PP: dh1, dh2, xh1, xh2, xh2a

SBS: dh, dw3, mk1

### ***Broad ecosystem units***

AB, BS, CF (in FRL only), DF, ES, ME, SS

### ***Elevation***

280–1220 m (Campbell et al. 1990; Fraser et al. 1999)

## **Life History**

### **Diet and foraging behaviour**

On the breeding grounds, adult Long-billed Curlews have been observed eating ground beetles (Allen 1980), and grasshoppers (Redmond and Jenni 1985) as well as earthworms in nearby irrigated hayfields (Ohanjanian 1985). Grasshoppers and beetles are the predominant prey of chicks, and caterpillars and spiders are also eaten (Redmond and Jenni 1985). In wintering habitats, the Long-billed Curlew feeds on

<sup>2</sup> Non-breeding.

mud crabs, fiddler crabs, ghost shrimps, and occasionally small fishes (De Graaf et al. 1991).

### **Reproduction**

Long-billed Curlews first breed at 2–3 years (females) and 3–4 years (males) (Redmond and Jenni 1986). They nest in dry, open grasslands with low profile vegetation. Nests are shallow scrapes on the ground, from 130 to 275 mm in diameter and approximately 20 to 65 mm deep (Allen 1980). Nest cups may be lined with leaves, twigs, sheep or rabbit pellets, small stones, and grass (Allen 1980; Jenni et al. 1982). Four eggs are usually laid over 1 week (Jenni et al. 1982; Redmond 1984; Campbell et al. 1990). Clutches are initiated from mid-April until the first half of May, with most occurring in the third week of April (Redmond 1984; Cannings et al. 1987). More northerly birds may initiate clutches slightly later than those in the south, but it is unlikely that eggs are laid in any location after mid-May. Both adults share incubation (which takes about 28 days) (Allen 1980) and depend on their cryptic plumage to camouflage their presence. When incubating birds are flushed, they may take up to 1 hour to return to the nest (Allen 1980).

Chicks hatch synchronously, and adults and broods remain within 100–300 m of the nest site for the first few days (Jenni et al. 1982), after which time they become highly mobile. Some chicks become capable of flight at 35–40 days (Jenni et al. 1982), although Fitzner (1978) reports 40–45 days to fledging. Females usually depart from the breeding grounds prior to their chicks being fledged, leaving males to tend broods after the first few weeks (Redmond 1984; De Smet 1992). The young of birds that initiate clutches in the third week of April are generally fledged by the end of June. This date may extend into mid-July for later breeders.

### **Site fidelity**

Both male and female Long-billed Curlews show strong site fidelity, returning each year to previous nesting territories (Redmond 1984). There is evidence that male curlews tend to return to their place of birth to set up a territory and attract a mate when they reach sexual maturity. Long-billed

Curlews are monogamous and have long-term pair-bonds (Redmond 1984).

### Home range

Nesting territory is highly variable in size. In the Chilcotin, nesting curlew densities ranged from a low of 0.73 pairs/100 ha of suitable habitat to 3.4 pairs/100 ha (Ohanjanian 1987). Hooper and Pitt (1996) found breeding densities ranged from 0.7 pair/100 ha to 2.1 pair/100 ha between 1987 and 1992. In the East Kootenay, densities at Skookumchuck ranged from 1 pair/20 ha (1985) to 1 pair/30 ha (Ohanjanian 1992). In southwestern Idaho estimates ranged from 1.74 males/100 ha suitable habitat to a maximum of 8.4 males/100 ha (Jenni et al. 1982). In southeastern Washington, breeding densities ranged from 1 pair/172.6 ha to 1 pair/66 ha in the densest area (Allen 1980). Broods require more space than nesting adults, and home ranges of up to 1000 ha are recorded in the literature (Jenni et al. 1982). Jenni et al. (1982) suggest that a curlew brood requires a minimum of 250 ha.

### Movements and dispersal

Migrants appear from late March through early April during most years. Females may depart from the nesting areas as early as the latter half of June (Redmond 1984) with some males following soon after. Juveniles of the year remain the longest on the breeding grounds, forming feeding flocks and then departing at the end of July (Allen 1980; Redmond 1984).

### Habitat

#### Structural stage

2: herb

#### Important habitats and habitat features

##### *Nesting and brood rearing*

Long-billed Curlews breed in areas with maximum visibility, largely because of co-operative anti-predator mobbing behaviours. They therefore need large contiguous openings of grassland and prefer areas that are gently sloping (Hooper and Pitt 1996). During pre-laying and incubation, areas with low vegetation (<10 cm tall preferred) and a maximum

vertical coverage value of 40% at the height of a curlew's eyes (30 cm) are used preferentially (Allen 1980; Jenni et al. 1982; Ohanjanian 1992). During brood-rearing, higher vegetation (up to 30 cm) may be used, and irregular spacing of taller grass clumps complement chicks' cryptic colouration and provide hiding and shading opportunities for them (Allen 1980; Jenni et al. 1982). Mean width of openings used for nesting at Skookumchuck was 547 m (range 250–900) at the narrowest point (Ohanjanian 1992). A buffer of 300–500 m between nesting territories and non-suitable habitat or human activities has been observed by Bicak et al. (1982) and Jenni et al. (1982).

Use of new crested wheatgrass seedings has been documented in British Columbia, where a high proportion of native plant species were still present and the vegetative profile was low (Ohanjanian 1985). Such seedings will not continue to support the species if left ungrazed; in Idaho, they were avoided because their vertical coverage values were too high (Jenni et al. 1982).

### Migration

This shorebird appears sporadically on the south coast during spring and autumn migration, where it is restricted to estuaries, mudflats, airports, or other open grassy areas (Campbell et al. 1990).

### Foraging

Insects are obtained primarily on the grasslands. Curlews may be seen soon after their arrival in spring, however, earthworms provide immediate, high quality protein in irrigated hayfields (Ohanjanian 1985).

## Conservation and Management

### Status

The Long-billed Curlew is on the provincial *Blue List* in British Columbia. It is designated as a species of *Special Concern* in Canada (COSEWIC 2002).

Summary of ABI status in BC and adjacent jurisdictions  
(NatureServe Explorer 2002)

BC	AB	ID	MT	OR	WA	Canada	Global
S3B, SZN	S3B	S3B, SZN	S4B, SZN	S3S4	S2B, S2N	N4B	G5

## Trends

### Population trends

The population of Long-billed Curlews in the North Okanagan Valley declined considerably between 1982 and 1995 (Cannings et al. 1987; Cannings 1999). The south Okanagan birds appear to fluctuate, and may have done so historically as well (Cannings 1999). The East Kootenay population has increased since the 1970s (Ohanjanian 1992), and new reports of birds at Creston (Van Damme 1996, cited by Cannings 1999) suggest that they may be expanding their range in this region. There is no hard data on current population trends elsewhere in British Columbia. The overall population appears to be stable, with some areas increasing and other decreasing (Cannings 1999).

### Habitat trends

Habitat continues to be lost due to forest encroachment, subdivisions, and conversion of rangelands to agricultural use.

## Threats

### Population threats

In British Columbia, the Long-billed Curlew has a restricted breeding distribution and small population size. Cannings (1999) estimated a minimum population of about 250 breeding pairs. The Long-billed Curlew is a ground-nesting species and therefore experiences high rates of predation on eggs and young. Predators of nests or chicks include coyotes, weasels, badgers, magpies, ravens, dogs, and snakes (Allen 1980; Redmond 1984). If nests are predated, adults do not usually re-nest (Cannings 1999).

### Habitat threats

Major threats to Long-billed Curlew habitat are urbanization, forest encroachment due to fire suppression, noxious weeds, and conversion of native rangelands to agricultural crops such as ginseng and hay (Ohanjanian 1992; Cannings 1999). Hay fields are generally too dense for small chicks to move about in. There are reports of Long-billed Curlews nesting in grain fields (Cannings 1999); their productivity in these habitats, however, has not been ascertained. Cheatgrass (*Bromus tectorum*), an introduced invasive grass, is tolerated and may even be preferred by Long-billed Curlews but other invasive species, particularly knapweed, are thought to be avoided by curlews.

All-terrain vehicles (ATVs) may pose a serious threat in localized areas. Range quality may become degraded as ATV tracks destroy vegetation and facilitate topsoil erosion. ATVs may also cause direct mortality to Long-billed Curlews in several ways: eggs may become overheated leading to heat stress and embryo death while adults are flushed off nests, predators such as ravens may be attracted to chicks by adult alarm calls while they mob human intruders, and nests or chicks may be run over.

Although Long-billed Curlews tolerate and may even benefit from livestock grazing, they may be impacted (e.g., trampling) or disturbed by heavy livestock during critical times during the breeding season.

Pesticides, particularly organochlorines, may also impact curlew breeding success.

## Legal Protection and Habitat Conservation

The Long-billed Curlew, its nests, and its eggs are protected under the federal *Migratory Birds Convention Act* and the provincial *Wildlife Act*.

For the most part, very little of known curlew nesting habitat is protected. Cannings (1999) estimates that <10% of curlews nest within lands protected for conservation. In the south Okanagan and Similkameen, only 6% of curlew habitat is considered to be within lands designated for conservation purposes and 47% is within private land (MELP 1998). In the Cariboo/Chilcotin, some protection is available for a few pairs of Long-billed Curlews at the Junction Provincial Park (410 ha) (Ohanjanian 1987; T. Hooper, pers. comm.). There are also a few pairs in the south Okanagan Wildlife Management Area and at White Lake, which is under long-term lease to Nature Trust (Cannings 1999). In the East Kootenay, one or two pairs nest on properties owned by the province at Bummer's Flats and on Wolf Creek Road. Churn Creek and Lac du Bois may also contain nesting curlews.

Under the results based code, range use plans that consider the requirements of this species may be sufficient to meet the needs of the species. However for a species to be specifically addressed within these plans they must be designated as Identified Wildlife. In some cases, current grazing practices may be adequate to maintain habitats for this species and therefore it may not be necessary to establish a WHA. This assessment must be made case by case.

## Identified Wildlife Provisions

### Wildlife habitat area

#### Goals

Maintain suitable nesting and brood rearing habitat for multiple pairs.

#### Feature

Establish WHAs over breeding areas occupied by multiple pairs. Breeding areas include nesting, incubation, and brood rearing habitats.

### Size

Typically between 250 and 500 ha but will ultimately depend on the number of pairs and area of suitable habitat. Larger contiguous openings will support more curlews (denser numbers) than smaller areas (Bicak et al. 1982).

### Design

The WHA should include flat to moderately rolling terrain and short grass cover (ideally  $\leq 10$  cm tall during the pre-laying period and up to 25 cm during brood-rearing) (Jenni et al. 1982). Ideally the WHA should include as large an area of grassland as possible but should include  $\sim 250$  ha of brood rearing habitat with scattered clumps of grasses 20–30 cm in height (this may include the nesting territory). The WHA should be at least 250 m wide at its narrowest point but should include a 500 m buffer of similar open habitat (Jenni et al. 1982) to protect against disturbance. The buffer should be managed similar to the core so does not need to be distinguished but should be considered when designing WHA boundaries.

## General wildlife measures

### Goals

1. Provide low profile vegetation (<10 cm) for nesting in April.
2. Provide vegetation that is approximately 25 cm in height for brood rearing in May.
3. Minimize disturbance from humans or livestock during critical times throughout the breeding season (1 April to 15 July).
4. Maintain native bunchgrass in brood-rearing areas.
5. Minimize forest encroachment.

### Measures

#### Access

- Do not construct roads unless there is no other practicable option.
- Limit road use during critical times during the breeding season (1 April to 15 July) when considered necessary by statutory decision maker. Contact MWLAP staff for site-specific times.

### *Pesticides*

- Do not use pesticides.

### *Range*

- Control timing and distribution of livestock grazing to avoid disturbances during the breeding season. Consult MWLAP for site-specific times.
- Plan livestock grazing to maintain grass cover in nesting areas that is on average <10 cm in height when curlews return in spring.
- Avoid concentrating livestock during the breeding season (1 April to 15 July) particularly during the incubation period. Place salt and water troughs in treed areas wherever possible to prevent livestock concentrations in the open where nests may occur. When it is necessary to move livestock through a WHA during the incubation period (generally 15 April to 31 May) and there is no other practicable option, use forest or shrub areas or areas immediately adjacent to trees (<20 m) rather than in the middle of openings. Consult MWLAP for specific times.
- Do not use fire in nesting areas during egg-laying or brood-rearing times.

### *Recreation*

- Do not establish recreational trails.

## **Additional Management Considerations**

Prevent or restrict motorized recreation vehicles such as ATVs and dirt bikes within WHA particularly between 15 March to 15 July.

Where appropriate, and the habitat capability is high, revegetate crested wheatgrass seedings to native grass species.

Control forest encroachment using logging in combination with burning or other suitable methods.

## **Information Needs**

1. Population size and trend.
2. Determine if Long-billed Curlews breed in Churn Creek Protected Area.
3. Research on brood rearing and rearing habitat requirements is needed.

## **Cross References**

Grasshopper Sparrow, Sage Thrasher

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