

## SMITH'S LONGSPUR

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### TAXONOMY

**Scientific name:** *Calcarius pictus* (Swainson, 1832)

**Common name:** Smith's Longspur

**Family:** Emberizidae

**Taxonomic comments:**

No subspecies currently accepted. Re-examination of the three subspecies proposed by Kemsies (1968) showed that color differences were due entirely to seasonal wear and fading of the breeding plumage (Briskie 1993).



### DESCRIPTION

**Basic description:** A medium-sized songbird.

**General description:**

Sexually dimorphic in plumage during breeding season. Breeding male: conspicuous black-and-white head pattern, forming a small white ear patch; bright buff under parts; white outer tail feathers. Breeding female and both sexes in winter plumage: duller buff with streaked crown, breast, and sides; black and white patterning of male crown and ear coverts absent. In all plumages, the outer retices almost completely white. Bill is short and conical but narrower than in other longspurs (Briskie 1993). Even during winter, remains buffer than other longspurs and aids in separating the species. Like other longspurs, has a long posterior claw (hallux nail).

**Length (cm):** 16

**Weight (g):** 29

**Reproduction:**

Nests June-early July. Clutch size 4-5, sometimes 6. Incubation by female, 11-12 days (Terres 1980). Young leave nest at 7-8 days and can fly short distances within 12 day post hatch. Single brood per season, re-nesting uncommon (Briskie 1993). In the Anaktuvuk Pass region, nesting dates were about 10 days later than that of Lapland Longspurs (*Calcarius lapponicus*) (Irving 1960). Unusual mating system of "female-defense polyandry" in which both males and females may copulate with multiple members of the opposite sex (Briskie 1992). High adult breeding-site fidelity (86%, n = 15; Briskie 1993). Female builds sunken nest on open tundra, often in hummocks or grass tussocks (Ehrlich et al. 1988).

**Ecology:**

One of the more poorly studied birds in North America (Ehrlich et al. 1988). Species has one of the most unusual breeding systems known among songbirds, in which both males and females may copulate with multiple members of the opposite sex (Briskie 1992). Broods can contain chicks of mixed paternity. At such nests, two or more males may assist females in feeding nestlings (Briskie 1993).

**Migration:**

A nearctic migrant. Migrates in large loose flocks of between 22-250 conspecifics, but occasionally found with Lapland Longspurs and Snow Buntings (*Plectrophenax nivalis*) (Terres 1980, Briskie 1993). Begins northward migration March-April, arrives in nesting areas in northern Alaska in late May and early June; departs northern Alaska by end of August (Terres 1980, Johnson and Herter 1989). Fall migration, through Canadian prairies to wintering grounds in southcentral U.S., occurs from late August to mid September.

**Food:**

In summer, switches from mostly seed diet upon arrival on breeding grounds to mostly invertebrates by the time chicks hatch. Nesting diet mostly caterpillars, grasshoppers, emergent odonates, adult diptera (tipulids, chironomids and culicids), and adult Lepidoptera. Seeds 90% of diet by volume June 1-10, with invertebrates (ants, spiders and beetles, larval lepidoptera) the remainder. By 20 June, diet >85% invertebrates (largely terrestrial forms or immature stages of flying insects; Briskie 1993).

**Habitat:****Global habitat:**

Dry, grassy, and hummocky tundra; in migration and winter in grassy and weedy areas, fields, prairies and airports (AOU 1983). Open dry tundra. Damp tundra swales or in wet meadows in forested country, usually inland from coast (Johnson and Herter 1989). Breeds in open, arctic tundra and damp, tussock meadows of valley bottoms or mountain passes. Nests on ground. Nests are built in shallow depressions on the tundra or in grassy tussocks or hummocks (Briskie 1993).

**State habitat:**

Preferred habitat in northern Alaska is moist tussock meadows in wide alpine valleys, often surrounding lakes. In central Alaska, prefers dry ridge top tundra (Kessel and Gibson 1978). Elsewhere, found at treeline. In the Wrangell Mountains, found on alpine plateaus around 5000 ft in low shrub and tussock tundra (Sage 1976). May be found in low areas of tundra interspersed with spruce (Briskie 1993).

## STATUS

**Global rank:** G5 (1996-12-04)

**Global rank reasons:**

Not an abundant bird, but globally secure because the breeding range occurs over a large geographic area. Populations are sparsely distributed within the breeding range. Uses human-altered landscapes in winter; may be vulnerable to large-scale land use changes.

**State rank:** S3S4B (2005-03-28)

**State rank reasons:**

Alaska breeding distribution is incompletely known. Population status and trends unknown; currently lacking methods to properly assess and monitor populations. Due to isolated breeding locations, threats are minimal.

## DISTRIBUTION AND ABUNDANCE

### **Range:**

#### **Global range:**

*Breeding:* east-central Alaska and adjacent northwestern British Columbia; northern Alaska east across northern Yukon and Mackenzie to southern Keewatin, northeastern Manitoba and extreme northern Ontario.

*Non-breeding:* Kansas and Iowa south to Oklahoma, east-central Texas, and northwestern Louisiana.

*Migration:* primarily through northern Great Plains.

#### **State range:**

*Breeding:* Breeds in two geographically distinct regions in Alaska: the Brooks Range and northern foothills and uplands of southeastern central Alaska. In the Brooks Range, found as far west as the Noatak headwaters (Kessel and Gibson 1978) and north to the confluence of the Colville and Kogosukruk rivers (Johnson and Herter 1989). On the south side of the Brooks Range, occurs around Anaktuvuk Pass, Tolugak Lake (Irving 1960), and the upper Sheenjek River (2200 ft; Kessel and Schaller 1960). In the northern Brooks Range, is a confirmed or probable breeder in the Kongakut, Sheenjek, Hulahula, Canning, Atigun, Sagavanirktok, and Ribdon River Valleys, and Wahoo Lake. Small population or individuals reported from Chandler Lake, Arrigetch Peaks, and the headwaters of the Noatak River. Casual migrant and breeder north of the Brooks Range: Umiat, Colville/Kogosukruk, and Barrow (Kessel and Gibson 1978). In southeastern central Alaska, reported from the Wrangell Mountains (Sage 1976), the Tanana-Yukon Highlands, in Yukon-Charley Rivers National Preserve (Swanson and Nigro 2003), Mt. Fairplay, west of Kechumstuk Mt., White Mountains, and along the Denali Highway against the south edge of the Alaska Range (Kessel and Gibson 1978).

### **Abundance:**

#### **Global abundance:**

Total world population size unknown, but estimates based on breeding densities in suitable habitat suggest it is unlikely to exceed 75,000 birds (Briskie 1993). Estimates of population size on wintering grounds not available; species rarely sighted in Christmas Bird Counts.

#### **State abundance:**

Overall abundance in state unknown. Species is a fairly common migrant and breeder in the eastern Brooks Range; uncommon to rare west of Anaktuvuk Pass; casual migrant and breeder north of the Brooks Range; rare migrant and breeder or probably breeder in southeastern central Alaska; very rare migrant in northern southeastern Alaska (Kessel and Gibson 1978). Irving (1960) estimated Smith's Longspurs were about 1/20 as abundant as breeding Lapland Longspurs in the Anaktuvuk region.

**Trends:****Global trend:**

Rangewide population trend unknown. Breeding densities in the Churchill, Manitoba area apparently decreased from 0.30-0.40 birds/ha in the mid-1960's to about 0.20 birds/ha in 1992 (Briskie 1993).

**State trend:**

Unknown.

## EXISTING PROTECTION

**Global protection:**

Although afforded no formal protection, listed as a species of high conservation concern by Boreal Partners in Flight (BPIF) Landbird Conservation Plan for Alaska (Boreal Partners in Flight Working Group 1999) and the Canadian Wildlife Service (Dunn 1997). Protected breeding areas in Canada occur in Kluane National Park, Yukon Territory; Spatsizi Plateau Wilderness Park and Tatshenshini-Elsek Wilderness Provincial Park, British Columbia (Fraser et al. 1999); and Thelon Wildlife Sanctuary, N.W.T. (Norment et al. 1999). In the continental U.S., occurs in Flint Hills, Stillwater, Theodore Roosevelt, Marais des Cygnes, Shiawassee, Mingo, Eastern Rainwater Basin, and Des Lacs National Wildlife Refuges, and Haida Gwaii Haanas and Death Valley National Parks. In Alaska, much of the breeding distribution is located within protected federal lands: Arctic National Wildlife Refuge, Noatak, Kobuk Valley, and Yukon-Charley Rivers National Preserves, and Denali, Wrangell-St. Elias, and Gates of the Arctic National Parks.

**State protection:**

Isolation of breeding areas largely protects this species in Alaska. Much of the breeding distribution is located within protected federal lands: Arctic National Wildlife Refuge, Noatak, Kobuk Valley, and Yukon-Charley Rivers National Preserves, and Denali, Wrangell-St. Elias, and Gates of the Arctic National Parks. Although afforded no formal protection, listed as a species of high conservation concern by Boreal Partners in Flight (BPIF) Landbird Conservation Plan for Alaska (Boreal Partners in Flight Working Group 1999).

## CHALLENGES

**Global challenges:**

Wintering birds concentrate within a small portion of the southern Great Plains on grasslands that are owned and heavily managed for agricultural uses. This distribution may leave them vulnerable to land-use changes, habitat loss and contaminants (i.e. pesticides, dioxin), although overall effects of human activities are unknown (Briskie 1993, Dunn and Dunn 1999). Long-term climate change could impact peripheral populations, such as those in British Columbia (Fraser et al. 1999).

**State challenges:**

Due to isolated breeding locations, no major immediate threats to Alaska breeding habitats have been identified. There is potential for disturbance and habitat degradation due to oil and gas development, especially in the Atigun Pass, Sagavanirktok, and Ribdon River Valleys, where the Trans-Alaska Pipeline and the Dalton Highway intersect species' breeding range.

## **RESEARCH AND INVENTORY NEEDS**

### **Global research needs:**

Studies of migration and wintering ecology needed to determine habitat requirements and factors affecting survival during non-breeding season (Briskie 1993). Obtain information on demographics, habitat use, human impacts, and the impacts of land-use changes (Cook and Nigro 2004). Breeding ecology needs study.

### **State research needs:**

Obtain information on demographics, habitat use, human impacts and the impacts of land-use changes (Cook and Nigro 2004). Breeding ecology needs study.

### **Global inventory needs:**

Range-wide population estimate needed; develop methods to track population trends.

### **State inventory needs:**

Alaska breeding distribution is incompletely known and needs study. Determine estimate of total breeding population and develop monitoring techniques to track population trends.

## **CONSERVATION AND MANAGEMENT NEEDS**

### **Global conservation and management needs:**

See State conservation and management needs.

### **State conservation and management needs:**

Coordination of range-wide surveys between various agencies needed to ensure consistency in methodologies. Develop map of all known breeding areas and identify important or critical habitats.

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#### Acknowledgements

**State Conservation Status, Element Ecology & Life History Author(s):** Gotthardt, T.A., and A. Jansen  
**State Conservation Status, Element Ecology & Life History Edition Date:** 12Nov2004

**Reviewers:** Debbie Nigro, Bureau of Land Management, Fairbanks, AK and Melanie Cook, National Park Service, Alaska.

Life history and Global level information were obtained from the on-line database, NatureServe Explorer ([www.natureserve.org/explorer](http://www.natureserve.org/explorer)). In many cases, life history and Global information were updated for this species account by Alaska Natural Heritage Program zoologist, Tracey Gotthardt. All Global level modifications will be sent to NatureServe to update the on-line version.

**Global Element Ecology and Life History Edition Date:** 16Mar1994

**Global Element Ecology and Life History Author(s):** G. Hammerson; revised by S. Cannings

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