

# ESKIMO ARCTIC

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## TAXONOMY

**Scientific name:** *Oeneis alpina* Kurentzov, 1960

**Common name:** Eskimo arctic, sentinel arctic

**Family:** Nymphalidae

**Taxonomic comments:** Previously known in North America as *Oeneis excubitor*, which Scott (1986) first suggested might be a subspecies of the Siberian *O. alpina*. Expert examination of the type specimens for both reveals they are one species and *O. excubitor* is now considered a straight synonym (Layberry et al. 1998) for *O. alpina*. No subspecies are recognized by these authors.

## DESCRIPTION

**Basic description:** A medium-sized brown butterfly.

### General description:

A medium-sized brown butterfly; upperside of wings is orange-brown, with basal two-thirds of both wings darker, especially in males; one to three white-centered eyespots present on forewing and two on hindwing, above and below; underside of hindwings striated dark brown and gray (Scott 1986, Layberry et al. 1998). Females have slightly larger wingspan and lighter, more ochreous background color in the basal area of the upperside of wings than males (Troubridge et al. 1982). Similar in appearance to the Brown Arctic (*O. chryxus*), but hindwing eyespots and brown basal two-thirds of upper wings distinguish *O. alpina* (Scott 1986, Layberry et al. 1998). Appearance of eggs, larvae and pupae not reported.

**Length (mm):** 36-47 (wingspan)

### Reproduction:

Males congregate on dry tundra hilltops awaiting receptive females (Scott 1986, Layberry et al. 1998). Females move upward to mate, then fly back down to taiga bogs to oviposit eggs on or near host plants (Philip pers. comm.). Flight period is usually biennial (Scott 1986, Layberry et al. 1998); hence, eggs or larvae apparently overwinter twice before pupating in spring/summer.

**Ecology:**

One flight period, June to mid-July, apparently biennial (mostly in odd years west of Mackenzie River, even years in Mackenzie River and eastward; Scott 1986, Layberry et al. 1998). Species has a strong compulsion to hilltop (i.e. males collect on hilltops to pursue females) and is far more aggressive than any other Nearctic species in the genus *Oeneis* (Troubridge et al. 1982).

**Migration:**

Dispersal distance unknown.

**Food:**

Specific host plants for larvae are unknown, but presumed to be a grass feeder (Philip pers. comm.); host plants for *O. chryxus* include grass species *Danthonia*, *Oryzopsis* and *Phalaris* (Scott 1986). Adult foods, if any, are unknown.

**Phenology:**

Diurnal, flight period is biennial in early summer.

**Habitat:**

Breeding habitat is wet grassy tundra and taiga bogs, but males congregate on nearby ridges and rocky areas where mating occurs so both features are essential habitat. Usually seen on dry rocky hilltops, desolate scree slopes and windswept ridges (Troubridge et al. 1982, Scott 1986, Layberry et al. 1998).

## STATUS

**Global rank:** G3G4 (01Sep1998)

**Global rank reasons:**

Apparently not a common species and range may be limited. No known threats. Clearly not imminently imperiled. Rank would probably depend on extent of the range. It probably will prove to be fairly widespread and secure, but for now G3 (globally rare or uncommon [ $<100$  occurrences]) cannot be excluded.

**State rank:** S3 (23Jun2006)

**State rank reasons:**

Not a common species. Range appears to be limited (based on a limited number of occurrences) but is likely incompletely known. Potential threats are not imminent, but include land use practices which degrade moist tundra and bog habitats, as well as effects of climatic warming.

## DISTRIBUTION AND ABUNDANCE

**Range:**

**Global range:**

Eastern Siberia (Chukot and Magadan regions) and low arctic of northeastern Alaska, Yukon and western Northwest Territories as far east as Ford Lake (Scott 1986,

*Eskimo arctic*

Lafontaine and Wood 1997, Tuzov et al. 1997, Layberry et al. 1998, Philip pers. comm.). See Layberry et al. (1998) for Canadian range. Extent of the range in Siberia is unknown.

**State range:**

Species has been found at several sites in Alaska, all of them along the northern foot of the Brooks Range from near Anaktuvuk Pass to the Dalton Highway (Philip pers. comm.).

**Abundance:**

**Global abundance:**

Population size unknown, but generally an uncommon species with some high local abundance (Layberry et al. 1998).

**State abundance:**

Population size unknown. Very common at Oil Spill Hill on the Dalton Highway, and also at the base of Slope Mt., south of Oil Spill Hill (Philip pers. comm.).

**Trends:**

**Global trend:**

Unknown.

**State trend:**

Unknown. Natural fluctuations in population are apparently common (Philip pers. comm.).

## EXISTING PROTECTION

**Global protection:**

Species afforded no formal protection.

**State protection:**

Species afforded no formal protection.

## CHALLENGES

**Global challenges:**

No immediate threats to populations or habitat. See State threats.

**State challenges:**

No immediate threats. Land use practices which degrade moist tundra and bog habitats could be potential threats, including road construction; however, even road construction would likely affect only a small portion of the Alaska population. The effects of climate change and warming temperatures in the arctic are unknown, but could include changes to preferred tundra and bog habitats and potential extension of more southerly butterfly species into *O. alpina*'s range.

## **RESEARCH AND INVENTORY NEEDS**

### **Global research needs:**

Investigate general life history including host plant species, habitat associations, metamorphic stages and reproductive cycle.

### **State research needs:**

Investigate host plant species and habitat associations; describe metamorphic stages and reproductive cycle. Study effects of increasing temperatures on tundra and bog habitats.

### **Global inventory needs:**

See State inventory needs.

### **State inventory needs:**

Determine extent of range in Alaska. Monitor populations biannually during flight periods to identify any trends in distribution or abundance.

## **CONSERVATION AND MANAGEMENT NEEDS**

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

See State conservation and management needs.

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

No imminent threats to this species, so research on life history and inventory/monitoring to determine range and assess population trends should be a priority. Surveys for adults, larvae and eggs could be combined with vegetation surveys in northern Alaska.

## LITERATURE CITED

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### Acknowledgements

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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.

**NatureServe Conservation Status Factors Edition Date:** 17Jul1998

**NatureServe Conservation Status Factors Author:** Schweitzer, D.F.

**Global Element Ecology & Life History Edition Date:** 21May2001

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