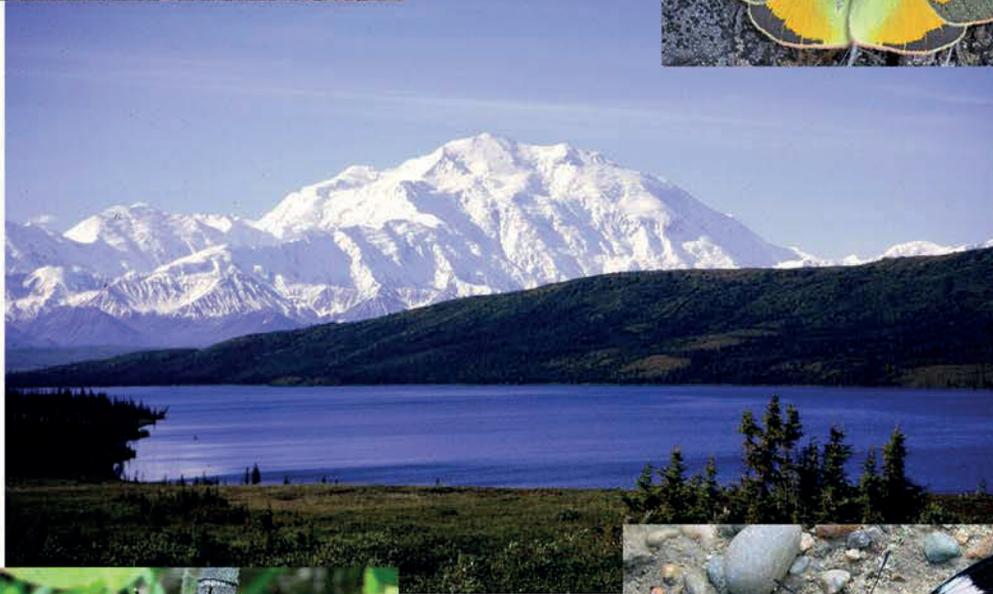


BUTTERFLIES OF ALASKA

A Field Guide

Second Edition

Kenelm W. Philip (*Posthumous*)
Clifford D. Ferris



ISBN 978-194517060-7



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Map production: Matthew I. Bowser, Kathryn M. Daly, Derek S. Sikes

Alaska Entomological Society

Fairbanks, Alaska

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Kenelm W. Philip, Ph.D. Biography on pages iv and 1.

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Published by: Alaska Entomological Society
c/o University of Alaska Museum of the North
907 Yukon Drive
Fairbanks, AK 99775

First printing (Second Edition) March, 2016

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ISBN: 978-1-945170-60-7

Modern Printing Co., Laramie, Wyoming

Printed in the United States of America

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FRONTISPIECE



Photo: D. Sikes

Kenelm “Ken” W. Philip, Ph.D 1931–2014

Ken with his signature “bat” net near Eagle Summit along the Steese Highway, Alaska, one of his favorite collecting sites.

Preface

Ken Philip had a life long interest in Butterflies. He moved from the East Coast to Fairbanks in 1965 and in 1970 established the Alaska Lepidoptera Survey, a network of eventually over 600 volunteers around the state, many of whom are recognized in the “Acknowledgments,” who over the years collected some 25,000 specimens for him. With this material combined with his own collecting efforts, he amassed 78,240 butterfly specimens from Alaska, eastern Russia, and western Canada. His collection also included 32,833 moths from these regions.

For many years, it had been his ambition to produce a book on Alaskan butterflies, and Ken had expressed this goal to many people. To this end, he had developed a database and distribution maps. In recent years he embarked upon an effort to take live field photographs of all the known Alaskan butterfly species, a project he nearly completed. Unfortunately he never committed pen to paper to develop a manuscript. Ken died very suddenly in March, 2014.

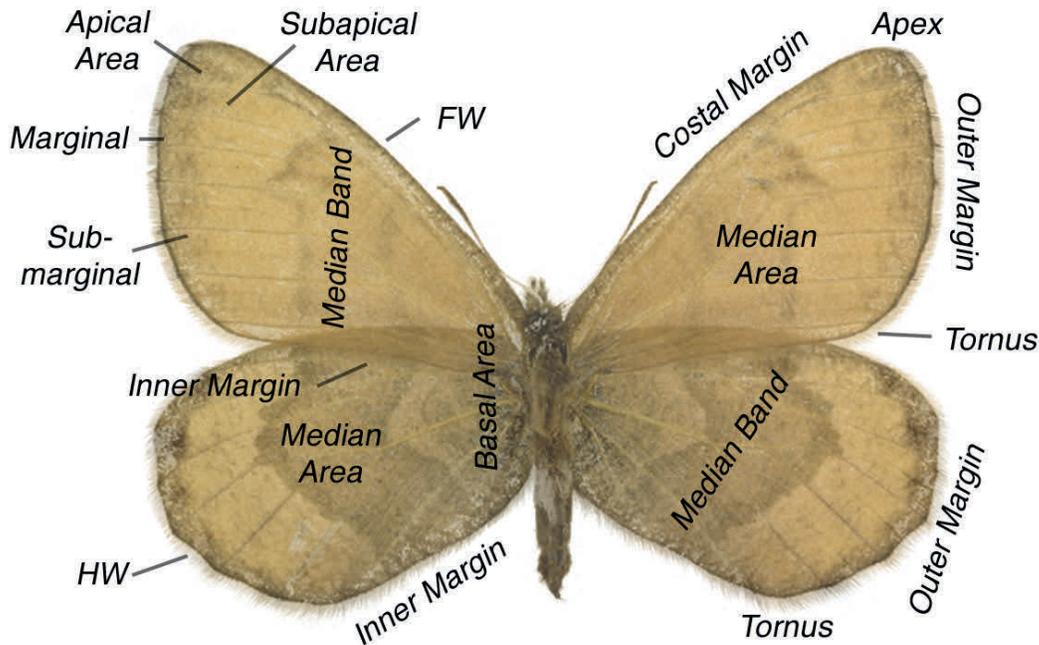
Because of a perceived interest in such a book, several of Ken’s colleagues have undertaken this project in recognition of his efforts over many years.

The species accounts and directly related material have been prepared by Cliff Ferris, Ken's colleague since 1971, and who spent many hours in the field with Ken. He also produced the digital photos of the spread specimens, the habitat photos, the book layout and printer-ready PDF. The maps for this book were generated by Matt Bowser using Ken's records and supplementary material supplied by Derek Sikes and Kathryn Daly from archives of Ken’s files. The field photographs are all Ken's with the exception of the following kindly provided by Norbert Kondla: *Papilio zelicaon*, *Pieris rapae*, *Oeneis bore* (mated pair), and *Oeneis uhleri*.

Excepting King Salmon, Nyaq, and the Aleutians, geographic coverage of the southwestern quadrant of the state is incomplete. This is virgin territory for readers who might be inclined to survey the region. Certainly many additional locality records would be obtained, although it is doubtful that any additional butterfly species would be added to the Alaska list.

The maps differ from the usual field guide in that only confirmed records are plotted, rather than the usual “shaded” map. Absence of dots means either than no records currently exist, or that the the area lacks suitable habitat to support the associated species. The data from which the maps were made are publicly available, online, via the database http://arctos.database.museum/uam_ento_all. This dataset is based on Ken’s collection and combines the specimens provided by his Alaska Lepidoptera Survey network of volunteers with his own specimens. Additionally, this dataset includes records from the University of Alaska Museum Insect Collection, which contains the Meijer Drees Arctic butterfly collection. This dataset will grow over time as more records are added, and change as records are edited and improved. Readers of this field guide are invited to add new records in several ways – observation records via e-mailed photographs of butterflies, donated specimens, or via online naturalist networks such as iNaturalist.org or e-Butterfly.org. These data are served to global data aggregators such as the Global Biodiversity Information Facility and iDigBio, which pull and share data from hundreds of contributing museums, collections, and observation datasets. The maps differ from those in many field guides in showing only the sites where observations have been made or specimens collected. Ken’s Alaskan collection, which began in 1966 is an invaluable historic record of the 20th century Alaskan butterfly fauna.

The following abbreviations (with reference to the accompanying figure on page 2) have been used in the species descriptions that follow: D = dorsal (upperside); V = ventral (underside); FW = forewing; HW = hindwing; DFW = dorsal forewing; DHW = dorsal hindwing; VFW = ventral forewing; VHW = ventral hindwing. Expanse = wing expanse of spread specimen measured from FW-apex-to-FW-apex. Average or typical values are given. In any species, both dwarfs and giants occur occasionally. The former are attributed to lack of sufficient larval forage, and the latter to the caterpillar going through an additional instar before pupation. Hibernation applies to the life stage during which the species passes the winter months. Six species hibernate as adults, and are *Aglais milberti*, *Nymphalis j-album*, *Nymphalis antiopa*, *Polygonia satyrus*, *Polygonia gracilis* and *Polygonia faunus*. Many northern species have a two-year life cycle. An early instar larva passes the first winter, feeds to a late instar larva during the following summer and again passes another winter. In the spring it completes feeding, pupates, with the adult butterfly then emerging to lay eggs and the life cycle repeats. At some time in the distant past, some environmental event occurred that destroyed a generation such that some species appear on odd-numbered years only in certain localities in interior Alaska. Continent wide, this seasonality may be even-year absence, while in others it is odd-year. In some cases, populations on two adjacent mountain ranges may manifest different seasonalities. In each species coverage, brief information is included about species biology and larval host plants, if known.



Wing Character Definitions

Regarding some species, the field photos appear much brighter than those of the prepared specimens, which results from the manner in which butterfly scales reflect sunlight as opposed to artificial illumination in the laboratory.

For those readers of this field guide who wish additional information about collecting and preserving butterfly specimens, as well as information about Alaskan species that occur in neighboring Canada and the western United States, the following books are suggested:

- Winter, William D. Jr., 2000. Basic Techniques for Observing and Studying Moths & Butterflies. *Memoirs of the Lepidopterists' Society* No. 5. ISBN 0-930282-07-8.
- Opler, Paul A., 1999. A Field Guide to the Western Butterflies. Peterson Field Guide Series, Houghton Mifflin Co., New York. ISBN 0-395-79151-0 (pbk.).
- Layberry, R. A., Hall, P.W., & J. D. Lafontaine, 1998. The Butterflies of Canada. University of Toronto Press Inc. ISBN 0-8020-7881-8 (pbk.).

Acknowledgments

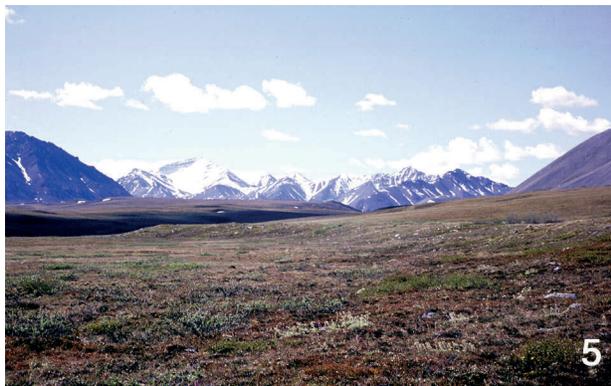
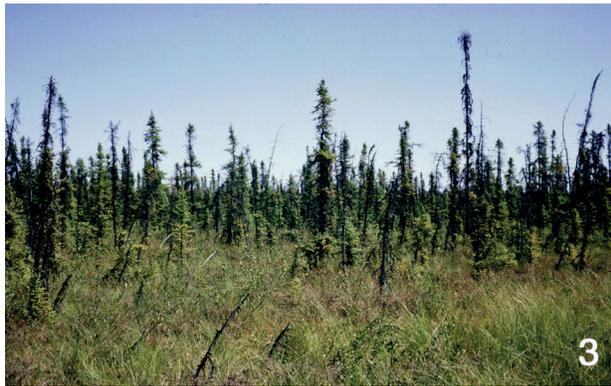
We express our thanks and appreciation to James Kruse and Derek Sikes for their efforts in reviewing the preliminary version of this book, and for their helpful additions and editorial suggestions. Derek and Kathryn Daly coordinated and databased the collection records used in the preparation of the maps.

Ken's volunteer network, all members of the Alaska Lepidoptera Survey, helped considerably with this effort, for which we thank them: Adams, D., Ailes, Allison, R., Anderson, J., Anxweiler, G.A., Atencio, J., Ayres, L.A., Babcock, J., Baird, P., Baker, N., Bakke, A., Balogh, P., Banko, P., Barclay, Barry, Barton, L.A., Barton, K., Batten, A., Batten, C., Baust, Beckwith, Behan, V., Bente, P., Bente, J., Berg, R., Bergdahl, J., Bergman, Berkey, Berman, D., Berns, V.D., Berrie, Berry, E., Bevernitz, K., Bill, D., Billingslea, Bingham, D., Bishop, R.H., Bixby, Blakesley et al, Blume, J., Boise, C., Borron, J., Boughton, S., Boyd, E., Branson, K., Brink, K., Britten, M., McIntyre, C., Brock, J., Brockman, R., Buckley, Budarin, Budka, G., Buhkalo, Bundtzen, T., Bundtzen, F., Bunn, R.L., Burgess, L.A., Burke, J. & J., Burns, Bury, K., Bushey, D., Calkins, Campbell, J., Cass, Cattell, C., Chapin, T.,

Chapman, R.W., Chorney, Clark, S., Clauson, B., Clemson, R., Cobb, Collet, D., Collins, R., Cook, Cooper, D., Craig, J., Craig, P., Cranna, G., Curatolo, J., Curby, K., Dade, W., Dailey, Datta, Dau, C.P., Davies, J., Davis, K., Dawe, J., DeCiccio, F., Delana, B., Dementi, B., Detterman, M., Deyrup, M., Dick, M., Dick, L., Dickel, T., Dieterich, R., Dixon, J., Dodge, H.B., Dominick, R.B., Donaldson, Driscoll, K., Dunning, Dyroff, C., Ebner, J. (ex coll), Epstein, Ernst, R., Fahl, C., Flaccus, K., Flanagan, Flanders, R., Foley, J., Foliart, Foote, J., Foster, W., Furnas, R., Fuson, R., Gara, R., Garrison, D., Gibson, D.D., Glushkova, Glushkova et al, Glushkova, Gordon, J.L., Gorelick, G.A., Gorham, R., Graham, B., Graves, T., Gronholdt, A., Grossman, A., Groves, J., Grundy, J.S., Guppy, C., Guzmán, J., Halpin, E., Halpin, L., Hamilton, R.M., Hamly, R.E., Hansen, E., Harry, J.L., Hawkins, L., Hebel, W.A., Hechtel, J., Heckert, B.C., Hedden, J., Heimer, L., Helmer, Helmericks, Helmstetter, Henderson, K., Herter, D., Hibler, E., Hjalten, J., Hok, J., Holland, J., Hollingsworth, Holsten, E., Hoover, A., Hopfinger (ex coll), Hopkins, D.M., House, D., Hudson, T., Huff, Hume, Humes, T., Husnik, D., Hutson, L., Isto, S., Jacobus, K.P., Jennings, L., Jetton, M., Johnson, D., Johnson, J. & E., Johnson, J.D., Johnson, L., Johnson, M., Johnson, M. & K., Johnson, S., Jones, A., Jones, I., Jones, R., Jones, S., Jones, T., Jones, W., Kalen, B., Kalen, Karpuleon, F., Kaufman, M.B., Keim, Kelley, B.P., Kelso, S., Kennedy-Smith, M.J., Kerfoot, D.E., Kessel, B., Ketz, J.A., Kilmer, Kimmel, C., Kimmich, H.P., Kincheloe, K.L., King, M.L., Klassen, P., Klein, Kline, W., Klingel, M., Kobalev, B., Kogl, S., Komarek, Kondkova, I., Korneychuk, Korshunov, Koutsky, K., Kral, T., Kreber, R., Kreig, R., Krepel, J., Kruse, J.J., Krivosheyev, Kunkle, G., Kusche, J., Kuyt, E., Lamb, Lambert, J., Lammers, LaPerriere, A., Larsen, P.E., Larsen, Larson, D., Leach, M., Lebida, R.C., Lent, P., LeVan, S., Lewis, M., Linderman, A., Linderman, S., Lipkin, Loerzel, V., Lohse, Longley, S., Lowe, J., Lowry, M., Lutchansky, L., MacDonald, S.O., MacInnes, K., Macior, L.W., Maclean, S.F., MacLean, Magill, E., Magoun, A., Margulis, Man'shina, Marple, K., Marshall, Martell, A.M., Mashukova, Matis, E.G., Matthews, S.J., McAlpine, W.S., McCarthy, McCorkle, D.V., McDonald, E.J., McDonald, M., McGuire, D., McIlroy, C., McLeod, R., McMillen, J., McMillen, L., Meekin, Mercer, M., Merrell, M., Merrell, T., Metzner, Miers, S., Mihkelson, Mihok, S., Miller, E.H., Miller, M., Mills, Modafferri, R., Moore, J., Moore, P., Morewood, D., Murphy, G., Murray, D., Murray, J., Naddy, R., Nava, F., Nelson, B., Nelson, W., Nielsen, G., Noble, S., Nodler, F., Nowosad, Ovenshine, T., Parker, C., Pearson, A., Pease, C.A., Pegau, R., Pegau, S., Perkins, J., Peterson, N., Peterson, R., Petterson, Pettitt, T., Philip, B.A., Phillips, W., Pike, E.M., Piper, S., Pletcher, P., Pollard, R.A., Pratt, Preston, D., Pyle, R.M., Pyne, K., Pyne, P., Quimby, R., Quimby, R., Quong, K., Ragland, L., Rausch, R., Read, R., Reardon, M., Reasor, Redwood, P., Reeburgh, Reed, Regel, K., Reinbold, Richter, D., Richter, M., Rick, B., Ring, R., Ritterbush, Roberson, K., Roberson, K/Johnson, Roberts, Robertson, A.D., Robinson, S., Robus, M., Roby, D., Rohn, H., Roland, J., Roney, K., Rosenberg, Roseneau, D.G., Rowland, N., Russell, R., Ryan, Rydell, J., Saito, B., Saltmarch, R., Sanders, Schamel, D., Schandelmeier, J.C., Scott, R., Shaffer, B.M., Shepard, Sigman, M., Skeel, M., Slugin, I.V., Slynko, V.I., Smith, J., Snarski, D., Sommermann, K., Sotavalta, Spawn, M., Spitzer, P., Springer, A., Springer, M., Standen, V., Stephens, K., Stephenson, R., Stoutrobin, I.T., Streveler, G., Summerfield, Svendsen, Swenson, T., Szafran, E., Tagarook, H., Tanimoto, R., Taylor, G., Temple, S., Teskie, J., Threlkeld, N., Tilden, J.W., Tilden, H., Trapp, J.L., Travers, R., Trent, J., Troubridge, J., Troyer, True, T., Valkenburg, P., Van Alstine, Van Cleve, M., Velsko, Wagner, R., Waldron, V., Walker, W., Wallen, J., Warbelow, C., Ward, L., Ward, T., Weber, F., Weeden, R., Welling, C., Wekk, Wenger, West, E.W., Weston, S., White, S., Wilde, G.A., Wilkins, Wilkinson, H., Williams, Williams, B., Wittenkeller, Wolf, C., Wood, D.M., Wood, S., Woodby, D.A., Wright, J.M., Wright, S., Zeligs, J., Zenone, M. We also are grateful to all of the funding and permitting agencies who helped with Ken's efforts over the years including the U.S. National Park Service, The National Geographic Society, The Smithsonian Institution, The Canadian Polar Shelf Project, The Bureau of Land Management, the Alaska Department of Transportation, and several Native Lands associations. We also are very thankful for the support of Ken's mission provided by the Philip family after his passing.

About This Second Edition

The first printing/edition of *Butterflies of Alaska* was sold out shortly after its publication. Rather than do a second printing, it was decided to prepare a second edition for several reasons. Based on comments from readers, the species pages have been re-formatted so that there are not multiple species on a single page, the exception being the treatment of the five non-resident species. Based on DNA barcoding, the species originally treated as *Oeneis chryxus caryi* has been separated into two species: *Oeneis tanana* and *O. chryxus*. *Oeneis tanana* is now included in the coverage. Several of the distribution maps have been updated based on additional records obtained after the first edition went to press. A few typographical errors have been corrected.



Habitats

1. Old field near Fairbanks.
2. Boreal forest, Bonanza Creek Forest nr. Fairbanks.
3. Bonanza Creek Forest bog with larch and spruce.
4. Mixed habitat with willow, Steese Highway.
5. Tundra at Galbraith Lake, North Slope.
6. Fell (block) field, Darby Mts., Seward Peninsula.
7. Scree slopes, Darby Mts., Seward Peninsula.

Introduction

The higher classification of the Lepidoptera has undergone numerous changes in recent years. With regard to the butterflies found in Alaska, five families are currently recognized: Hesperiidae (skippers); Papilionidae (parnassians, swallowtails); Pieridae (sulphurs, marbles, orange tips, whites), Lycaenidae (coppers, elfins, blues); Nymphalidae (fritillaries, angle wings, checkerspots, crescents, ringlets, alpines, arctics). The latter four families represent true butterflies. The skippers, while exhibiting many similarities to the true butterflies (such as clubbed antennae and day flying), also exhibit some characters found in moths, which has relegated them to their own group within the insect order Lepidoptera. Within these five families, there have been numerous recent changes in generic classification and association of species to genera. Each family is divided into multiple subfamilies, which in turn, are divided into tribes. In this field guide, we indicate subfamily associations, but do not include tribal assignments.

For some time now the scientific nomenclature for many species of the North American butterflies has been in a state of flux (with respect to this guide, in particular the genera *Boloria*, *Phyciodes*, *Speyeria*, *Oeneis*) as is readily apparent when one examines various field guides. In this guide, we have generally followed the names published in the most recent comprehensive checklist by J. P. Pelham, 2008 [A Catalogue of the Butterflies of the United States and Canada. *The Journal of Research on the Lepidoptera*, vol. 40, 652 pp.], and in *The Butterflies of Canada* (cited above). For those species that also occur in Russia, we consulted V. K. Tuzov, ed., 2000. *Guide to the Butterflies of Russia and Adjacent Territories*, vols. 1 & 2, Pensov Publishers, Sofia, Bulgaria.

In actuality, one may make an analogy between the Lepidoptera and birds. There are many subgroups of birds, some fly at night and others during the day; some are brightly colored and others are drab. By the same token, one may consider all Lepidoptera as moths. Butterflies and skippers generally fly during the day and many are brightly colored, although some tropical species fly at dusk. Most moths fly at night, although some species fly in the daytime only, and some are on the wing both day and night. Many are rather drab in color, but some are just as brightly colored as the most colorful butterflies. Traditionally moths have been separated from butterflies and skippers because of their antennal characters, which vary from threadlike (filiform) to fan-like (plumose). In the tropics, there is one day-flying brightly colored group of moths that have clubbed antennae similar to those in the skippers (genus *Castnia*), as well as the night butterflies (Hedylidae).

Butterflies in Alaska occur in a wide variety of (and sometimes very specific) habitats, some of which are shown on page 4. Inhospitable-looking scree slopes are home to such species as *Erebia occulta*, *Boloria natazhati*, *Boloria astarte*, *Colias nastes* frequently, and often several *Oeneis* species. Bogs and their associated edges support *Oeneis jutta*, *Coenonympha tullia*, several *Colias* species (especially *C. gigantea*), *Boloria* species, some skippers, and *Oeneis philipi* and *O. jutta*, which flies and perches among the larches. *Erebia youngi* is often found flying over fell fields. Open tundra supports many species. Boreal forests are home to *Papilio canadensis*, the nymphalid hibernating species, *Speyeria atlantis* complex, some *Erebia*, *Incisalia*, *Limenitis arthemis* and various blues. Old fields are attractive to many butterfly species, including *Phyciodes pratensis*.

Family Hesperiidae — The Skippers

Three subfamilies of skippers are represented in Alaska: Pyrginae (broad winged skippers; *Erynnis* and *Pyrgus*); Heteropterinae (skipperlings; *Carterocephalus*); Hesperiinae (grass skippers; *Hesperia*). The larvae of the broad winged skippers feed upon broad leafed plants. Grasses are the larval hosts of the skipperlings and the grass skippers.

Species 1 *Erynnis persius borealis* (M. Cary) — Arctic Dusky Wing

Male V



Male D



Female V, D



Distribution. In Alaska, this butterfly occurs in the eastern portion of the state at elevations up to 2000 feet. It can be found along the southern portion of the Dalton Highway, along the Taylor Highway, and at various sites in the Interior from the Fairbanks area eastward.

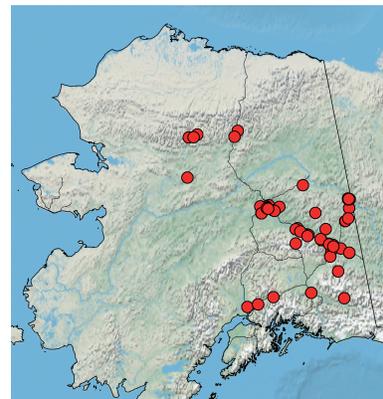
Habitat. Generally found along roads, power line cuts and other open sites in taiga and forested areas.

Biology. Various species of lupine are reported as larval hosts. Winter hibernation is apparently in the larval stage with pupation in early spring.

Flight period. Mid-May—mid-June.

Diagnostic characters. Expanse: 27 mm. No other Alaskan butterfly resembles this species. The butterflies are weakly sexually dimorphic. The females are slightly brighter in color, have more pronounced hyaline white spots than in the males, and lack the fold along the FW costal margin found in the males. Several subspecies of *E. persius* and other *Erynnis* species occur in Canada and the lower forty-eight states. *Erynnis afranius* (Lintner) has been listed for Alaska in some publications. It looks almost identical to *E. persius* and has been reported from the Yukon Territory. These two species can be separated easily by differences in the male genitalia. So far, all Alaskan specimens examined have upon dissection proved to be *persius*.

Field notes. Males, in particular, gather at moist spots on soil or gravel where they sit on the ground or flutter a few inches above the ground level. Flight is strong, erratic, and rapid when they are disturbed.



Species 2 *Pyrgus centaureae freija* (B. Warren) — Grizzled Skipper

Male V



Male D



Female V, D



Distribution. Known in Alaska to date from various widely separated sites as shown on the map. It is an Holarctic species, with the nominate species described from Sweden, and ranges from Scandinavia to Siberia. Examples from extreme NW Alaska may prove to be *P. c. centaureae* (Rambur).

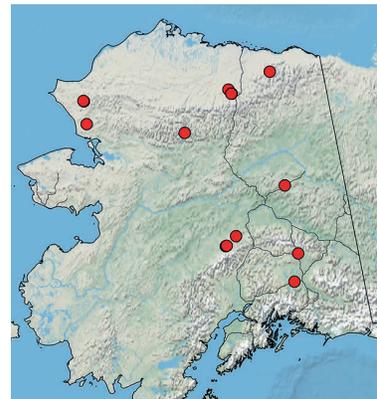
Habitat. Generally open tundra and ridges (elevations from 1700–3200 feet).

Biology. The early stages of this butterfly are poorly known and various plants have been reported as larval hosts, including *Vaccinium*, *Rubus* and *Potentilla*. Winter hibernation is not known exactly and may be as either mature larva or pupa.

Flight period. Late June into mid-July depending upon locality and elevation.

Diagnostic characters. Expanse: 25–30 mm. Little sexual dimorphism; males have a FW costal fold. There are no similar species in Alaska. Elsewhere in North America there are several related species with which *centaureae* could be confused. Two additional subspecies have been described from the East Coast and the Rocky Mountains, respectively.

Field notes. Usually seen over open tundra or rocky ridges. Males may be observed patrolling close to the ground. They also settle at moist gravel and both sexes visit various flowers.



Species 3 *Carterocephalus palaemon skada* (W. H. Edwards) — Arctic Skipper

Distribution. East-central Alaska and Kenai Peninsula. The species as a whole occurs across Canada and the northern U.S. as well as in the Palaearctic region.

Habitat. Bog edges, open grassy clearings, gravel roads and trails in boreal forest at low elevation to 2900 feet.

Biology. Winter hibernation as larva. Laval hosts are various grasses.

Flight period. June.

Diagnostic characters. Expanse: 18–25 mm. No similar species and the sexes are similar. Shown in the accompanying illustrations is a fairly common melanic aberration in which the upper side of the FW is nearly uniformly dark brown. This sort of aberration is thought to be produced by a sudden drop in ambient temperature during the prepupal stage.

Field notes. Flight is rather weak and the butterflies perch on grass stems and flowers. They may also be found on muddy soil. The common name of this little butterfly is misleading as it is rarely found above the arctic circle.



Male V



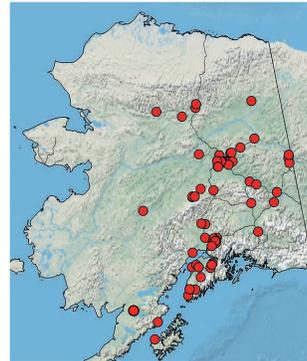
Male D



Aberrant Male, D



Female V, D



Species 4 *Hesperia comma borealis* Lindsey — Common Branded Skipper

Male V



Male D



Female V, D



Distribution. Widely distributed in North America and Eurasia, with multiple named subspecies. Found over much of eastern Alaska in suitable habitat to 2300 feet.

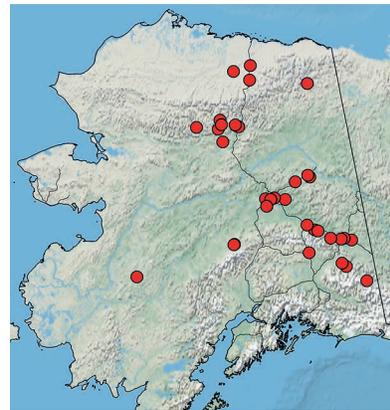
Habitat. Flies in the boreal zone along roadsides, trails and open areas. Colonies tend to be localized, but within these areas the butterflies are generally common.

Biology. Winter hibernation as eggs. Larval hosts are various grasses.

Flight period. Adults appear from mid-June into early July, depending upon locality and elevation.

Diagnostic characters. Expanse: 25–30 mm. As with the previous three skipper species, there are no other Alaskan butterflies with which *H. comma* can be confused. Elsewhere in North America there are numerous other *Hesperia* species and species separation can be difficult. Sexual dimorphism is strong in this butterfly. Dorsally the males have well-defined dark borders on the FW with a prominent dark brand or stigma mid-wing, hence the name branded skipper, which is also a group name for the other species of *Hesperia*. Females lack a brand, it being replaced by a broad diffuse irregular brown band.

Field notes. Flight is rapid and erratic, frequently in wide circular paths about a bunch of flowers or a patch of damp soil. These butterflies come readily to flowers, moist soil and gravel. Frequently multiple individuals may be seen in a small area.



Family Papilionidae — The Parnassians and Swallowtails

The Parnassians represent a primitive branch of the true butterflies. The larva forms a thin and loose cocoon on the ground surface. Winter hibernation is reported to occur as both eggs and first instar larvae. The males do not exhibit any courtship behavior, but rather patrol close to the ground searching for females. When one is located, mating occurs immediately, sometimes with a freshly emerged female before her wings have expanded completely. During mating, a waxy and rigid “chastity belt,” called a sphragis, is secreted at the end of the female’s abdomen. The shape of the sphragis has been used to separate species of this genus. Many species of *Parnassius* are found across the northern hemisphere, mostly in the Old World, with three or four (depending upon authority) occurring in North America. Two species occur in Alaska. In western North America, these butterflies are generally found in high plains regions (Wyoming, Montana, Idaho), in lush alpine meadows, and often above tree line in mountains.

Most of the swallowtails, as the name implies, manifest one or more tails of varying lengths extending from the HW tornal margin. Distribution of the group is worldwide. Some species from mainly tropical regions lack tails. A typical chrysalis suspended by a silken girdle is formed on a variety of substrates, and winter hibernation is as pupa. Three species occur in Alaska, while many additional species occur in other parts of North America.

Species 5 *Parnassius evermanni thor* Hy. Edwards — Eversmann's Parnassian

Male V



Male D



Female V



Female D



Male



Female

Distribution. South of the Brooks Range in the Interior and in tundra areas on the North Slope and Seward Peninsula with a preference for hillsides. The subspecies *thor* occurs in North America, but additional subspecies are found in Japan and Siberia.

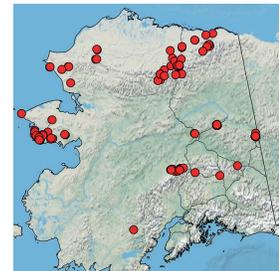
Habitat. Moist areas where shrub willows grow and *Corydalis* is found in pockets in the understory. South of the Brooks Range the butterflies may be found above tree line at such sites as Eagle Summit and Wickersham Dome. On the North Slope, these butterflies are fairly widely distributed where the larval host grows. In the Interior, *evermanni* is found at sites above 3000 feet; in the Seward Peninsula and North Slope it occurs from 300–2800 feet, depending upon locality.

Biology. Winter hibernation is unknown for Alaska, either egg or first instar larva. The larval host is *Corydalis* sp., most probably *C. pauciflora* (Steph.) Pers., which is the most widely distributed species of this plant in Alaska.

Flight period. Typically mid-June into early July.

Diagnostic characters. Expanse: 50 mm. Strongly sexually dimorphic with yellow males and white females. The HW red spots are small and isolated in the males, while they are large and form a nearly complete band in the females. The yellow color of the males immediately separates them from the other Alaskan species, *P. phoebus* in which both sexes are white. Females of *phoebus* have discrete and well separated red spots as opposed to the band in *evermanni*.

Field notes. The males fly rapidly, typically from one-to-two feet above the ground while patrolling for females. The females tend to be sedentary and sequester themselves in depressions close to where *Corydalis* grows



Species 6 *Parnassius phoebus*

Parnassius phoebus apricatus Stichel — Kodiak Parnassian
Parnassius phoebus golovinus Holland — Golovin Bay Parnassian

Distribution. Two subspecies of *Parnassius phoebus* fly in Alaska. *P. phoebus apricatus* (described from Kodiak Island) occurs in the Interior (Alaska Range, Talkeetna Mts.) and Kodiak Is. Originally two additional subspecies were recognized: *elias* Bryk described from “St. Ilja,” Alaska and *alaskensis* Eisner described from “Mt. McKinley Park, Alaska centr.” Recently the latter two taxa have been assigned the status of junior synonyms to *apricatus*, which has publication date priority. The second subspecies is *golovinus* described from Golovin Bay, Seward Peninsula. Its original status was as a full species, but it has recently been assigned subspecific status under *phoebus*. In North America, *P. phoebus* is restricted to Alaska with additional subspecies in the Old World. A very similar appearing species, *P. smintheus* E. Doubleday flies elsewhere in North America in localities west of the 103rd meridian.



Male V



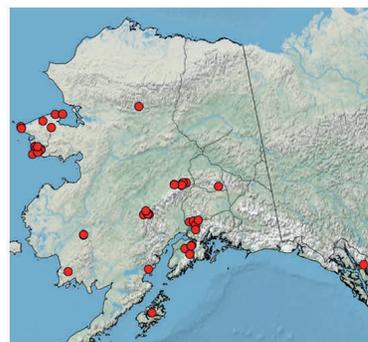
Male D



Female V



Female D

*Parnassius phoebus apricatus*

Habitat. Typically moist montane meadows where the larval host grows; hillsides in the Nome area. *P. phoebus apricatus* is found above 3000 feet, while *P. phoebus golovinus* occurs to 500 feet. Both species are extremely local, but generally fly in numbers once a site has been located.

Biology. Winter hibernation in Alaska not fully known, either egg or first instar larva. The larval host is *Sedum rosea* (L.) Scop. (Stonecrop).

Flight period. Typically late June–early July for *apricatus* and mid-August for *golovinus*.

Diagnostic characters. Expanse: 52 mm. *P. phoebus* is distinguished from *eversmanni* as noted above for the latter species. The sexes are slightly dimorphic. The females have a darker and more dusky appearance than the males and the red spots are larger and more prominent. In females of *apricatus* the two large mid-wing red spots typically have pale centers, while in *golovinus* the spots are solid red. The hind wing red spots in *golovinus* are larger than those in *apricatus*.

Field notes. *Parnassius phoebus* is a relatively lazy flier. The males patrol a foot to several feet above the ground surface searching for females. They settle frequently on soil/gravel patches with wings expanded to gain heat from the sun (dorsal basking) and on flowers to take up nectar. The females are more sedentary and spend much of their time in the understory with wings expanded (as shown in the accompanying field photo). When startled, however, they are rapid and determined fliers. Generally these butterflies are found in close proximity to their larval host plant.



Male V



Male D



Female V



Female D

Parnassius phoebus golovinus

Species 7 *Papilio machaon aliaska* Scudder — Old World Swallowtail

Distribution. All around the Northern Hemisphere with various described subspecies. Originally described from Europe, Alaska records include most of the state, and the gap in the southwestern quadrant probably results from lack of collection/survey activity. Recorded from 300 feet elevation (Seward Peninsula) to well over 3000 feet in the Interior.

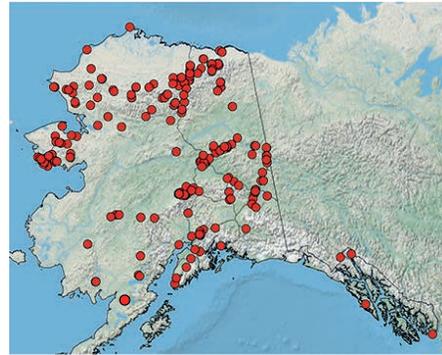
Habitat. This butterfly is generally associated with mountain meadows and adjacent ridges.

Biology. Winter hibernation as pupa (chrysalis). The larval host in Alaska is *Artemisia arctica* Less., which grows over most of Alaska up to 6500 feet. Elsewhere over its range other *Artemisia* species and other composites are utilized.

Flight period. All of June into early July, depending upon locality.

Diagnostic characters. Expanse: 75mm. *Papilio machaon* and *Papilio zelicaon* (Species 8) are easily confused. In Alaska, locality makes identification easy since *zelicaon* to date has been found at Hyder only. Two characters separate these two species: the width of the broad yellow bands on the FW and the orange spot at the tornus of the upper side of the HW. The yellow bands are much broader in *machaon* than in *zelicaon*, and the orange spot is without a central pupil. There is a black spot adjacent to the wing margin.

Field Notes. The males congregate along ridge tops waiting for females to arrive from below for courtship and mating. Sometimes a half-dozen or more males can be observed vying with each other for territory. As a general rule, however, *machaon* is not particularly abundant in any one locality. Males often settle at wet gravel or mud to take up minerals, as do females occasionally. Both sexes nectar readily at flowers. Flight is very rapid and generally rather erratic.



Male V



Male D



Female V, D



Species 8 *Papilio zelicaon* Lucas — Anise Swallowtail

Male V



Male D



Female V, D



Distribution. Much of western Canada and the western U.S. In Alaska to date, it is known only from Hyder at the extreme southern end of the panhandle.

Biology. Winter hibernation as chrysalis. Various members of the Umbelliferae (Parsley Family) serve as larval hosts including *Angelica* sp. and Cow Parsnip (*Heracleum lanatum* Michx.). Two species of *Angelica* and Cow Parsnip grow in the Hyder area.

Habitat. *P. zelicaon* can be found from sea level to high mountains in a variety of ecological zones.

Flight period. Too little is known about this species in Alaska. Over its geographic range, it flies from June into August, depending upon locality.

Diagnostic characters. Expanse: 60 mm. Characters for separating *zelicaon* from *machaon* are noted in the latter entry. In *zelicaon*, the FW yellow bands are narrower and the HW orange tornal spot has a nearly central black pupil that is connected with a tail to the wing margin.

Field notes. The habits of this butterfly are nearly identical to those of *machaon*. Males ridge top. Flight of both sexes is rapid and erratic. Both sexes come readily to flowers, but tend more to hover rather than settling.



Species 9 *Papilio canadensis* Rothschild & Jordan — Canadian Tiger Swallowtail

Distribution. From Alaska across Canada and south of the Canadian border into New England and westward along the northern tier states.

Habitat. Boreal forest and woodlands and occasionally in scrub forest at tree line.

Biology. Winter hibernation as chrysalis. Larval hosts include a variety of broad-leaf trees including aspen, ash, willow, and wild cherry.

Flight period. Early June to early July, depending upon elevation.



Male V



Male D



Female V



Female D

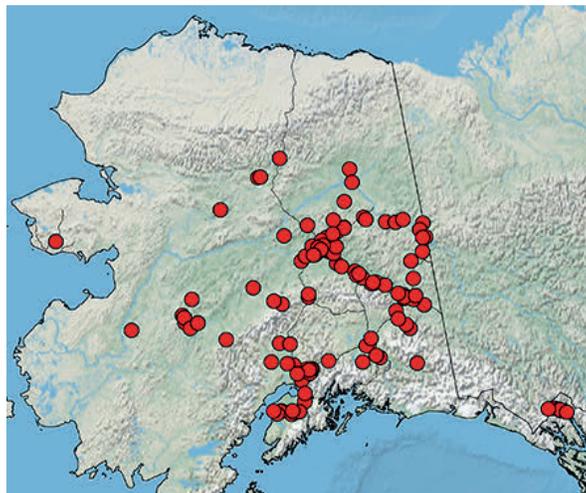




Papilio canadensis congregating on damp soil at Bonanza Creek.

Diagnostic characters. Expanse: 70 mm. No similar species occurs in Alaska, and this is the largest Alaskan butterfly. There is slight sexual dimorphism. The blue lunules in the females are often somewhat larger than in the males. In the other widespread Alaskan swallowtail, *P. machaon*, the basal area to almost mid-wing of the DFW is dark, whereas in *P. canadensis*, the yellow color extends nearly to the body. Generally *P. machaon* flies at higher elevations than *P. canadensis*, and is found in open tundra and on ridge tops. *P. canadensis* is associated with low-elevation woodlands.

Field notes. Males have a gliding flight with intermittent flapping when undisturbed, which becomes rapid and erratic if they are disturbed. The males are avid “puddlers” as seen in the photograph above. They also dorsally bask on branch ends from which they dart out to investigate passing butterflies and small birds. Female are less active and frequent flowers regularly.



Family Pieridae — Sulphurs, Marbles, Orange tips, Whites

Members of this family are worldwide in distribution. The sulphurs, genus *Colias*, are represented on all continents except Australia, with species occurring in diverse habitats ranging from desert regions to the Arctic, including Greenland, and to the high Andes in South America. The males of many species have species-specific intense ultraviolet light reflectance patterns used in courtship. Speciation in this genus is complex, and it will require molecular analysis to resolve various issues. Several of the arctic *Colias* may have currently unrecognized sibling species. Adults are strong fliers. The marbles derive their name from the green marbled pattern on the undersides of the HWs, also found in orange tip species. Adults are generally weak fliers that perch frequently on flowers and vegetation. Several of the whites are serious agricultural pests, especially on cabbage and its relatives.

Species 10 *Colias philodice vitabunda* Hovanitz — Lively Clouded Sulphur

Distribution. Eastern half of Alaska, Seward Peninsula and Cape Kruzenstern area.

Habitat. Generally open meadows or tundra at elevations from close to sea level to over 3000 feet.

Biology. Winter hibernation as larva. Legumes are the larval hosts, especially clovers.

Flight period. Mid-June into mid-July.

Diagnostic characters. Expanse: 44 mm. Sexually dimorphic with yellow and white females. The width of the dark wing borders is variable; solid black in males; fenestrated in females. *C. philodice* is separated from several similar species by the prominent orange spot on the upper side and the central spot on the under side of the HW. This latter spot is inclosed by a double pink ring not found in other Alaskan species. The several small satellite spots vary in number and may be absent.

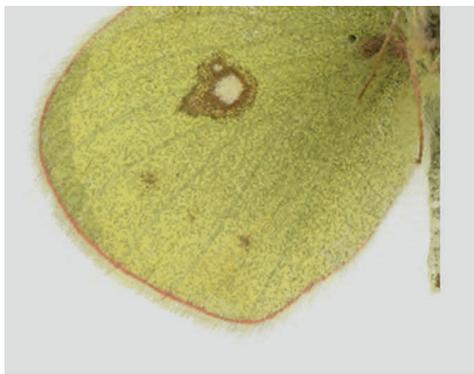
Field notes. This species is usually encountered in numbers. These butterflies readily visit flowers and the males puddle. It is the last of the *Colias* to emerge.



Male V



Male D



Male, Discal Spot



Female



Female V



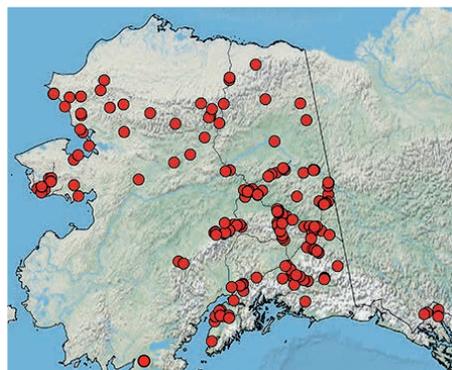
Female D



Female D



Female D



Species 11 *Colias kluanensis* Ferris — Kluane Sulphur



Male V



Male D



Female V

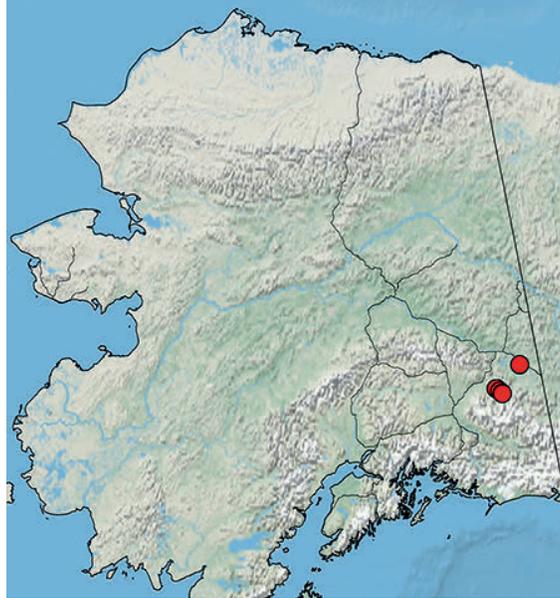


Female D



Male D





Taxonomic note. This butterfly was originally described as *Colias alexandra kluanensis*. Subsequently it has been listed as *C. christina kluanensis* and *C. krauthii kluanensis*. Based on cladistic analysis it is very closely related to *krauthii* from the Black Hills of South Dakota and Wyoming. Given the wide geographic separation between the two populations, it appears best to treat *kluanensis* as a distinct species.

Distribution. To date, this species is known from the Nabesna Road just northeast of Wrangell-Saint Elias National Park and Preserve and the area around Northport Airport. It is probably a recent immigrant from the Yukon Territory, having followed its habitat-opportunistic larval host as it colonized the sides of newly opened roads.

Habitat. Open areas in taiga, especially meadows and roadsides.

Biology. Winter hibernation as larva. *Hedysarum boreale* Nutt. is a known larval host, and an opportunistic legume.

Flight period. Starting in mid-June, but peaking during the first half of July.

Diagnostic characters. Expanse: 44 mm. Sexually dimorphic as shown in the figures. The amount of orange color dorsally is variable and often shades into yellow near the wing margins. The underside of the HW is a pale mossy green with a small pink-ringed central spot. It is most likely to be confused with *C. canadensis*, which is an early season species that flies in similar habitats, but is more widely distributed in Alaska. The dark wing borders of the males are much wider in *kluanensis* and the small satellite spot is missing from the HW central spot. Generally geography and timing permit separation of these two species.

Field notes. Flight is strong, a foot or two above the vegetation, but the butterflies visit flowers frequently and males puddle readily.

Species 12 *Colias hecla* Lefèbvre — *Hecla sulphur*

Male V



Male D



Female V



Female D



Distribution. Holarctic. Found over much of Alaska.

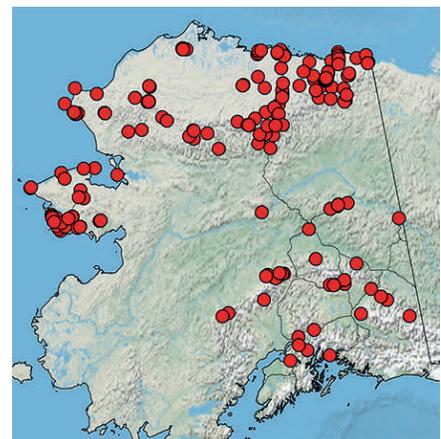
Habitat. Above altitudinal and latitudinal tree line. Mountains and domes south of the Brooks Range and open tundra north at elevations from 100 feet (Seward Peninsula) to well over 3000 feet (south of the Brooks Range).

Biology. Winter hibernation as larva. Legumes with *Astragalus alpinus* L. apparently a preferred host.

Flight period. Late June to late July.

Diagnostic characters. Expanse: 39 mm. Generally habitat and flight period separate *C. hecla* from *canadensis*. The upper side dark borders are broader in *hecla*. The under side of the HW is dark mossy green.

Field notes. A very wary butterfly. The flight is rapid, erratic and close to the ground. Flowers are visited, especially those of legumes, and males occasionally puddle.



Species 13 *Colias canadensis* Ferris — Canadian Sulphur

Distribution. Interior Alaska eastward to Yukon Territory border.

Biology. Winter hibernation as larva. Unknown legumes.

Habitat. Open areas, especially roadsides, in the taiga and wet shrub tundra, from 1200 feet to above 3000 feet.

Flight period. This is an early-season species in Alaska with first adults in early June, but stragglers may be found until early July.

Diagnostic characters. Expanse: 40 mm. Sexually dimorphic and extremely variable in both color and markings. It might be confused with *C. hecla*. See *hecla* entry. The mossy green color of the underside is not so dark as in *hecla*.

Field notes. A rapid and erratic flier, but visits flowers and males puddle.



Male V



Male D



Male D



Male D



Male D



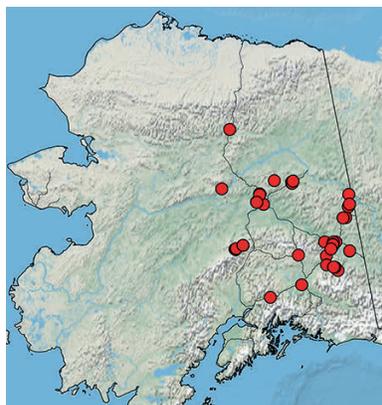
2 Female Forms D



Female V



Female D



Species 14 *Colias tyche thula* Hovanitz — Thula Sulphur

Distribution. North Slope and Seward Peninsula.

Habitat. Open tundra and open scrub areas (Seward Peninsula).

Biology. Winter hibernation as pupa. Larval host unknown legumes.

Flight period. Late June to mid-July.

Diagnostic characters. Expanse: 35 mm. Similar to *Colias nastes*, and the two species often occur together. The DFW dark borders of *C. t. thula* males are solid (but vary widely in width); in *nastes* they are interrupted and fenestrated to varying degree. The dorsal wing color varies from dirty white-to-yellow to yellow with occasionally a strong orange flush resembling *C. tyche boothii* J. Curtis from the Boothia Peninsula, Baffin Is., and Hudson's Bay. Females are difficult to separate from *nastes* females, but tend to be less darkly marked.

Field notes. A rapid and erratic flier, fairly close to the ground, that visits flowers briefly, but is usually on the wing.



Male D



Female D



Male D



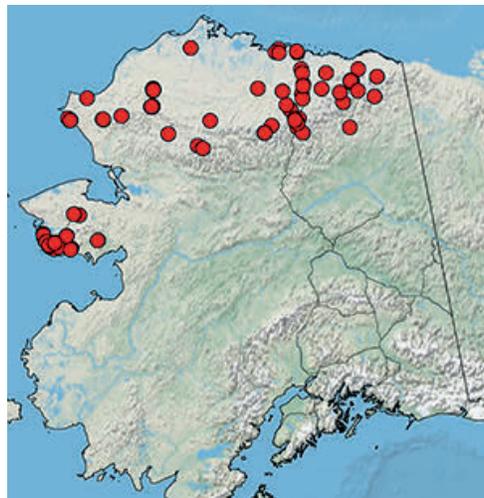
Female D



Male V



Female V



Species 15 *Colias nastes aliaska* O. Bang-Haas — **Alaska Sulphur**

Distribution. Above tree line in southern Alaska south of the Brooks Range; open tundra to the north.

Habitat. Open tundra and open scrub areas (Seward Peninsula).

Biology. Winter hibernation as larva. Larval hosts are *Astragalus alpinus* L. and other legumes.

Flight period. Late June to mid-July.

Diagnostic characters. Expanse: 35 mm. Sexually dimorphic and highly variable in both sexes. See discussion under *C. tyche*.

Field notes. A rapid and erratic flier, fairly close to the ground, that visits flowers briefly, but is usually on the wing. Males often frequent high windy ridges.



Male V



Male D



Male D



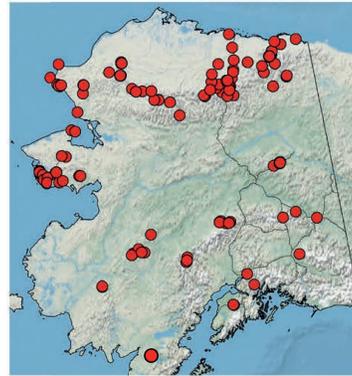
Male D



Female V



Female D



Species 16 *Colias gigantea* Strecker — Giant Sulphur

Distribution. Fairly widely distributed in Alaska, and elsewhere over much of western Canada and south in the northern Rocky Mountains to Wyoming.

Habitat. Moist areas, especially bogs, where willows grow from 100 feet elevation to just over 3000 feet.

Biology. Winter hibernation as larva. Willows (*Salix* sp.) are the larval host.

Flight period. Late June through mid-July.

Diagnostic characters. Expanse: 46 mm. Sexes strongly dimorphic with the females varying from yellow to pale creamy white. Generally in the females there is only a suggestion of dark outer borders on the DFW. This species can be confused with *C. philodice vitabunda*, but is separated from it by examination of the VHW central spot, which is encircled by a single pink ring while the ring is double in *vitabunda*. Individuals from the North Slope are frequently much smaller than those from south of the Brooks Range.

Field notes. The males are robust fliers through the willows and over the wettest areas of bogs, but they do puddle and nectar at flowers. The females are less active and come readily to flowers.



Male V



Male D



Female V



Female D



Female D



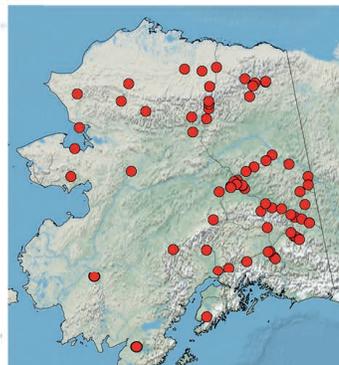
Female D



Female D



Female D



Species 17 *Colias palaeno chippewa* W. H. Edwards — Palaeno Sulphur

Distribution. Over most of Alaska (the SW quadrant has been poorly sampled), and eastward over the northern Canadian provinces to east of Hudson Bay.

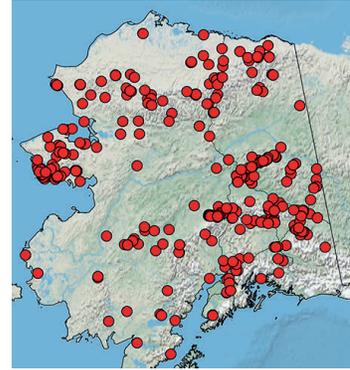
Habitat. Boreal forest to open tundra, at elevations from 100–3050 feet.

Biology. Winter hibernation as larva. Larval hosts are arctic blueberries (*Vaccinium* sp.).

Flight period. Early June to late July.

Diagnostic characters. Expanse: 38 mm. Strongly dimorphic with both yellow and white females. The dorsal dark wing borders are much reduced in the females. The small white circular spot in the middle of the VHW immediately separates *palaeno* from all other Alaska *Colias*.

Field notes. This a very common species and the butterflies come readily to flowers. The males often puddle in numbers.



Male V



Male D



Female V



Female V



Female V



Species 18 *Anthocharis sara alaskensis* Gunder — Alaskan Orange Tip

Distribution. Restricted to the environs of Haines and Skagway, but other subspecies occur along the Pacific Coast to California and eastward to the Rocky Mountains.

Habitat. Low elevation forest openings and roads.

Biology. Winter hibernation as pupa. Larval hosts are plants in the mustard family.

Flight period. Early May into early June with occasional stragglers into July.

Diagnostic characters. Expanse: 36 mm. Moderately sexually dimorphic with occasional yellow instead of white females. The black borders of the orange patch are broken or spotted in the females. The FW orange apical patch immediately identifies this species.

Field notes. A weak flier that visits flowers avidly. Not uncommon, but locally distributed.



Male V



Male D



Female V



Female D



Species 19 *Euchloe ausonides ogilvia* Back — **Back's Marble**

Distribution. Eastern Alaska from the North Slope (Toolik Lake) southward and into the Yukon Territory.

Habitat. Fields and meadows, roadsides, and open tundra from 600–2300 feet.

Biology. Winter hibernation as pupa. Larval hosts are various mustards.

Flight period. Early June into early July.

Diagnostic characters. Expanse: 39 mm. Of the three marble species found in Alaska, *E. ausonides* is the largest in size and has the most acute FW tips. The VHW has large white spaces within the green field, and usually shows some yellow coloring, as opposed to more complete green areas in *E. naina* and *E. creusa*. The sexes are similar with the females showing more yellowish coloration than the males.

Field notes. Strong and rather rapid fliers when disturbed, but visit flowers frequently.



Male V



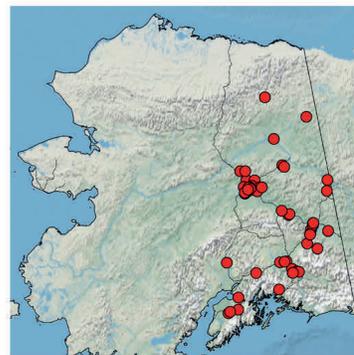
Male D



Female V



Female D



Species 20 *Euchloe naina jakutia* Back — Green Marble

Distribution. In Alaska, known only from the Kenai Peninsula. The species is Siberian and ssp. *jakutia* was described from the Ogilvie Mountains in the Yukon Territory.

Habitat. High rocky ridges and slopes above tree line.

Biology. Winter hibernation as pupa (presumed). Oviposition has been observed on an alpine mustard.

Flight period. Early June.

Diagnostic characters. Expanse: 33 mm. See *E. ausonides*. The VHW green area is darker green than in either *E. creusa* or *E. ausonides* and there are fewer white openings than in the other two species. There is moderate sexual dimorphism and the females are more heavily maculated than the males and duskier in aspect.

Field notes. A wary and erratic flier. These butterflies do visit flowers and perch on gravel or rocks.



Male V



Male D



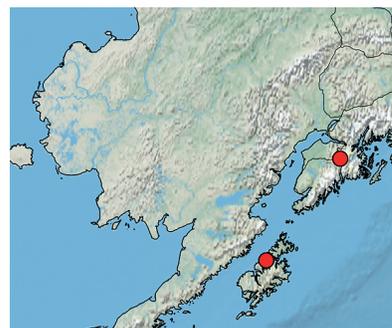
Male V



Female D



Female V



Species 21 *Euchloe creusa* (E. Doubleday) — Northern Marble

Distribution. Seward Peninsula across northern Alaska and SE interior to the panhandle.

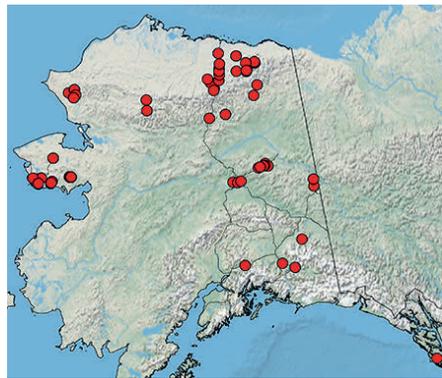
Habitat. Widespread: openings in boreal forest and taiga, river valleys, open tundra from 100 feet elevation to over 3000 feet.

Biology. Winter hibernation as pupa (presumed). Larval hosts in the mustard family.

Flight period. Mid-June to early July.

Diagnostic characters. Expanse: 30 mm. See *E. ausomides* and *E. naina*. Only slight sexual dimorphism; females have the FW outer margin more rounded than the males.

Field notes. Flight usually close to the ground and weak at times.



Male V



Male D



Female D



Species 22 *Pieris marginalis* complex — Margined White Complex

Taxonomic note. The taxonomic position of these butterflies is unclear. Various authors have proposed a variety of subspecies names and one additional species name (*angelika* Eitschberger) for the butterflies that occur in Alaska. Originally North American butterflies were placed as various subspecies of the Old World *Pieris napi* group. Recent molecular studies indicate that North American butterflies are distinct from *napi*. *P. marginalis* is the oldest available name for the Alaskan fauna. Much work needs to be done to discriminate species within the *marginalis* group. The limited molecular studies that have been conducted produced inconclusive results. Until the life histories can be worked out for all of the Alaskan entities, taxonomic status will remain unclear.

There are no clear morphological characters for species separation. Because the butterflies exhibit so much variation in pattern and hue from any given locality, visual separation into species is impossible. It is thus unclear if several different species are occupying a given locality, or if there is just one highly variable species present. Two records exist for *Pieris ochracea* Harris (Mustard White): a specimen from Prince of Wales Island collected in 2013, and an earlier record from near Skagway. If the specimens are actually *P. ochracea*, they represent a considerable western range extension for this species. The Prince of Wales Is. specimen is in the University of Alaska Museum and it is not clear if it is *P. ochracea* or simply a very pale specimen of an entity in the *P. marginalis* complex.



Male D

Galbraith Lake



Female D



Male D

Bonanza Creek



Female D



Males V



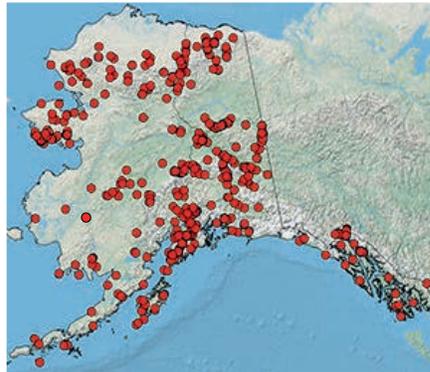
Female D, Haines



Female V, Bonanza Creek



Female D, Haines



Distribution. Apparently statewide with records even from Dutch Harbor in the Aleutians; SW quadrant poorly surveyed.

Habitat. Virtually all of the Alaskan life zones from coastal riparian areas at Haines to arctic tundra on the North Slope at elevations from sea level to over 3000 feet.

Biology. Winter hibernation as pupa (presumed). Mustards are the larval hosts.

Flight period. June to mid-July.

Diagnostic characters. Expanse: 40 mm. No similar species fly in Alaska. Strongly sexually dimorphic. Some of the various forms are illustrated. Males tend to be fairly uniform across all localities. The main variation being the presence of a faint black spot on the DFW in some individuals, and the intensity of the dark veining on the VHW. Females show much variation in both color and intensity of markings over the range of distribution as well as at any given locality. Individuals from Dutch Harbor are quite dark creamy-yellow. In general, coastal populations tend to produce more creamy-yellow individuals than tundra and higher elevation populations.

Field notes. Males puddle avidly and often in large numbers on warm sunny days. Flight is rather erratic and not particularly rapid. Both sexes regularly visit flowers.

Species 23 *Pontia occidentalis nelsoni* (W. H. Edwards) — Nelson's White

Distribution. Over much of the state excepting the SW and extreme southern area.

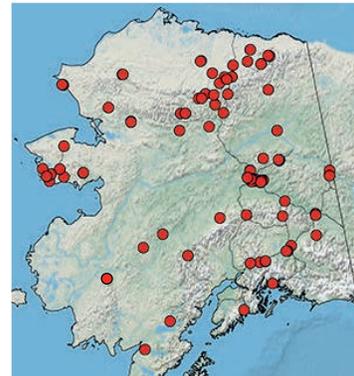
Habitat. Essentially all Alaskan life zones from sea level to over 3000 feet.

Biology. Winter hibernation as pupa. Larval hosts are various mustards. Native and invasive species of *Lepidium* are used along the Chena River and flood control spillway in the Fairbanks area.

Flight period. Mid-May into July.

Diagnostic characters. Expanse. 40 mm. No similar species in Alaska. Sexually dimorphic with the females darker and more heavily marked than the males.

Field notes. Flight is fast and erratic. Males are often found along windy ridge tops, gravel roadways and runways, and recently disturbed areas.



Male V



Male D



Female V



Female D



Male



Female

Family Lycaenidae — Coppers, Elfins, Blues

The representatives of this family comprise a rather disparate group in terms of appearance. As the name implies, the coppers generally have some coppery coloration or a coppery sheen. The elfins are dusky in shades of gray and brown. The males have a distinctive “sex patch” (specialized scales) dorsally just below the FW costal margin. As the name implies, all of the blues show this color, although the shade may vary with species from pale blue to dark blue, and purplish-blue. Sexual dimorphism is common.

Species 24 *Lycaena phlaeas* (Linnaeus) — Little Copper

Lycaena phlaeas arethusa (Dod) — Arethus Copper

Lycaena phlaeas ssp. North Slope subspecies



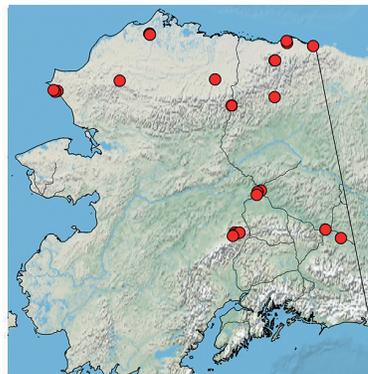
Male V



Male D



Male D, North Slope



Distribution. Two distinct populations exist in Alaska. *Lycaena phlaeas arethusa* occurs in the interior, while an unnamed subspecies occurs north of the Brooks Range.

Habitat. Near Fairbanks, *L. p. arethusa* is associated with bog edges where *Rumex* grows. The North Slope subspecies has been found on benches above streams.

Biology. Winter hibernation as pupa. Larval hosts are *Rumex* sp. (Docks) south of the Brooks Range, *Oxyria digyna* (L.) Hill, Mountain Sorrel, north of the Brooks Range.

Flight period. This is a late-season species with adults not appearing until late July into August.

Diagnostic characters. Expanse: 25 mm. The distinct coppery color and the red-orange band along the inner margin of the HW separate *phlaeas* from the other two *Lycaena* species found in Alaska. Sexes similar.

Field notes. The females are rather sedentary and often can be found perched on *Rumex* flower stalks. The males are feisty and will attempt to chase other butterflies from their territories. Flight is fast and erratic.

Species 25 *Lycaena dorcas arcticus* (Ferris) — Arctic Copper

Distribution. Central and southeastern Interior with one northwestern record; other subspecies elsewhere in North America.

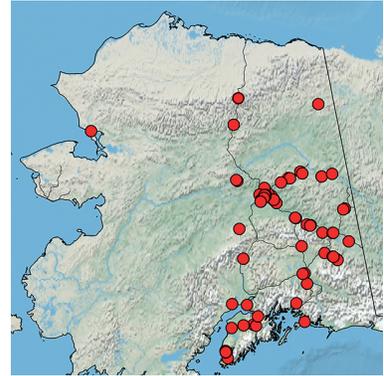
Habitat. Boggy and open areas in the taiga where the larval host grows. Usually common, but local.

Biology. Winter hibernation as pupa. Laval host is *Potentilla fruticosa* (L.), Shrubby Cinquefoil.

Flight period. July.

Diagnostic characters. Expanse: 23 mm. Sexually dimorphic with the females displaying dorsally much more orange color than the males. The general violet color dorsally with the orange crenulate submarginal band and violet-ochre VHW separate *dorcas* from the other two copper species.

Field notes. These butterflies are generally weak and slow fliers covering only short distances from the larval host bushes. Both sexes nectar at a variety of flowers, especially yellow ones such as goldenrods.



Male V



Male D



Female V



Female D



Male



Female

Species 26 *Lycaena mariposa charlottensis* (W. Holland) — **Queen Charlotte's Copper**

Distribution. Known to date only from the southeastern islands and Mile 41 of the Haines Hwy., near the British Columbia border. Additional subspecies occur in the southern Yukon Territory and widely in the western U.S.

Habitat. Open areas where the presumed host plant grows. Often common but local.

Biology. Hibernation as pupa. Larval host thought to be *Potentilla fruticosa* (L.), Shrubby Cinquefoil.

Flight period. Late June into July.

Diagnostic characters. Expanse: 25 mm. The mottled gray VHW immediately distinguishes this species from the other two Alaska coppers and all other North American coppers. Strongly dimorphic as the photos indicate.

Field notes. These butterflies are lazy fliers and relatively sedentary. They frequent flowers and males puddle.



Male V



Male D



Female V



Female D

Species 27 *Incisalia augustinus* (Westwood) — Brown Elfin

Distribution. Dalton Hwy., Fairbanks region and southeastern. Widespread in North America.

Habitat. Open areas, roads, and power line cuts in boreal forest.

Biology. Winter hibernation as pupa. Many larval hosts are known for the species in North America, mainly members of the heath family (Ericaceae); probably *Arctostaphylos uva-ursi* (L.) Spreng. in the Fairbanks area.

Flight period. May into mid-June. Along with *I. polios* one of the first butterflies to appear in spring.

Diagnostic characters. Expanse: 23 mm. Slightly sexually dimorphic; females lack the male FW dark “sex” patch, but may show a dark smear in the same wing area. This species is separated from *I. polios* in having a brown outer half of the VHW (often overscaled with a rusty orange hue), as opposed to the hoary gray markings in *polios*.

Field notes. Flight generally over short distances close to the ground. These butterflies perch on low vegetation or sit on the ground.



Male V



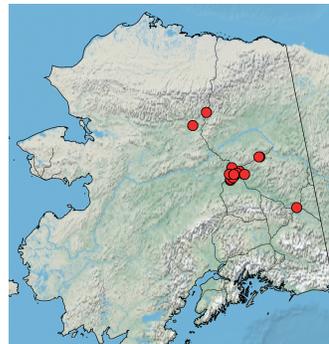
Male D



Female V



Female D



Species 28 *Incisalia polios* Cook & F. Watson — Hoary Elfin

Distribution. Known from the Fairbanks area and near Tok; widely distributed elsewhere in North America.

Habitat. Open areas, roads, and power line cuts in boreal forest in the Interior.

Biology. Winter hibernation as pupa. Larval host in Fairbanks area is *Arctostaphylos uva-ursi* (L.) Spreng.

Flight period. May into mid-June. With *I. augustinus*, one of the first butterflies to appear in spring.

Diagnostic characters. Expanse: 23 mm. Excepting the “sex” patch of the males, the sexes are similar. The VHW outer area is hoary gray (hence the common name), which separates *I. polios* from *I. augustinus*.

Field notes. Flight generally over short distances close to the ground, usually not far from the larval host. These butterflies perch on low vegetation or sit on the ground.



Male V



Male D



Female V



Female D



Species 29 *Cupido amyntula* (Boisduval) — Western Tailed Blue

Distribution. Widely distributed, but concentrated in the southeastern quadrant and interior (Fairbanks area) of Alaska with one North Slope record; distributed widely in western Canada and the western U.S.

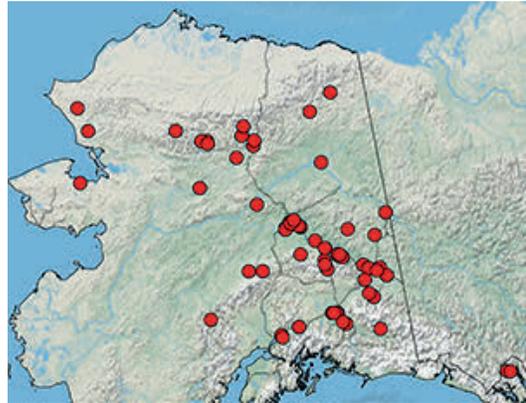
Habitat. Open areas, roadsides, power line cuts, generally at fairly low elevation.

Biology. Winter hibernation probably as pupa, but perhaps as late-instar larva. Larval hosts in the legume family; *Lathyrus* sp. recorded in Canada. Larvae feed in seedpods.

Flight period. June.

Diagnostic characters. Expanse: 22 mm. Sexually dimorphic; males dorsally uniform blue-violet; females with blue areas near the body and brown outwardly. The small tails projecting from the tornal area of the HW distinguish this species from other Alaskan blues.

Field notes: A weak flier usually close to the ground; visits flowers and males puddle.



Male V



Male D



Female D

Species 30 *Celastrina lucia* (W. Kirby) — Azure Butterfly

Distribution. Central Alaska mainly; widespread elsewhere.

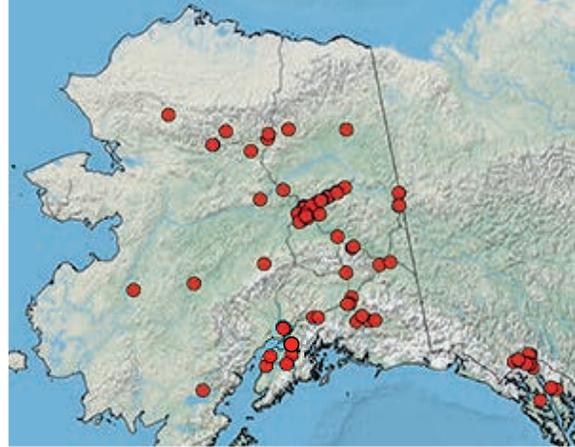
Habitat. Open areas in woodlands, typically.

Biology. Winter hibernation as pupa. Various host plants have been reported in the literature, but unknown for Alaska. Eggs are laid singly in flower buds and the larvae feed in the host plant flowers. Larvae are often associated with ants.

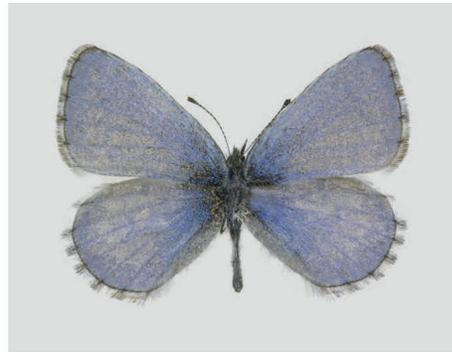
Flight period. Late May and June; one of the earlier emerging species.

Diagnostic characters. Expanse: 22 mm. Sexually dimorphic; females duskier than males with dark shading along the FW border. No other Alaskan blue has the mottled VHW of *Celastrina*.

Field notes. A weak flier; visits flowers regularly and males puddle in large numbers.



Male V



Male D



Female D

Species 31 *Glaucopsyche lygdamus couperi* Grote — Silvery Blue

Distribution. *G. lygdamus* is a widespread species in Alaska and elsewhere in North America. The absence of records in the southwestern quadrant of the state is undoubtedly a result of lack of sampling.

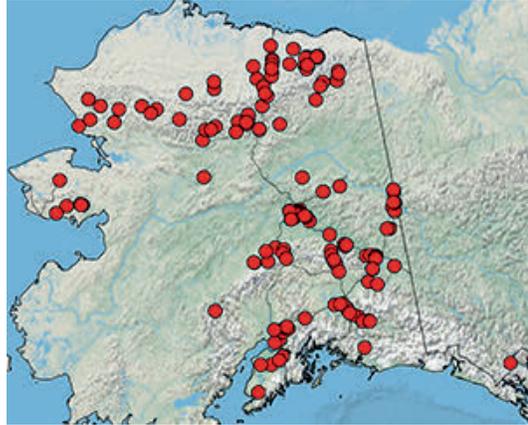
Habitat. Generally open areas, meadows, forest clearings, tundra where legumes flourish.

Biology. Winter hibernation as pupa. Reported food plants are multiple species in the legume family; unknown in Alaska. Eggs are laid on flower buds and the emerging larvae feed on the opening flowers.

Flight period. June and early July.

Diagnostic characters. Expanse: 23 mm. Sexually dimorphic; Dorsally males are silvery blue in sunlight, but appear dull as prepared specimens; females are darker and dusky with brown wing margins dorsally. Ventral wings with post-median black spot row; stronger on FW than HW; sometimes nearly obsolete on HW. No other Alaskan species resembles *lygdamus*.

Field notes. A moderately strong flier; visits flowers; males puddle.



Male V



Male D



Female D

Species 32 *Plebejus idas alaskensis* F. Chermock — Alaskan Blue

Distribution. Widespread in Alaska where sampling has been conducted, and as other subspecies elsewhere in western North America.

Habitat. Generally open areas; forest clearings and open tundra to over 2000 feet.

Biology. Winter hibernation as egg. Various host plants are reported in the literature. In Alaska candidates are *Vaccinium* sp., *Ledum palustre* L. (Labrador Tea), *Empetrum* sp., *Lupinus arcticus* S. Wats., and *Lathyrus* sp.

Flight period. Late June to late July.

Diagnostic characters. Expanse: 23 mm. Sexually dimorphic; males uniformly blue dorsally; females with blue patches close to the body and brown outwardly. No other Alaskan blue has orange and blue lunules along the outer margins of the VHW.

Field notes. Not a particularly strong flier; males puddle in numbers. Both sexes visit flowers avidly, especially Sweet Clover (*Melilotis* sp.) if present.



Male V



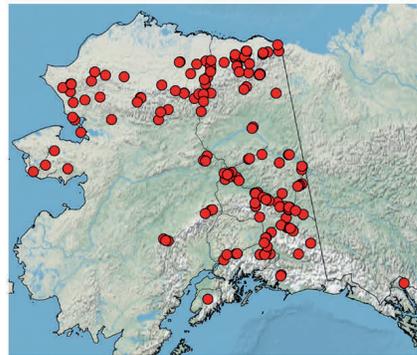
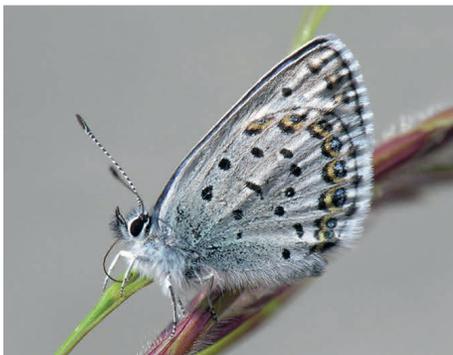
Male D



Female V



Female D



Taxonomic note. The next three species are placed in the genus *Plebejus* in recent books and checklists related to North American butterflies. Molecular studies in Europe on the family Lycaenidae have demonstrated that different generic assignments are required: to *Icaricia* and *Agriades*. The interested reader should refer to Talavera et al., 2013, *Cladistics*, 29:166–192.

Species 33 *Icaricia saepiolus amica* (W. H. Edwards) — **Kodiak Blue**

Distribution. Interior and southeastern quadrant in Alaska; widespread elsewhere in North America.

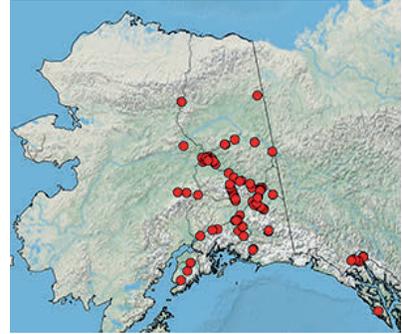
Habitat. Most life zones from 400 feet to over 3000 feet in open areas.

Biology. Winter hibernation as pupa. Larval hosts are various clovers.

Flight period. June until mid-July.

Diagnostic characters. Expanse: 24 mm. Strongly sexually dimorphic. Males dorsally greenish-blue with only a very narrow brown marginal border; females mostly brown dorsally with blue patches near the body. Ventrally there is a double row of post-median black spots on both wings, which separates *I. saepiolus* from other Alaskan blues.

Field notes. A moderately strong flier, especially when disturbed. Males puddle and both sexes visit flowers, clovers in particular.



Male V



Male D



Female V



Female D



Species 34 *Agriades optilete yukona* (W. Holland) — Yukon Blue

Distribution. Central Europe to Siberia, Japan, Alaska, Yukon Territory, British Columbia and Northwest Territories. Lack of records from southwestern Alaska probably from lack of sampling.

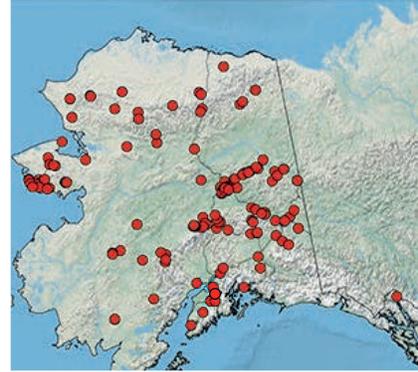
Habitat. Boggy areas at low elevation, moist tundra at higher elevations to over 3000 feet, and North Slope.

Biology. Winter hibernation. Half-grown larvae. Larval hosts are blueberry and cranberry (*Vaccinium* sp.).

Flight period. Late June into July.

Diagnostic characters. Expanse: 20 mm. This is the smallest of the Alaskan butterflies. Sexually dimorphic with males dorsally violet-blue and females a darker violet blue with brownish wing margins. The prominent VHW black spots and orange spot distinguish *optilete* from other Alaskan blues.

Field notes. Because of its small size, this little butterfly is often overlooked in the field. They usually fly close to the ground. They visit flowers and males puddle.



Male V



Male D



Female V



Female D



Species 35 *Agriades glandon* (de Prunner) — Mountain Blue***Agriades glandon megalos* McDunnough — Large-spotted Blue**

Distribution. Over much of Alaska, but SW quadrant generally un-sampled. The species as a whole is widespread in western North America.

Habitat. Recorded from near sea level to over 3000 feet. Usually in open areas and not particularly common in Alaska; occasionally found in numbers.

Biology. Winter hibernation as pupa. The larva feed on a variety of plants from several different families. The Alaskan host is unknown, perhaps *Saxifraga* sp.

Flight period. Mid-June to mid-July.

Diagnostic characters. Expanse. 20 mm. This is another small butterfly. There is moderate sexual dimorphism with the females showing moderately strong pale spot areas dorsally. Specimens from the North Slope and Seward Peninsula differ somewhat in markings and general color from typical *megalos*. The large white band on the VHW distinguishes this species from other Alaskan blues.

Field notes. Often found flying close to the ground over gravelly areas. Both sexes come to flowers regularly.



Male V, D



Female V, D

***Agriades glandon megalos***



Male V, D

Seward Peninsula



Female V, D

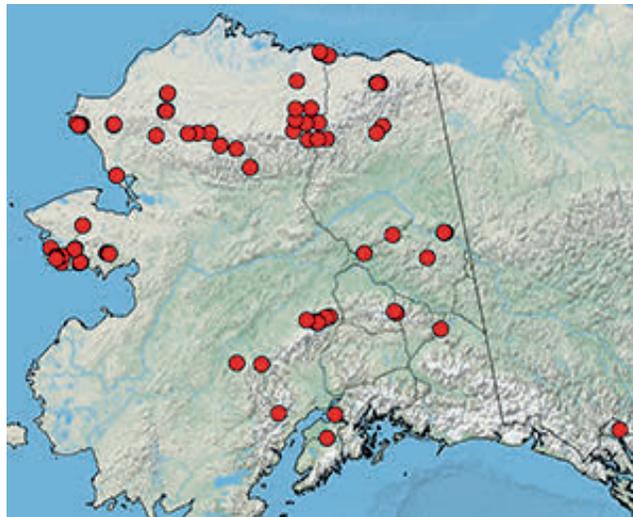


Male V, D

North Slope



Female V, D



**Family Nymphalidae — Fritillaries, Angle Wings, Checkerspots, Crescents, Ringlets
Alpines, Arctics — Brush-footed Butterflies**

Butterflies in this family are all characterized by having the front pair of legs reduced in size and not used for walking. These legs are covered with long hairs leading to the common name – Brush-footed. Winter hibernation is either as larva or adult, depending upon species. Under previous classification systems, these butterflies found in Alaska were divided into three major families: Heliconiidae (fritillaries); Nymphalidae (angle wings, checkerspots, crescents); Satyridae (ringlets, alpines, arctics). Elsewhere in the world additional families were recognized. These former full families are now treated as subfamilies of the Nymphalidae under the current classification system. Some species of *Boloria*, *Erebia*, and *Oeneis* fly every year on the North Slope and Seward Peninsula, but only during odd-numbered years (or in greatly reduced numbers) south of the Brooks Range. The reason for this situation is unclear and various theories have been proposed.

Species 36 *Limenitis arthemis rubrofasciata* (W. Barnes & McDunnough) — White Admiral

Distribution. Mainly east-central Alaska; additional subspecies widely distributed in Canada and the lower forty-eight states.

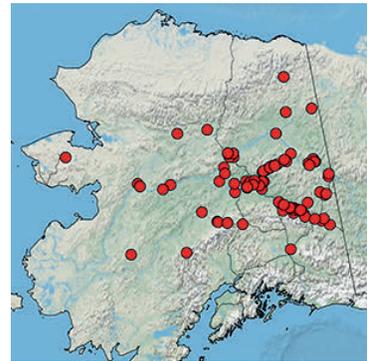
Habitat. Open areas in woodlands.

Biology. Hibernation as larva. Various host plants are used including aspen, cottonwood, willow and birch.

Flight period. Mid-June into August, depending upon locality and weather conditions.

Diagnostic characters. Expanse: 62 mm. The accompanying illustrations suffice. No similar butterflies occur in Alaska. Sexes are similar.

Field notes. Males perch on leaves at the end of tree branches where they laterally bask and from which they dart out to inspect passing butterflies. Flight is rapid, but with long gliding intervals. Males puddle regularly.



Male V



Male D



Species 37 *Boloria alaskensis* (W. Holland) — Alaskan Fritillary

Distribution. Over most of Alaska where surveys have been conducted, with scattered colonies in western Canada and southward in the Rocky Mountains to Wyoming. Two additional subspecies occur outside of Alaska.

Habitat. Open tundra, hillsides and ridges, from 500–900 feet in the Seward Peninsula, and to above 3000 feet elsewhere.

Biology. Hibernation as larva. *Polygonum* sp. serve as larval hosts.

Flight period. Mid-June to late July, but flight peaks in late June and early July.

Diagnostic characters. Expanse: 33 mm. Sexually dimorphic with darker females, sometimes with a bluish aspect. The angled HW outer margin separates *alaskensis* from other Alaskan bolorians.

Field notes. Males fly rapidly close to the ground searching for the more sedentary females. Males can appear bright orange in flight.

Taxonomic note. The nomenclature applied to this species has varied for many years. For some years the name was *Boloria napaea alaskensis*. It has now been established that both *napaea* (an Old World species) and *alaskensis* occur in eastern Russia, while only *alaskensis* occurs in North America.



Male V



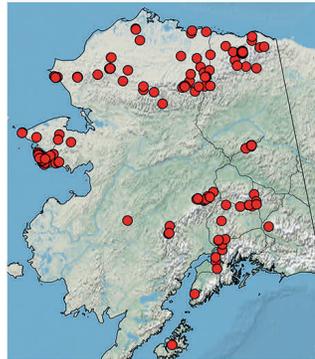
Male D



Female V



Female D



Species 38 *Boloria (Proclissiana) eunomia denali* (Klots) — Denali Bog Fritillary

Distribution. Known in Alaska primarily from the Seward Peninsula, North Slope, and SE Interior; several additional subspecies occur across Canada and in boreal/alpine regions of the lower forty-eight states, and in the Old World. The specimens illustrated are from the type locality of subspecies *denali*, “McKinley National Park,” now Denali National Park. The butterflies are rather variable in pattern.

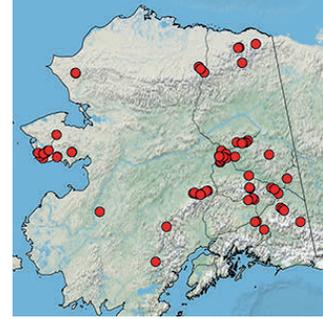
Habitat. Bogs, bog edges and wet tundra up to 3300 feet.

Biology. Hibernation as larva. Various hosts are reported in the literature including *Vaccinium* sp., *Polygonum* sp., but the Alaskan host is unknown.

Flight period. Early June into mid-July, depending upon locality.

Diagnostic characters. Expanse: 36 mm. Sexes are similar. The only similar species with prominent silver spots on the VHW is *B. selene*, which also occurs in bogs. The VHW of *B. eunomia* lacks a row of submarginal black spots found in *selene*. The silver spots in *selene* are bright and metallic, while generally dull silver in *eunomia*.

Field notes. These butterflies fly fairly rapidly close to the ground and stop at flowers.



Male V



Male D



Female V



Female D



Species 39 *Boloria (Clossiana) selene albequina* (W. Holland) — **Whitehorse Fritillary**

Distribution. An Holarctic species. Local and uncommon in Alaska, but several additional subspecies are widely distributed across Canada and elsewhere in the United States.

Biology. Hibernation as larva. *Viola* sp. serve as larval hosts.

Habitat. Boggy areas.

Flight period. Latter half of June into early July.

Diagnostic characters. Expanse: 43 mm. Sexes similar. See *B. eunomia* for species separation characters.

Field notes. A rapid flier, generally close to the ground, with frequent pauses on flowers.



Male V



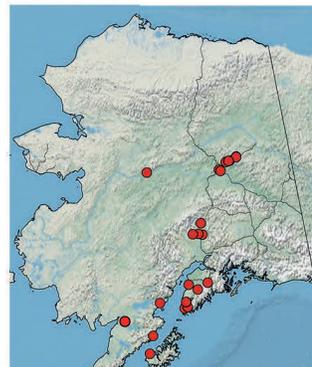
Male D



Female V



Female D



Species 40 *Boloria (Clossiana) frigga* (Thunberg) — Frigga's Fritillary*Boloria (Clossiana) frigga saga* (Staudinger) — Saga Fritillary*Boloria (Clossiana) frigga gibsoni* (W. Barnes & McDunnough) — Gibson's Fritillary

Distribution. Circumpolar. In North America, widely distributed in Alaska in regions surveyed; additional subspecies occur over most of Canada and southward in the Rocky Mountains to Colorado. The subspecies *saga* occurs south of the Brooks Range in taiga with *gibsoni* replacing it across the North Slope on tundra.

Habitat. Wet tundra, willow bogs in boreal forest, from 300 feet to over 3000 feet elevation.

Biology. Hibernation as larva. Oviposition on *Dryas integrifolia* M. Vahl in Alaska; willows recorded in some other areas, and suspected for Alaska also.

Flight period. June and early July.

Diagnostic characters. Expanse: 37 mm. Sexes similar. The dark basal area of the DFW, generally dark VHW with broad violaceous overtones in fresh specimens, distinguish this species from its congeners. The subspecies *gibsoni* is larger in size and much paler in color than *saga*.

Field notes. Flight is close to the ground with settling on the ground surface vegetation and rocks.



Male V



Male D

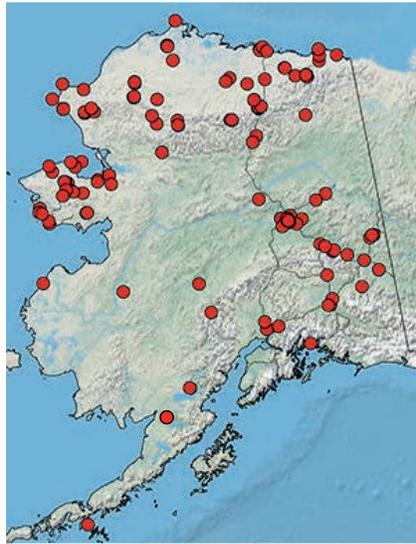


Female V



Female D

*Boloria (Clossiana) frigga saga*



Male V



Male D



Boloria (Clossiana) frigga gibsoni

Species 41 *Boloria (Clossiana) improba* (Butler) — Dingy Arctic Fritillary

Distribution. Northern Europe, Asia, Alaska and eastward intermittently to Greenland, and south in high mountains in the U.S. to Wyoming and Colorado.

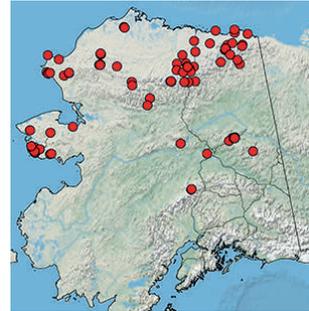
Habitat. Arctic tundra and moist tundra above tree line at elevations from 150 feet to over 3000 feet in Alaska.

Biology. Hibernation as larva. Probably one of the cushion-plant (prostrate) willows, such as *Salix arctica* Pall. and relatives are larval hosts.

Flight period. Mid-June into early July.

Diagnostic characters. Expanse: 31 mm. This is the smallest in size of the Alaskan bolorians, and resembles a dingy and miniature version of *B. frigga*. It is rather variable in aspect; several examples are illustrated.

Field notes. Flight is rapid and very close to the ground, with settling on gravel and depressions in the vegetation cover.



Male V



Male D



Male V



Male D



Female V



Female D



Species 42 *Boloria (Clossiana) epithore* (W. H. Edwards) — **Western Meadow Fritillary**

Distribution. To date there is only one Alaskan record from Prince of Wales Is. on 23 June, 2013. The species as a whole ranges from parts of western Canada south to California, and eastward to Idaho and Wyoming.

Habitat. In the lower forty-eight states, this species flies below tree line in open meadows and forest clearings in mountain areas.

Biology. Hibernation as larva. Violets are the larval host.

Flight period. June and July over its known range.

Diagnostic characters. Expanse: 39 mm. Sexes similar; not likely to be confused with other Alaskan bolorians.

Field notes. The butterflies are not particularly fast or wary fliers and flit over vegetation settling on flowers.



Male V



Male D



Female V



Female D

Species 43 *Boloria (Clossiana) polaris* (Boisduval) — Polaris Fritillary

Distribution. Holarctic in arctic regions of Eurasia and North America; widespread in Alaska and moderately common in suitable habitats.

Habitat. Tundra, from 150 feet to 3900 feet elevation.

Biology. Hibernation as larva. Reported hosts are *Dryas* sp. and *Vaccinium* sp. Annual on the North Slope and Seward Peninsula; odd years only in interior Alaska south of the Brooks Range.

Flight period. Late May (but typically late June) to early July.

Diagnostic characters. Expanse: 35 mm. Slightly sexually dimorphic with females darker and duller in appearance. *B. polaris* might be confused with *B. freija*. Separation is by the pattern on the underside of the HW: in *polaris* there is a well defined median spot band with a large hour-glass pale spot; in *freija* this band is not so well defined and there is a large oblong curved spot.

Field notes. Flight is rapid and erratic close to the ground. Both species dorsally bask to gain warmth.



Male V



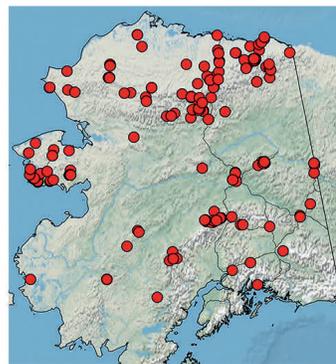
Male D



Female V



Female D



Species 44 *Boloria (Clossiana) astarte* (E. Doubleday) — Astarte Fritillary*Boloria (Clossiana) astarte distincta* (Gibson) — **Distinct Fritillary***Boloria astarte tschukotkensis* Wyatt — **Tschukotka Fritillary**

Distribution. Isolated localities in western, central, and northern Alaska, thence eastward to the high mountains of Alberta and south to Montana. The rock slides on Eagle Summit on the Steese Hwy. is one Interior location.

Habitat. Dry scree slopes and rock slides above tree line.

Biology. Hibernation as larva. Larval host is unknown. Annual, Seward Peninsula and North Slope; odd years only in the Interior south of the Brooks Range.

Flight period. Mid-June into early July.

Diagnostic characters. Expanse: 45 mm. Sexually dimorphic to the extent that females tend to be darker and duller looking. *B. astarte* bears a slight resemblance to *B. freija*, but is considerably larger in size and is restricted in habitat, whereas the smaller *B. freija* flies in a variety of habitats. *B. a. tschukotkensis* is darker in aspect than *distincta* and there is usually a greenish sheen to the VHW.

Field notes. This species is wary with rapid and erratic flight usually close to the ground over scree, but often soaring at some height over rock slides. Females tend to stay over and in the vegetation at the sides of open gravel and rocky areas. The butterfly is very local, but can be abundant once discovered.



Male V



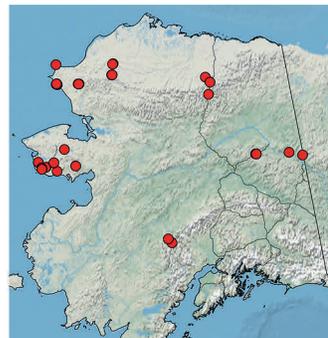
Male D

Boloria (Clossiana) astarte distincta

Female V



Female D

*Boloria astarte tschukotkensis*

Species 45 *Boloria (Clossiana) freija* (Thunberg) — Freija Fritillary

Distribution. Holarctic and found over all of the areas surveyed in Alaska.

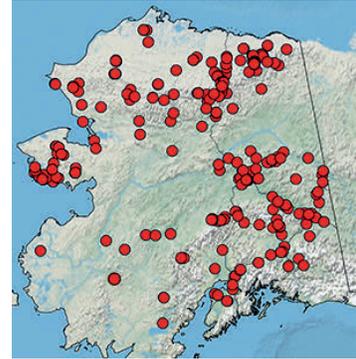
Habitat. Open areas in tundra and taiga at elevations to 3900 feet. Often associated with boggy and moist areas.

Biology. Hibernation as larva. Both *Vaccinium* sp. and *Arctostaphylos uva-ursi* (L.) Spreng. have been reported. Flies annually.

Flight period. Early June and perhaps late May with stragglers into early July; an early species.

Diagnostic characters. Expanse: 33 mm. Sexes similar with females of slightly duller aspect. The elongated pale (often silvery-white) spot in the middle of the VHW median band distinguishes this species.

Field notes. A fairly common butterfly once located. They fly usually fairly close to the ground. Flight is moderately rapid, but with stops at flowers and on the substrate to bask dorsally.



Male V



Male D



Female V



Female D



Species 46 *Boloria (Clossiana) natazhati* (Gibson) — Cryptic Fritillary

Distribution. Known in Alaska only from a ridge above Slana. It was described from “141st meridian, north of Mount Natazhata, international boundary survey, elevation 8,600 feet” [southern Yukon Territory], and is known in the high arctic from Victoria Is., Bernard Harbour, and Coppermine in the Northwest Territories, as well as one site in northern British Columbia.

Habitat. Dry scree slopes, ridges and rock slides, similar to *B. astarte*.

Biology. Hibernation as larva. Larval host unknown but one of the prostrate willows suspected.

Flight period. Mid-June into July.

Diagnostic characters. Expanse: 38 mm. Sexes slightly dimorphic with darker and duskiest females. *B. natazhati* slightly resembles *B. freija*, but is much larger and darker with the underside markings less well defined, with an “oily” aspect. The characteristic pale elongated spot found on the VHW of *freija* is smaller, much darker, and more turned down in *natazhati*.

Field notes. Reported to fly rapidly low to the ground.



Male V



Male D



Female V



Female D

Species 47 *Boloria (Clossiana) chariclea butleri* (W. H. Edwards) — Butler's Fritillary

Distribution. Holarctic, and from Alaska across Canada to Labrador, as several subspecies.

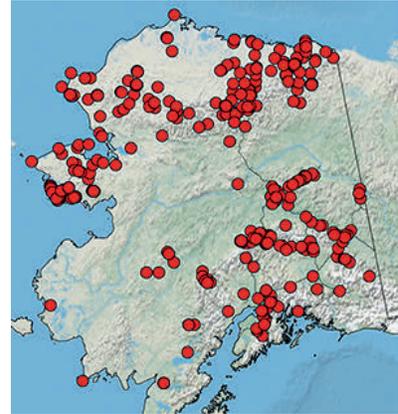
Habitat. It can be found in boreal woodlands, open areas in taiga, tundra, to rocky ridges at elevations from several hundred feet (Fairbanks area and Seward Peninsula) to 3800 feet.

Biology. Hibernation as larva with a development period of two years. Various larval hosts are reported including *Salix* sp. and *Polygonum* sp.

Flight period. From early June with worn stragglers to mid-July at some higher elevations. Flies annually on the North Slope and Seward Peninsula, generally biennial on odd-numbered years in interior Alaska.

Diagnostic characters. Expanse: 38 mm. Sexually slightly dimorphic with females darker. The VHW appears rather dull (subdued colors) with a broken median spot band. At the upper margin of this band is a roughly triangular pale spot and another narrower and elongate roughly triangular spot pointing distally. Individuals of both sexes are often *very dark or melanic in aspect*.

Field notes. In Alaska, this is a very wary butterfly with rapid, erratic and nervous flight, stopping only momentarily at flowers. Seen only as single individuals and not in groups. A somewhat similar butterfly is described on the next page.



Male V



Male D



Female V



Female D



Species 48 *Boloria* species near *chariclea*

Distribution. Eastern Alaska south of the Brooks Range, and into adjacent Yukon Territory.

Habitat. Open areas at relatively low elevation in boreal forest, especially along trails and near bogs.

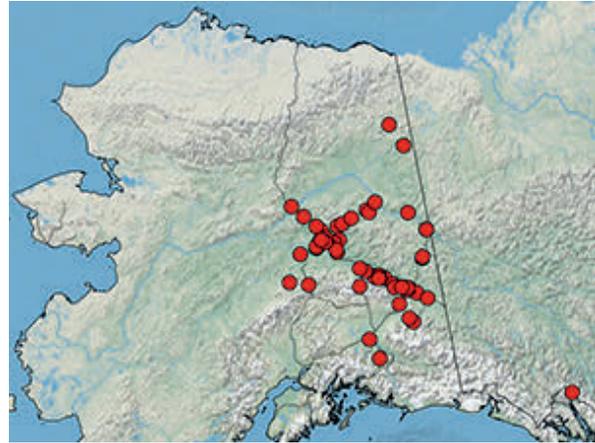
Biology. Hibernation as larva. Because of the confusion regarding species separation, host plant use is uncertain.

Flight period. Begins in the latter part of June and peaks in mid-July, then numbers begin to decline. *Flies annually.*

Diagnostic characters. Expanse: 38 mm. Very slight sexual dimorphism; black markings dorsally on females more pronounced. Overall these butterflies appear bright. The VHW markings are similar to *chariclea*, but much brighter and lack the dull aspect of the latter. The pale whitish areas glisten and in fresh individuals there is a purple sheen. This butterfly *does not exhibit the dark or melanistic individuals frequently observed in B. chariclea.*

Field notes. This butterfly is not in the least wary and exhibits rather relaxed flight, and avidly seeks flowers. It is very gregarious, as shown in the accompanying photographs, with multiple individuals on single flower stalks. Philip and Ferris studied behavior at two areas near Fairbanks: Goldstream Bog (ca. 600') and the bog area in Bonanza Creek Experimental Forest (ca. 440'), as well as along Nabesna Road. *B. chariclea* occurs in these sites during odd-numbered years, but only a few worn individuals remain as the first individuals of the unnamed appear on the wing.

Taxonomic note. In the first edition of this book, this butterfly was incorrectly listed as *Boloria grandis*, because the name *grandis* currently applies to a subspecies of *B. chariclea* from eastern Canada. Several complex taxonomic issues need to be resolved before the name of this butterfly, if one currently exists, can be determined.



Male V



Male D



Female V



Female D



Boloria (Clossiana) species nr. chariclea

Species 49 *Speyeria zerene sitka* Hammond, Harry & McCorkle — Sitka Fritillary

Distribution. Known to date only from the Haines area.

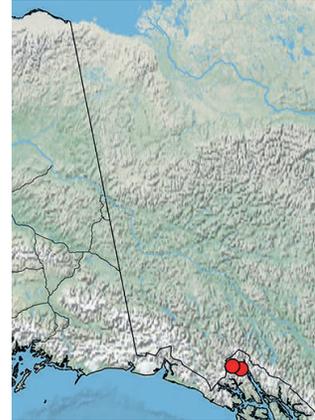
Habitat. Trails in boreal forest.

Biology. Hibernation as larva. Larval host *Viola* sp.

Flight period. Latter half of July.

Diagnostic characters. Expanse: 55 mm. In Alaska the only similar species is *Speyeria* “*atlantis*” (Species 50), which has not been recorded in the Haines region. In *sitka*, the FW outer margin is straight, while in “*atlantis*” it is slightly convex. In general, the markings in *sitka* are darker and the colors more intense as compared to “*atlantis*.”

Field notes. A nervous and wary species with rapid and erratic flight several feet above ground. Males will stop at mud, and both sexes visit flowers. It is also a secretive species and apparently spends most of its day in deep woods, only to appear suddenly as if from nowhere at the woodland edge.



Male V



Male D



Female V



Female D



Species 50 *Speyeria atlantis* complex — Atlantis Fritillary Complex

Taxonomic note. At the present time, the species assignment for the butterflies of this complex that fly in Alaska is unresolved. In the past, *Speyeria atlantis* has been treated as a “superspecies” with numerous subspecies. Subsequent analyses by various individuals divided the superspecies into two species groups, *S. atlantis* and *S. hesperis*, both with multiple associated subspecies. It’s unclear to which group Alaskan butterflies belong, or if they represent an undescribed third species.

Distribution. Fairbanks region then in a few isolated colonies southeastward along the Alaska Hwy.

Habitat. Fields, clearings, power line cuts, and trails in boreal forest.

Biology. Hibernation as larva. Larval host *Viola* sp.

Flight period. Mid-June into early July.

Diagnostic characters. Expanse: 55 mm. Sexes similar. The accompanying photographs serve to identify this species.

Field notes. This is rather unwary species that visits flowers readily, especially dandelions that grow along forest trails.



Male V



Male D



Female V



Female D



Species 51 *Speyeria mormonia bischoffi* (W. H. Edwards) — Bischoff's Fritillary

Distribution. Southeastern Alaska in isolated colonies, Kenai Peninsula and isolated spots in interior Alaska. Widespread in western North America with multiple subspecies.

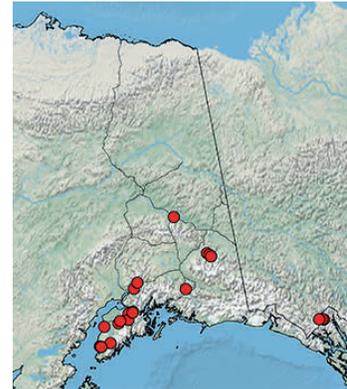
Habitat. Open areas, fields, power line cuts, trails in boreal forest.

Biology. Hibernation as larva. Larval hosts are violets (*Viola* sp.).

Flight period. Late June into early August.

Diagnostic characters. Expanse: 45 mm. Sexes similar. *S. mormonia* is slightly smaller than the other 2 Alaskan *Speyeria* species. The VHW basal and central area has a distinctive green hue and the shiny silvery spots are sometimes opaque.

Field notes. Flight is gliding and fluttering fairly close to the ground with frequent visits to flowers.



Male V



Male D



Female V



Female D



Species 52 *Aglais milberti* (Godart) —Milbert's Tortoise Shell

Distribution. Scattered locales in eastern Alaska, more concentrated along the southern coast. Widespread in North America.

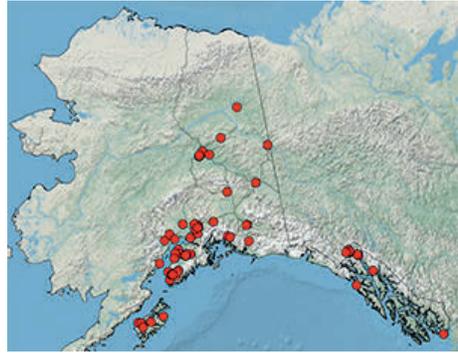
Habitat. Normally forests and woodlands where the larval host is present, but individuals can be found on windy mountain passes and ridges.

Biology. Hibernation as adult. Stinging nettles (*Urtica* sp.) are the larval host.

Flight period. Essentially the entire warm season. Adults emerge from hibernation during the early warm days in spring and then the females lay eggs. Fresh adults emerge typically in early July and fly until cold days and nights force them into hibernation. Winter is passed in crevasses and hollows in tree trunks and under eaves and elsewhere in buildings.

Diagnostic characters. Expanse: 43 mm. No similar species in Alaska and the accompanying photographs serve to identify this species; sexes similar.

Field notes. Flight is fast and erratic. Butterflies perch on branches, tree trunks, other vegetation, and sit on the ground where they dorsally bask. They also puddle.



Male V



Male D



Species 53 *Nymphalis j-album* (Boisduval & LeConte) — Compton Tortoise Shell

Distribution. Mainly Fairbanks area and slightly northeastward, Haines (late 1980s); elsewhere widely distributed across Canada and the northern U.S.

Habitat. Forests and woodlands along trails where the larval host is present.

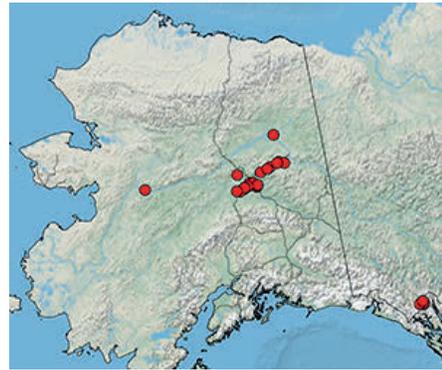
Biology. Hibernation as adult. Larval hosts include willow, birch, and aspen. This is a migratory species unknown in interior Alaska until 2001. It now appears to be well established in the Fairbanks area, where it has appeared annually since.

Flight period. Most of the warm season. Adults emerge from hibernation during the early warm days in spring and then the females lay eggs. Fresh adults emerge typically in early August and fly for a short time period before hibernating. Winter is passed in crevasses and hollows in tree trunks and under eaves and elsewhere in buildings.

Diagnostic characters. Expanse: 61 mm. No similar species in Alaska and the accompanying photographs serve to identify this species; sexes similar.

Field notes. Flight is fast and erratic. Butterflies perch on branches, tree trunks, and other vegetation.

Note. In some field guides and checklists, this species is referred to as *Nymphalis vau-album* (D. & S.), *N. vaualbum*, *N. l-album* (Esper), and *Roddia vaualbum*. *Roddia* is a subgeneric name. Specialists in Europe have first concluded that the name *vaualbum* was improperly described and under the rules of zoological nomenclature with *l-album* Esper as the next available name, and secondly based on molecular analysis that two species are involved. *N. l-album* applies to Old World butterflies, and *N. j-album* applies in North America.



Male V



Male D



Species 54 *Nymphalis antiopa* (Linnaeus) —Mourning Cloak

Distribution. Holarctic. In Alaska, mainly eastern, north and south of the Brooks Range. This species is probably more widely distributed in the state, especially in the extreme southeast, than records indicate.

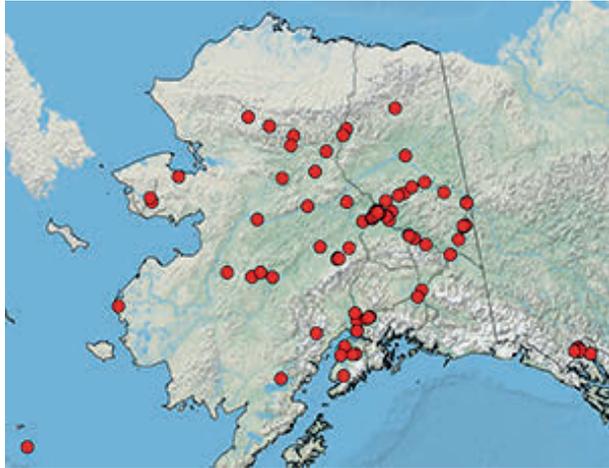
Habitat. Mainly forests and woodlands along trails where the larval host is present south of the Brooks Range. On the North Slope it can be found in moist tundra areas where willows abound.

Biology. Hibernation as adult. Willows are the known hosts in Alaska, but additional trees are used elsewhere over the Mourning Cloak's range. It was photographed on Saint George Island in 2014.

Flight period. Similar to *Nymphalis j-album*.

Diagnostic characters. Expanse: 60 mm. No similar species in Alaska and the accompanying photographs serve to identify this species; sexes similar. Individuals from the North Slope tend to have paler wing borders than more southern butterflies, and were described as subspecies *hyperborea* (Seitz). Several additional subspecies of dubious merit have also been described.

Field notes. Flight is typically gliding with intermittent flapping. The adults dorsally bask, perching on branch ends and sitting on the ground. They puddle, and come to broken or bruised branches to feed on sap.



Male V



Male D



Species 55 *Polygonia satyrus* (W. H. Edwards) — Satyr Comma

Distribution. In Alaska currently known from the southeast, but widely distributed elsewhere in North America.

Habitat. Boreal forest where it flies in openings.

Biology. Hibernation as adult. Stinging nettle has been recorded as a larval host.

Flight period. Similar to *Nymphalis j-album*.

Diagnostic characters. Expanse: 46 mm. The sexes are dimorphic, especially ventrally, with prominent striations in the male and in the females a relatively unmarked outer half on both wings. The silver comma mark (characteristic of *Polygonia* – hence the common name) is prominent. *P. satyrus* might be confused with *P. gracilis*. The upper side of *satyrus* is brighter with larger dark markings compared to *gracilis*. Ventrally the latter species does not have a mottled/striated form; the outer halves of the wings are much paler than in *satyrus*, being mottled brownish-gray to pale gray.

Field notes. Flight is fast and erratic. The butterflies perch on tree trunks and branches, where they fold their wings tightly and mimic dead leaves. They also sit on the ground and puddle.



Male V



Male D



Female V



Female D



Species 56 *Polygonia gracilis* (Grote & Robinson) — **Hoary Comma**

Distribution. Mainly central and southeast Alaska. Elsewhere widely distributed in Canada and some northern states in the lower U.S.

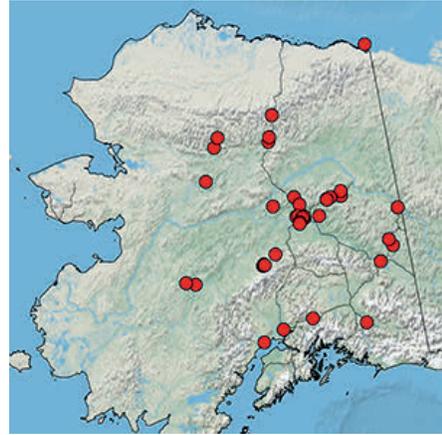
Habitat. Boreal forest where it flies in openings.

Biology. Hibernation as adult. Larval hosts are *Ribes* sp., currants.

Flight period. Similar to *Nymphalis j-album*.

Diagnostic characters. Expanse: 43 mm. Sexes similar. Most easily separated from the other two Alaskan *Polygonias* by the ventral wide pale gray or grayish-brown wing borders.

Field notes. Flight is fast and erratic. The butterflies perch on tree trunks and branches, where they fold their wings tightly and mimic dead leaves. They also sit on the ground and puddle.



Male V



Male D



Species 57 *Polygonia faunus arcticus* Leussler — Arctic Anglewing

Distribution. Mainly east-central Alaska; elsewhere additional subspecies widely distributed across parts of Canada and the northern U.S.

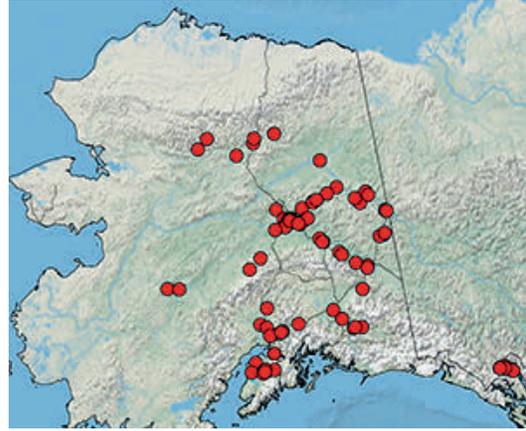
Habitat. Boreal forest where it flies in openings.

Biology. Hibernation as adult. A wide variety of larval hosts have been reported including alder, willow and blueberry, and various shrubby plants.

Flight period. Similar to *Nymphalis j-album*.

Diagnostic characters. Expanse: 40 mm. The dark color of the undersides and very ragged-looking wing margins distinguish this species. Fresh individuals show some mossy green markings in the ventral marbled pattern.

Field notes. Flight is fast and erratic. The butterflies perch on tree trunks and branches, where they fold their wings tightly and mimic dead leaves. They also sit on the ground and puddle.



Male V



Male D



Species 58 *Euphydryas anicia helvia* (Scudder) — Helvia Checkerspot

Distribution. Currently known from Rampart and one additional site. Other subspecies elsewhere in North America.

Habitat. Gravelly slopes and clearing where the larval hosts grow.

Biology. Hibernation as larva. Based on subspecies elsewhere, most probably Figwort family, and either paintbrushes (*Castilleja* sp.) or penstemons (*Penstemon* sp.).

Flight period. July.

Diagnostic characters. Expanse: 40 mm. Sexes similar, but females larger. There is no similar butterfly in Alaska.

Field notes. Flight is rapid and close to the ground. The butterflies dorsally bask on flowers and the ground surface.



Male V



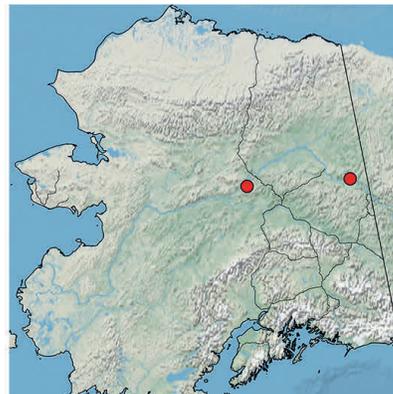
Male D



Female V



Female D



Species 59 *Phyciodes pratensis* (Behr) — Field Crescent

Distribution. Eastern Alaska; parts of western Canada and western U.S.

Habitat. Open fields and forest clearings, roadsides.

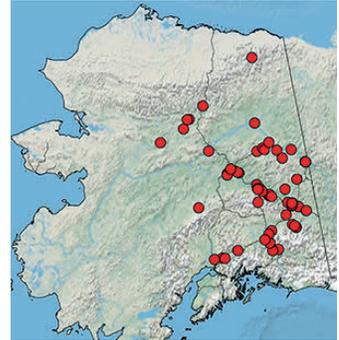
Biology. Hibernation as larva. Asters are the larval hosts.

Flight period. June and July.

Diagnostic characters. Expanse: 30 mm. Sexes similar, but females larger and brighter.

Field notes. Often a common species. Flight is generally slow, gliding at times, and fluttering close to the ground. Flowers are visited regularly and males puddle.

Taxonomic note. *Phyciodes pratensis* has also been called *P. pulchella* (Boisduval) by some authors (sometimes written as *pulchellus*). The uncertainty in nomenclature relates to the interpretation of the original illustrations related to these names, and whether or not the specimens illustrated are the actual type specimens for the associated names. The final resolution to this issue will most probably require a petition to the International Commission on Zoological Nomenclature (I.C.Z.N.) for a ruling.



Male V



Male D



Female V



Female D



Species 60 *Coenonympha tullia kodiak* W. H. Edwards — Kodiak Ringlet

Distribution. Over much of Alaska; SW quadrant has not been sampled. *C. tullia* occurs in northern Europe and Asia, and is widespread in North America with many designated subspecies.

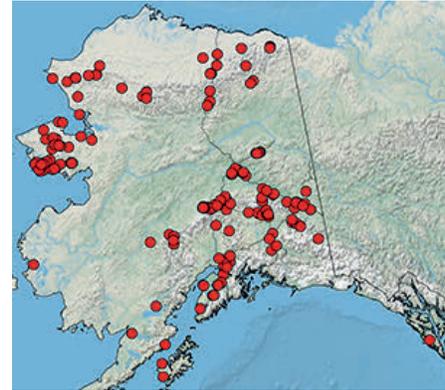
Habitat. Meadows, bogs, wet tundra, forest clearings, power line cuts.

Biology. Hibernation as larva. Larval hosts are various grasses.

Flight period. Last half of June through July, depending upon locality.

Diagnostic characters. Expanse: 33 mm. No similar species. Sexes are similar, but females usually larger and slightly paler. Most Alaskan individuals are placed as ssp. *kodiak* (originally described from Kodiak Is.), but close to the Yukon border a more tawny form occurs that is perhaps referable to ssp. *yukonensis* W. Holland.

Field notes. Generally a weak flier a foot or so above the vegetation, and often found perching in tall grass or sedges.



Male V



Male D



Female V



Female D



Female V, D

Species 61 *Erebia rossii* (J. Curtis) — Ross's Alpine

Distribution. Northern half of Alaska in regions surveyed, and in northern Canada to Hudson Bay area and Baffin Is.

Habitat. Bogs and wet tundra that support sedges.

Biology. Hibernation as larva. Several sedge species (*Carex* sp.) are reported to be larval hosts.

Flight period. Late May well into July.

Diagnostic characters. Expanse: 38 mm. Slight sexual dimorphism. On the FW, the pair (sometimes only one) of joined ocelli separate *rossii* from other Alaskan *Erebia*. One or more additional small orange spots may appear below this pair. Maculation is rather variable. Several subspecies of questionable validity have been described.

Field notes. *E. rossii* is a fairly common species. It flies low over the ground and is frequently found sitting on patches of gravel.



Male V



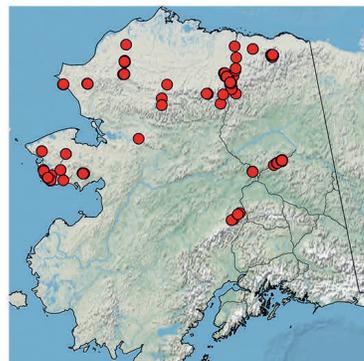
Male D



Female V



Female D



Species 62 *Erebia disa steckeri* W. Holland — **Disa Alpine**

Distribution. In Alaska, mainly on the North Slope and Seward Peninsula, but on tundra at high elevations in the Interior. The range globally is from Scandinavia across northern Eurasia and much of northern Canada. The species was first described from Lapland, Finland.

Habitat. Boggy areas in tundra.

Biology. Unknown despite its wide geographic distribution. Hibernation certainly as larva and grasses/sedges the presumed larval host.

Flight period. Late May into July, depending upon locality.

Diagnostic characters. Expanse: 40 mm. Slightly sexually dimorphic. *E. disa* and *E. mancinus* are very similar in appearance, but occupy different ecological niches; *disa* is a tundra species, while *mancinus* flies in the taiga. The FW spot band (connected ocelli) in *disa* tends to have irregular margins because the individual ocelli are slightly displaced from one another, while in *mancinus* the band margins are more even. The ventral maculation in *disa* tends to be brighter and more contrasted than in *mancinus*. Alaskan *disa* are best referred to subspecies *steckeri*.

Field notes. A common species, but colonies can be rather localized. Flight is generally fairly close to the ground and the butterflies perch on gravel and rocks.



Male V



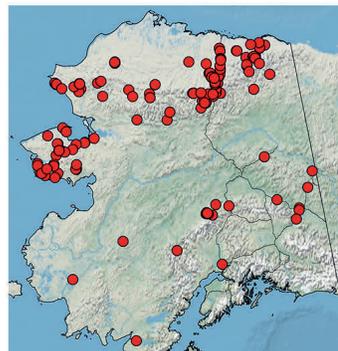
Male D



Female V



Female D



Species 63 *Erebia mancinus* E. Doubleday — Taiga Alpine

Distribution. Central eastern Alaska at low elevation, and across subarctic Canada into Minnesota.

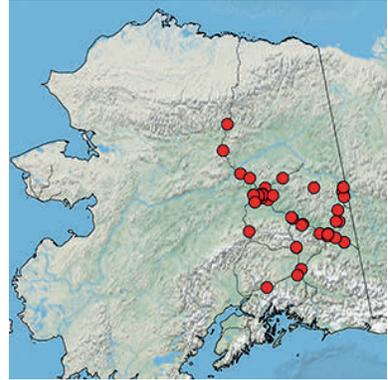
Habitat. Boggy areas in taiga.

Biology. Unknown, but larval hosts presumed to be grasses/sedges with hibernation as larva.

Flight period. Late May through July (more common in interior Alaska in odd-numbered years).

Diagnostic characters. Expanse: 39 mm. Moderate sexual dimorphism: females brighter and with more red-orange flush. See *E. disa*. Additionally, *E. mancinus* usually has orange flush over the central region of the FW, more pronounced in the females than the males.

Field notes. Colonies of *E. mancinus* are generally rather local. The butterflies fly over the vegetation and in and out of the shrubby spots where willows and tamarack grow.



Male V



Male D



Female V



Female D



Male



Female

Species 64 *Erebia mackinleyensis* Gunder — **Mt. McKinley Alpine**

Distribution. Habitat-specific in Alaska and western Yukon Territory.

Habitat. High-elevation ridges, scree slopes and rock slides.

Biology. Hibernation as larva. Larval hosts are grasses and possibly sedges.

Flight period. Mid-June into early July.

Diagnostic characters. Expanse: 47 mm. Slight sexual dimorphism; rusty patch larger in females. Uniform dark brown with a FW dull rusty patch; a post-media diffuse band in males, broader wing coverage in females. Ventral HW usually unmarked, but may have weak patterning. *E. discoidalis* is somewhat similar, but a larger portion of the FW displays a brighter rusty color and the VHW has pronounced post-median grayish mottling.

Field notes. These butterflies have strong and rapid flight, often soaring on the wind well above rock slides, which they patrol from top to bottom. Occasionally on warm, but overcast, days they can be found congregating in numbers sitting on wet gravel patches.



Male V



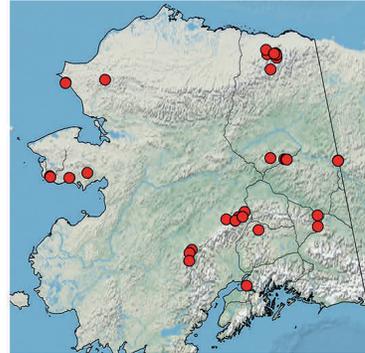
Male D



Female V



Female D



Species 65 *Erebia fasciata* Butler — Banded Alpine

Distribution. Isolated locations in Alaska on the North Slope and Seward Peninsula, and at high elevation in the Interior. Elsewhere Siberia and at scattered localities in western Canada.

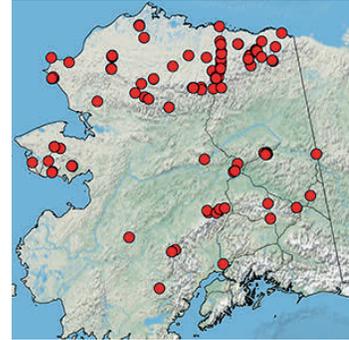
Habitat. Moist tundra at high elevation in the Interior and moist tundra elsewhere.

Biology. Hibernation as larva. Apparently a two-year life cycle. Larval host unconfirmed, but this butterfly is always associated with areas in which Cotton Grass (*Eriophorum* sp.) grows.

Flight period. Mid-May into July, depending upon locality. Flies during odd-numbered years only in the Interior; annually elsewhere.

Diagnostic characters. Expanse: 45 mm. Slight sexual dimorphism; females more flushed with rusty orange dorsally. As the name implies, this species is immediately recognized by the rusty-orange and gray band on the ventral FW and the gray band on the VHW. No other Alaskan species is similar.

Field Notes. This butterfly can be common, but always in localized colonies. The flight is rapid and typically 1-2 feet above vegetation. Males may congregate at patches of wet gravel.



Male V



Male D



Female V



Female D



Male



Female

Species 66 *Erebia epipsodea remingtoni* P. Ehrlich — Remington's Alpine

Distribution. Eastern–southeastern Alaska; also widely distributed in western Canada and the western U.S. as various subspecies.

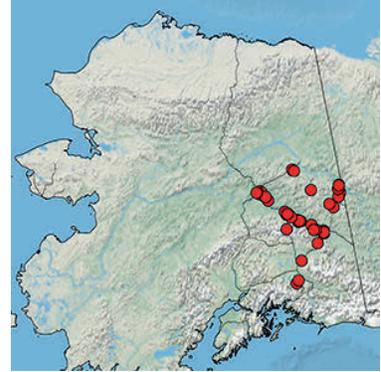
Habitat. Fields, power line cuts, river and stream banks in boreal forest. Common in spots along the Alaska and Richardson Highways.

Biology. Hibernation as larva. Various grasses are larval hosts.

Flight period. Mid-June into mid-July.

Diagnostic characters. Expanse: 39 mm. Moderate sexual dimorphism; females with larger orange spots. This species is easily recognized by the two distinct black-spotted orange bands on both wings dorsally and muted ventrally.

Field notes. Flight is rather lazy a foot or two above the ground. Flowers are visited, as well as mud. These butterflies occur in localized colonies, but can be abundant.



Male V



Male D



Female V



Female D



Species 67 *Erebia discoidalis* (W. Kirby) — Red-disked Alpine

Distribution. Mostly eastern Alaska; elsewhere in Asia and over much of Canada and in the northern U.S. very locally from Michigan to Montana.

Habitat. Usually open moist areas — in forest clearings, road and power line cuts, tundra, and tundra above tree line in sites such as Murphy Dome near Fairbanks.

Biology. Hibernation as pupa. Several species of grasses are used as larval hosts.

Flight period. Mid-May into early July.

Diagnostic characters. Expanse: 38 mm. Minimal sexual dimorphism. Identified by the large rusty red FW patches, the wide hoary gray border on the VHW and diffuse gray patch at the apex of the ventral FW.

Field Notes. A weak flier generally fairly close to the ground.



Male V



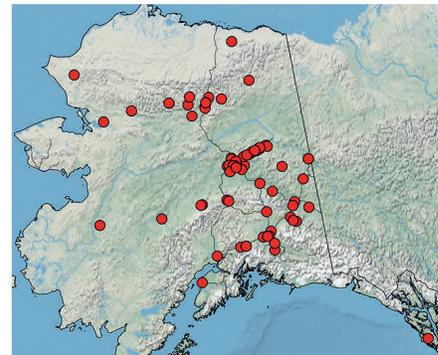
Male D



Female V



Female D



Species 68 *Erebia pawloskii alaskensis* (W. Holland) — Holland's Alpine

Distribution. Widely distributed in Alaska (SW quadrant not surveyed); also as other subspecies in Siberia, parts of western Canada, and as far south in the Rocky Mountains as Wyoming and Colorado.

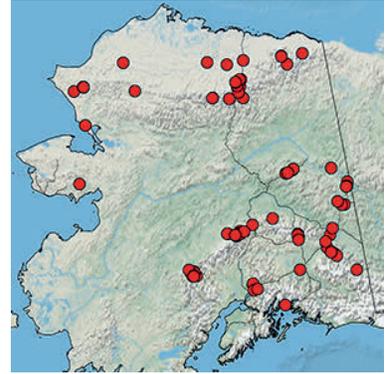
Habitat. This species flies over a wide range of elevation to above tree line in Alaska. It is associated with fairly lush open areas that support willows and tall grass.

Biology. Hibernation as pupa; a two-year life cycle. Grasses are the probable larval hosts.

Flight period. Mid-June to past mid-July.

Diagnostic characters. Expanse: 33 mm. *E. pawloskii* is one of four small *Erebias* that occur in Alaska and are now presented in sequence. It is easily recognized by FW and HW broken orange spot bands. Ventrally the band on the FW is pale orange-to-whitish; on the HW the spots are off-white and may be tinged with orange. The species was formerly known as *E. theano* in North America, which is now one of the subspecies of *E. pawloskii*.

Field notes. This butterfly occurs in highly localized colonies. The butterflies are mostly sedentary, perching on grass stems. Flight is weak and low to the ground.



Male V



Male D



Female V



Female D



Male



Female

Species 69 *Erebia youngi* W. Holland — Young's Alpine

Distribution. Widespread in Alaska, but localized, and in extreme western Canada.

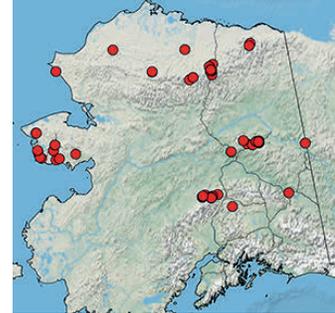
Habitat. Dry tundra, ridges, scree slopes and fell fields; above tree line south of the Brooks Range.

Biology. Hibernation as larva. Grasses presumed to be larval hosts.

Flight period. First week of June into early July.

Diagnostic characters. Expanse: 39 mm. Positive separation of *E. youngi* and *E. lafontainei* is by examination of the male genitalia. In the field habitat is a good indicator. *E. youngi* inhabits dry areas as noted above, while *E. lafontainei* normally flies in boggy tundra where willows are present. Generally the underside of *youngi* is brownish-tan in contrast to dark maroon-brown in *lafontainei*. Worn specimens are difficult to separate visually. The DFW orange spots in *lafontainei* are normally well developed, while in some *youngi* they may be nearly obsolete.

Field notes. Flight is rapid and usually close to the ground. These butterflies often perch on gravel and rocks and take off in frantic flight when disturbed.



Male V



Male D



Male V



Male D



Female V



Female D

Species 70 *Erebia lafontainei* Troubridge & Philip — Lafontaine's Alpine

Distribution. Uncommon south of the Brooks Range, but with records for Eagle Summit and Denali N.P., and locally distributed on the North Slope. Also in the Yukon and Northwest Territories.

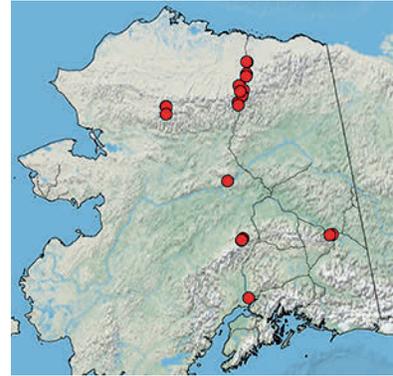
Habitat. Boggy and moist tundra where willows are present.

Biology. Early stages unknown; hibernation presumed as larva with grasses or sedges as larval hosts.

Flight period. Mid-June into early July.

Diagnostic characters. Expanse: 39 mm. Sexes similar. See the entry for *Erebia youngi*.

Field notes. Colonies are quite local. Flight is close to the tops of vegetation over shrub willows and grasses.



Male V



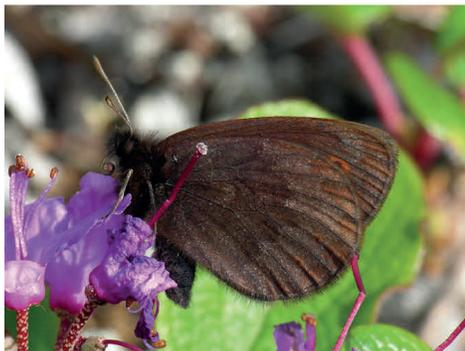
Male D



Female V



Female D



Species 71 *Erebia occulta* Roos & Kimmich — Eskimo Alpine

Distribution. In Alaska, mostly north of the Brooks Range and common on the Seward Peninsula; above tree line scree slopes in the Interior. It also occurs in Siberia and in the mountains along the Dempster Hwy. in the Yukon Territory.

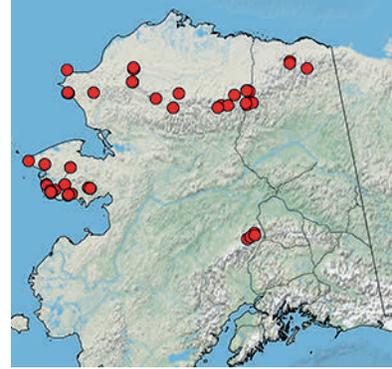
Habitat. Scree slopes and their edges.

Biology. Early stages unknown; hibernation presumed as larva with grasses as larval hosts.

Flight period. Second week in June until mid-July.

Diagnostic characters. Expanse: 39 mm. *E. occulta* is easily separated from *E. youngi* and *E. lafontainei* by the presence of three small and distinct submarginal dots on the HW, both dorsally and ventrally. Neither of the other two species has this spot arrangement both dorsally and ventrally. In many individuals the DFW spots may be much reduced in size to nearly obsolete. In some individuals, especially from the Seward Peninsula, all of the spots may exhibit a brassy color rather than orange. Sexes similar. Some North American field guides have erroneously cited this species as the very similar *E. anyuica* Kurentzov. Both *E. anyuica* and *occulta* occur in Siberia, but to date only *occulta* is known from North America.

Field notes. This butterfly is often abundant on scree slopes, but colonies are very local. Males dorsally bask and are easily seen against the pale scree substrate. These butterflies are wary and when disturbed fly rapidly close to the ground.



Male V



Male D



Female V



Female D



Species 72 *Oeneis philipi* Troubridge — Philip's Arctic

Distribution. In bogs in the general vicinity of Fairbanks and at isolated locations along the Dalton Hwy. from Coldfoot northward; elsewhere: Yukon and Northwest Territories, and British Columbia in isolated colonies.

Habitat. Spruce bogs.

Biology. Hibernation as larva. One record of Cotton Grass (*Eriophorum* sp.) as a larval host.

Flight period. Early June into early July. Odd-numbered years only.

Diagnostic characters. Expanse: 47 mm. Slight sexual dimorphism; females paler and small colored spots more prominent. This species looks very similar to *O. polixenes*. Habitat generally separates the two, since *O. polixenes* typically flies in dry grassy tundra. In general, *philipi* is darker in color than *polixenes* and many individuals have a narrow submarginal band of small orange-yellow spots on both wings. Positive separation is by examination of the male genitalia. *E. philipi* has been incorrectly listed as *E. rosovi* Kurentsov in some publications.

Field notes. This is a very local species, but a colony, once located, may contain numerous individuals. Flight is rapid and often in the wettest part of boggy areas.



Male V



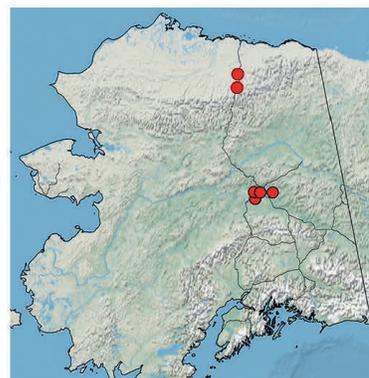
Male D



Female V



Female D



Species 73 *Oeneis polixenes* (Fabricius) — Polixenes Arctic

Distribution. In scattered localities over much of the state. Above tree line south of the Brooks Range. It also occurs across the northern portion of Canada, and southward along the Rocky Mountains from British Columbia to Colorado. An isolated population is on Mt. Katahdin in Maine.

Habitat. Typically dry grassy tundra, although individuals can be found on scree slopes and ridge tops.

Biology. Hibernation as larva. Both grass and sedge species have been observed as larval hosts.

Flight period. End of May to mid-July.

Diagnostic characters. Expanse: 42 mm. Females larger and brighter than males. Generally a warmer brown than the previous species, and frequently bright orange-brown, especially the females. The wing membranes are thin and the butterflies look rather translucent. The HW has a submarginal band of small orange-yellow spots. See description of *O. philipi* for comparison. Several geographic subspecies have been described. Most of the Alaskan *polixenes* are referable to ssp. *beringianus* Kurentsov; those from the arctic coastal areas are *woodi* Troubridge & Parshall, which is grayer in color.

Field notes. This species can be locally very common. Individuals sit on the ground in both gravel and vegetation. When startled they have a rapid and determined flight. On ridges, multiple males can often be observed chasing one another.



Male V



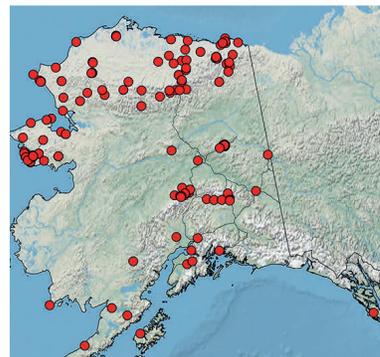
Male D



Female V



Female D



Species 74. *Oeneis jutta alaskensis* W. Holland. — Alaskan Jutta Arctic

Distribution. Holarctic. In North America, eastern Alaska primarily; across Canada and elsewhere in the U.S. in New England, the northern Great Lakes states, and in the Rocky Mountains to Colorado.

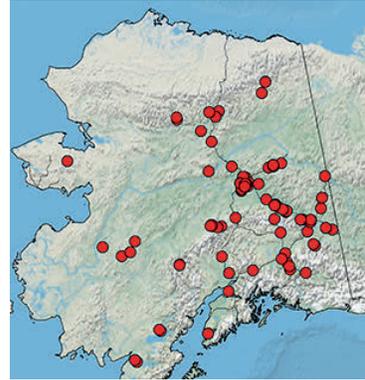
Habitat. Tamarack bogs.

Biology. Hibernation as larva. Larval hosts are sedges, including Cotton Grass (*Eriophorum* sp.). Life cycle is two years.

Flight period. Biennial. Mid-June to mid-July on odd-numbered years.

Diagnostic characters. Expanse: 45 mm. Sexually dimorphic; males with DFW diagonal dark band of specialized scales; females with larger and more prominent ocelli. Wings more angular than other Alaskan *Oeneis*. Dorsally a warm brown color; ventrally mottled pale gray and dark brown with an often poorly defined median band on the HW. FW has three black-pupiled orange spots, small in males and usually very large in females.

Field notes. The butterflies flit in and out of the tamaracks and perch on their branches and trunks as well as on the grass on the tops of tussocks. They perch with wings folded and blend in well with lichens on the tree trunks. Flight is not particularly rapid, but it is erratic. They often appear in numbers, but are localized in bogs. In areas where there are multiple small seemingly identical bogs, some bogs may support *jutta* populations, while neighboring ones do not. Several geographic subspecies have been described in North America.



Male V



Male D



Female V



Female D



Species 75 *Oeneis melissa gibsoni* W. Holland — **Gibson's Melissa Arctic**

Distribution. Interior above tree line, North Slope and Seward Peninsula in Alaska; Yukon Territory to Labrador, south in the White Mountains of New Hampshire, and southward in the Rocky Mountains from British Columbia to Colorado and extreme northern New Mexico as several subspecies.

Habitat. Primarily high windy ridges, scree slopes and adjacent vegetated areas.

Biology. Hibernation as larva. Larval hosts are sedges.

Flight period. Mid-June into mid-July; annual.

Diagnostic characters. Expanse: 42 mm. Females usually larger and darker than males. Essentially unmarked dorsally with a suggestion of some very small submarginal yellowish spots and dark scales in the wing fringes at the ends of the veins. Dorsal color varies from dark brown to nearly black in some individuals. Ventrally the HWs have a very mottled pattern with or without a distinct median band. Several geographic subspecies have been described.

Field notes. Males frequent high windy ridges, tors, and scree slopes, where they may be observed sometimes in numbers chasing one another. Flight is rapid and erratic. Females tend to roost in adjacent vegetation.



Male V



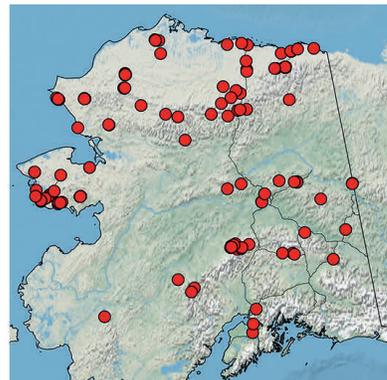
Male D



Female V



Female D



Species 76 *Oeneis alpina excubitor* Troubridge, Philip, Scott & Shepard — Sentinel Arctic

Distribution. The nominate subspecies occurs in Siberia. The subspecies *excubitor* is found in isolated pockets in Alaska on the North Slope along the Dalton Hwy., and along the Dempster Hwy. in the Yukon Territory.

Habitat. Open tundra, ridges and tors.

Biology. Unknown. Hibernation presumed as larva with grasses as larval hosts.

Flight period. Early June to mid July, depending upon locality; annual.

Diagnostic characters. Expanse: 41 mm. Sexually dimorphic. Although this species may be confused with *Oeneis bore*, it is easily identified by the two bold dark spots along the lower submargin of the DHW.

Field notes. Males may often be found at gravel patches along the highway and open gravel areas in the tundra. Females, however, are secretive and hide in the vegetation. When frightened, they erupt into rapid flight away from the disruptive source. In flight when the angle of the sun is just right, they appear bright red and can be mistaken for one of the tiger moth species. The gravel areas in the vicinity of Oil Spill Hill on the Dalton Hwy. are favored spots for this species to congregate.



Male V



Male D



Female D



Female D



Female V



Species 77 *Oeneis bore* (Esper) — Arctic Grayling

Distribution. Widely distributed in Alaska in regions surveyed. Elsewhere: Lappland, northern Russia, and in scattered localities across Canada, and south in the Rocky Mountains from British Columbia to Colorado.

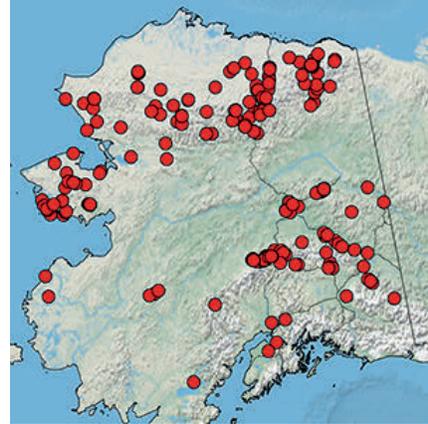
Habitat. Most ecological zones in Alaska including bogs in the Interior.

Biology. Hibernation as larva. Larval hosts are sedges.

Flight period. Mid-June into mid-July; annual.

Diagnostic characters. Expanse: 43 mm. Sexually dimorphic. Females larger and paler than the males, with two female color forms as shown in the accompanying photos. Male dorsal color varies from medium gray to dark gray brown. Some females are bright orange brown. Ventrally there is a well developed brown median band on the HW with the veins outlined in very pale gray or white. The appearance of these butterflies is highly variable and several geographic subspecies of questionable validity have been described.

Field notes. This is a very common species in Alaska. These butterflies may be found in numbers in most areas. Males congregate on gravel patches and chase one another on high windy ridges. Females are more sedentary and remain in grassy areas.



Male V



Male D



Female V



Female D



Male V



Male D



Female V



Female D



Female V



Female D



Species 78 *Oeneis chryxus* (Doubleday & Hewitson) — Chryxus Arctic

Distribution. In Alaska this species has so far been found in only two locations along the Yukon River: km 9.5 (mi. 5.9) at Eagle; km 60 (mi. 37) at Kathul Mtn. It occurs over much of Canada, the northern Great Lakes states, and in the Rocky mountains southward from British Columbia to New Mexico.

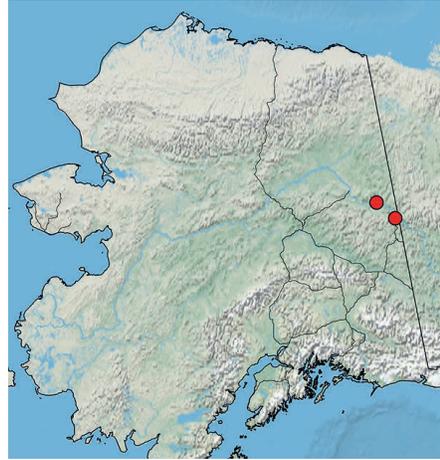
Habitat. Open grassy areas in boreal forest.

Biology. Hibernation as larva with two-year life cycle in Alaska. Larval hosts are grasses.

Flight period. Early July in Alaska; odd-numbered years only.

Diagnostic characters. Expanse: 46 mm. Some sexual dimorphism: females larger and brighter/paler than males. Both sexes have a diffuse submarginal orange-brown band (paler ventrally) with one to three FW pronounced and separated black spots. This band is penetrated along its inner margin by a narrow horizontal “V” below the top-most black spot. Several subspecies have been described in North America.

Field notes. These butterflies tend to be rather sedentary in vegetation or on open ground, and when disturbed, they usually fly close to the ground in straight line paths, circling before they alight. They laterally bask with their folded wings placed broadside to the sun.



Male V



Male D



Female V



Female D

Species 79 *Oeneis tanana* A. Warren & Nakahara — Tanana Arctic

Distribution. To date, known only from Alaska, found only along the Richardson and Alaska Highways, and just south of Tok.

Habitat. Open grassy areas in boreal forest.

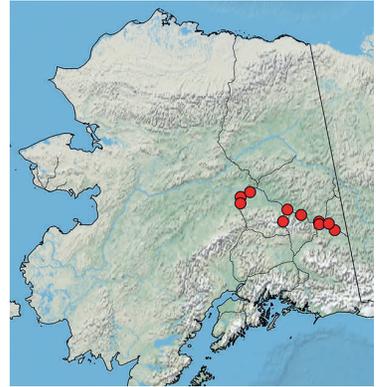
Biology. Hibernation as larva with two-year life cycle in Alaska. Larval hosts are grasses.

Flight period. Mid-June into early July. Odd-number years only.

Diagnostic characters. Expanse: 46 mm. Some sexual dimorphism: females larger and brighter/paler than males. Both sexes have a diffuse submarginal orange-brown band (paler ventrally) with two FW pronounced and separated black spots. This band is penetrated along its inner margin by a narrow horizontal “V” below the top-most black spot.

Field notes. As in the previous species, these butterflies tend to be rather sedentary in vegetation or on open ground, and when disturbed, they usually fly close to the ground in straight line paths, circling before they alight. They laterally bask with the wings placed broadside to the sun.

Taxonomic note. The original description of this species is published in: Warren, A. D. et al., 2016. *The Journal of Research on the Lepidoptera*, vol. 49:1–20.



Male V



Male D



Female V



Female D



Species 80 *Oeneis uhleri cairnesi* Gibson — Cairne's Arctic

Distribution. Although this species is known in Alaska only from the extreme NE corner, it has a wide range across Canada and the northern U.S. prairie states and then southward in the Rocky Mountains to Colorado.

Habitat. Moderately dry high-elevation tundra and hillsides that support dwarf spruce.

Biology. Hibernation as larva. Grasses are larval hosts.

Flight period. Late June into July. Occurs annually, but may have diminished numbers in even-numbered years.

Diagnostic characters. Expanse: 40 mm. Sexes are similar. There is a single small black spot in the apical area of the FWs. The brown VHW median band is narrow at each end, but expands in the middle where it protrudes outwardly.

Field notes. Very localized, but usually common when once found. The butterflies sit on the gravelly ground or vegetation on slopes and ridge tops. Flight is erratic and close to the ground.



Male V



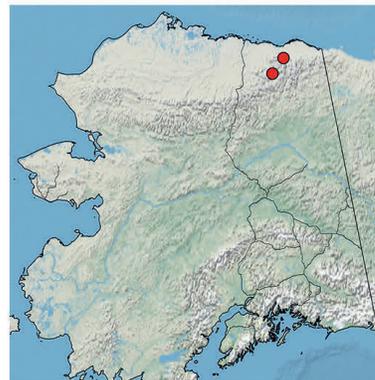
Male D



Female V



Female D



Non-resident Species

To date, five species have been collected in Alaska that are either strongly migratory species, perhaps wind-blown strays from lower latitudes, or accidentally introduced via commerce. All are illustrated, but with only minimal accompanying comments and without maps.

Species 81 *Pieris rapae* (Linnaeus) — Cabbage Butterfly

This species, an agricultural pest, is found all across Canada and the U.S. south of the Canadian border. It was introduced from Europe into Quebec in the 1860s. The one Alaska record is from Mt. Dewey in Wrangell on 12 August, 1923, most probably introduced in a shipment of fresh cabbages or broccoli. If accidentally introduced again with gravid females, it has the potential to become a permanent resident in the state in areas where cabbages and broccoli are cultivated. The voucher specimen is in the entomology collection at the Los Angeles County Museum of Natural History, Los Angeles, California.



Male D



Female D



Species 82 *Echinargus isola* (Reakirt) — Reakirt's Blue

This little butterfly is a migratory species that normally lives in Mexico and the southwestern U.S. to Utah and Colorado, but occasionally penetrates into southern Canada. One individual was found in Wiseman on 22 June, 1971, and probably introduced in an aircraft.



Male V



Male D



Female D

Species 83 *Danaus plexippus* (Linnaeus) — Monarch

The Monarch is a well known migratory species that ranges as far north as Southern British Columbia in the West. It reaches southern Canada in late May or June, and the new generation produced during the summer migrates back to Mexico in late summer for winter hibernation. Wings of one individual were found in 2007 in a cabin window in Hyder. Either the butterfly was blown well off course from southern British Columbia, or it was transported in a vehicle.



Male D



Male V, Female D

Species 84 *Vanessa cardui* (Linnaeus) — Painted Lady

This is a well known strongly migratory species. The migration begins in Mexico in early spring and reaches northern Canada as early as late June. The butterflies do not overwinter in Canada. Alaska records include Skagway (24 June, 1992), Ketchikan (5 July to 1 August, 1973). Ferris also saw a very fresh specimen on Ester Dome near Fairbanks (date not recorded), probably a school-raised individual that was released. The species is popular for rearing in school biology classes.



V, D

Species 85 *Vanessa atalanta* (Linnaeus) — Red Admiral

The Red Admiral is another strongly migratory species that begins its northward journey in early spring from Mexico. Alaska records are Auke Bay NW of Juneau (7 July, 1977), Pelican, Chicagof Is. (9 July, 1977), Bonanza Creek near Fairbanks (14 June, 2012), and Sitka (19 August, 2012).



V, D

A Final Note

Two species reported to occur in Alaska are very questionable and are considered to be invalid. *Parnassius clodius incredibilis* Bryk was described in 1932 from Mt. St. Elias, Alaska. The northern extent of the range of *Parnassius clodius* is southern British Columbia and Alberta. Mislabelled material from southern British Columbia is suspected. *Erebia inuitica* Wyatt was described in 1966 based on a single male specimen from Anaktuvuk Pass that reportedly was collected by an Eskimo boy on 28 June, 1965. Despite searching over the ensuing years, no additional individuals have been found. This species has been dropped in the most recent North American checklist.

Appendix

Recently there have been as yet unverified reports of *Colias pelidne* collected in the vicinity of the Dalton Highway. We illustrate this species in the event that the reports prove to be valid.

Colias pelidne Boisduval & Le Conte — Pelidne Sulphur

Male V



Male D



Female V



Female D

Distribution. This butterfly occurs in disjunct colonies across Canada to the Yukon Territory and ?Alaska, but is concentrated east of Hudson Bay. The specimens illustrated above are from the Olgivie Mountains, Yukon Territory, 66 degrees north latitude.

Habitat Tundra valleys in the Yukon Territory.

Biology. Early stages not described, but the larval host is *Vaccinium* species.

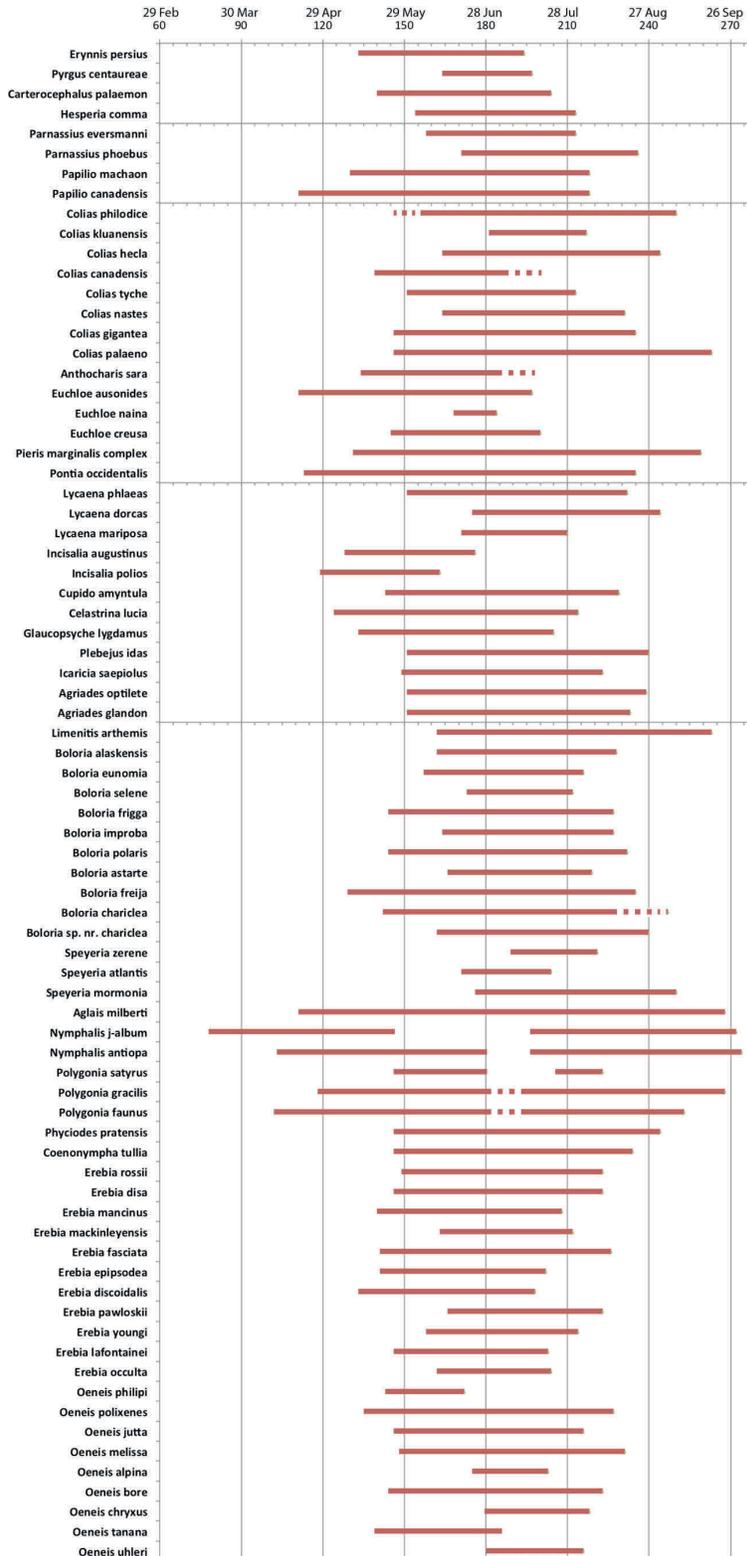
Flight period. Late June–early July.

Diagnostic characters. Expanse: 38 mm. Sexually dimorphic with yellow males and white females. This butterfly is similar to *Colias gigantea*, but smaller and with a single, small, pink-rimmed VHW discal spot. The females may be unmarked dorsally, other than the FW and HW spots, or with diffuse pale gray DFW apical markings.

Field notes. Flight is usually rapid and fairly close to the ground. Flowers are visited.

Flight Periods for Alaskan Butterflies

Only resident species with multiple collection events in Alaska are shown, with extreme records omitted. Numbers across the top of the graph correspond to consecutive days of the year.



**Checklist (and Life List) of Alaska Butterflies
Resident Species**

Hesperiidae

1. *Erynnis persius borealis* (M. Cary) — Persius Dusky Wing
2. *Pyrgus centaureae freija* (B. Warren) — Grizzled Skipper
3. *Carterocephalus palaemon skada* (W. H. Edwards) — Arctic Skipper
4. *Hesperia comma borealis* Lindsey — Common Banded Skipper

Papilionidae

5. *Parnassius evermanni thor* Hy. Edwards — Eversmann's Parnassian
6. *Parnassius phoebus apricatus* Stichel — Kodiak Parnassian
Parnassius phoebus golovinus W. Holland — Golovin Bay Parnassian
7. *Papilio machaon aliaska* Scudder — Alaskan Old World Swallowtail
8. *Papilio zelicaon* Lucas — Anise Swallowtail
9. *Papilio canadensis* Rothschild & Jordan — Canadian Tiger Swallowtail

Pieridae

10. *Colias philodice vitabunda* Hovanitz — Lively Clouded Sulphur
11. *Colias kluanensis* Ferris — Kluane Sulphur
12. *Colias hecla* Lefèbvre — Hecla Sulphur
13. *Colias canadensis* Ferris — Canadian Sulphur
14. *Colias tyche thula* Hovanitz — Thula Sulphur
15. *Colias nastes aliaska* O. Bang-Haas — Alaska Sulphur
16. *Colias gigantea* Strecker — Giant Sulphur
17. *Colias palaeno chippewa* W. H. Edwards — Palaeno Sulphur
18. *Anthocharis sara alaskensis* Gunder — Alaskan Orange Tip
19. *Euchloe ausonides ogilvia* Back — Back's Marble
20. *Euchloe naina jakutia* Back — Green Marble
21. *Euchloe creusa* (E. Doubleday) — Northern Marble
22. *Pieris marginalis* complex — Mustard White
23. *Pontia occidentalis nelsoni* (W. H. Edwards) — Nelson's White

Lycaenidae

24. *Lycaena phlaeas arethusa* (Dod) — Arethusia Copper
25. *Lycaena dorcas arcticus* (Ferris) — Arctic Copper
26. *Lycaena mariposa charlottensis* (W. Holland) — Queen Charlotte's Copper
27. *Incisalia augustinus* (Westwood) — Brown Elfin
28. *Incisalia polios* Cook & F. Watson — Hoary Elfin
29. *Cupido amyntula* (Boisduval) — Western Tailed Blue
30. *Celastrina lucia* (W. Kirby) — Azure Butterfly
31. *Glaucopsyche lygdamus couperi* Grote — Silvery Blue
32. *Plebejus idas alaskensis* F. Chermock — Alaskan Blue
33. *Icaricia saepiolus amica* (W. H. Edwards) — Kodiak Blue
34. *Agriades optilete yukona* (W. Holland) — Yukon Blue
35. *Agriades glandon megallo* McDunnough — Large-spotted Blue

Nymphalidae

36. *Limenitis arthemis rubrofasciata* (W. Barnes & McDunnough) — White Admiral
37. *Boloria alaskensis* (W. Holland) — Alaskan Fritillary
38. *Boloria (Proclossiana) eunomia denali* (Klots) — Denali Bog Fritillary
39. *Boloria (Clossiana) selene albequina* (W. Holland) — Whitehorse Fritillary
40. *Boloria (Clossiana) frigga saga* (Staudinger) — Saga Fritillary
Boloria (Clossiana) frigga gibsoni (W. Barnes & McDunnough) — Gibson's Fritillary

41. *Boloria improba* (Butler) — Dingy Arctic Fritillary
42. *Boloria (Clossiana) epithore* (W. H. Edwards) — Western Meadow Fritillary
43. *Boloria (Clossiana) polaris* (Boisduval) — Polaris Fritillary
44. *Boloria (Clossiana) astarte distincta* (Gibson) — Distinct Fritillary
Boloria (Clossiana) astarte tshukotkensis Wyatt — Tschukotka Fritillary
45. *Boloria (Clossiana) freija* (Thunberg) — Freija Fritillary
46. *Boloria (Clossiana) natazhati* (Gibson) — Cryptic Fritillary
47. *Boloria (Clossiana) chariclea butleri* (W. H. Edwards) — Butler's Fritillary
48. *Boloria (Clossiana) chariclea*
49. *Speyeria zerene sitka* Hammond, Harry & McCorkle — Sitka Fritillary
50. *Speyeria atlantis* complex — Atlantis Fritillary Complex
51. *Speyeria mormonia bischoffi* (W. H. Edwards) — Bischoff's Fritillary
52. *Aglaia milberti* (Godart) — Milbert's Tortoise Shell
53. *Nymphalis j-album* (Boisduval & LeConte) — Compton Tortoise Shell
54. *Nymphalis antiopa* (Linnaeus) — Mourning Cloak
55. *Polygonia satyrus* (W. H. Edwards) — Satyr Comma
56. *Polygonia gracilis* (Grote & Robinson) — Hoary Comma
57. *Polygonia faunus arctica* Leussler — Arctic Anglewing
58. *Euphydryas anicia helvia* (Scudder) — Helvia Checkerspot
59. *Phyciodes pratensis* (Behr) — Field Crescent
60. *Coenonympha tullia kodiak* W. H. Edwards — Kodiak Ringlet
61. *Erebia rossii* (J. Curtis) — Ross's Alpine
62. *Erebia disa steckeri* W. Holland — Disa Alpine
63. *Erebia mancinus* E. Doubleday — Taiga Alpine
64. *Erebia mackinleyensis* Gunder — Mt. McKinley Alpine
65. *Erebia fasciata* Butler — Banded Alpine
66. *Erebia epipsodea remingtoni* P. Ehrlich — Remington's Alpine
67. *Erebia discoidalis* (W. Kirby) — Red-disked Alpine
68. *Erebia pawloskii alaskensis* (W. Holland) — Holland's Alpine
69. *Erebia youngi* W. Holland — Young's Alpine
70. *Erebia lafontainei* Troubridge & Philip — Lafontaine's Alpine
71. *Erebia occulta* Roos & Kimmich — Eskimo Alpine
72. *Oeneis philipi* Troubridge — Philip's Alpine
73. *Oeneis polixenes* (Fabricius) — Polixenes Arctic
74. *Oeneis jutta alaskensis* W. Holland — Alaskan Jutta Arctic
75. *Oeneis melissa gibsoni* W. Holland — Gibson's Melissa Arctic
76. *Oeneis alpina excubitor* Troubridge, Philip, Scott & Shepard — Sentinel Arctic
77. *Oeneis bore* (Esper) — Arctic Grayling
78. *Oeneis chryxus* (E. Doubleday) — Chryxus Arctic
79. *Oeneis tanana* A. Warren & Nakahara — Tanana Arctic
80. *Oeneis uhleri cairnesi* Gibson — Cairnes' Arctic

Non-resident Species

Pieridae

81. *Pieris rapae* (Linnaeus) — Cabbage Butterfly

Lycaenidae

82. *Echinargus isola* (Reakirt) — Reakirt's Blue

Nymphalidae

83. *Danaus plexippus* (Linnaeus) — Monarch
84. *Vanessa cardui* (Linnaeus) — Painted Lady
85. *Vanessa atalanta* (Linnaeus) — Red Admiral

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