



Rare Alpine Butterflies in the Olympic Mountains

Prepared for
U.S. Forest Service and Bureau of
Land Management Interagency
Special Status / Sensitive Species
Program

Prepared by
John Fleckenstein
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BACKGROUND

This is the final report on a two year survey of rare alpine butterflies on the Olympic Peninsula. Initial target species were *Polites sonora siris* (Dogstar Skipper) and *Oeneis chryxus valerata* (Chryxus Arctic). These species are on the Interagency Special Status / Sensitive Species Program (ISSSSP) (USFS / BLM 2014) list assembled by the US Forest Service and the Bureau of Land Management. Since the contract was awarded, *Plebejus icarioides blackmorei* (Puget Blue) and *Plebejus lupini spangelatus* (Lupine Blue) were added to the ISSSSP list. They were then added to the target list for this survey.

The project was accomplished by the Natural Heritage Program, Washington Department of Natural Resources with funding provided by ISSSSP contract 11-CS-11060900-21

Names and taxonomy of these four subspecies are not entirely settled. Table 1 shows the names assigned to each of these taxa in recent years. Current taxonomic and name is discussed in each of the individual accounts.

Butterfly records have been collected in alpine areas of the Olympic Peninsula since the early 1900s. Most records previous to 1995 are represented in Hinchliff (1996). These and subsequent additions now maintained by the Washington Department of Fish and Wildlife (WDFW) (2012). Information from this WDFW database was the basis for this project. Additional records were collected from lepidopterists who have worked in the area.

Table 2 is a list of butterflies recorded in the Park and on the Forest. It includes records from WDFW (2012) and those collected during field work for this project. No species new to the Olympic Mountains were found during field work for this project. This project was designed to survey alpine habitat, so records from WDFW (2012) that were known to be from low elevation sites were excluded. This included most records from outside of the Park and Forest and records from the coastal unit of the Park. WDFW (2012) contains 1089 records that appeared to be from alpine locations. These records were grouped into locations by reviewing locational data and assigning a single site name to groups of records that appear to have come from the same location. For instance, the 13 records of *Oeneis chryxus valerata* whose locality information included "Hurricane Ridge" were grouped into a single record for Hurricane Ridge.

Field survey technique consisted of walking over the site in a route that covered the variety of habitat types and avoided hazardous areas such as steep scree and cliffs. Butterflies were identified on the wing where possible and netted where necessary. About 40 specimens were collected for verification of identification or as vouchers.

The sites that were surveyed during this project are mapped in Figure 1. Survey sites are located on Olympic National Park and Olympic National Forest. Field work in 2012 included 15 surveys on 15 sites. In 2013, nine surveys were completed at nine sites. Additional survey data collected within the last 20 years by other knowledgeable lepidopterists are also included in the following analysis.

Table 3 includes records of rare species from the project area that are less than 20 years old. Most records are from field work conducted during this project or from work done in the southeast Olympics by Bill Yake (2005). A few verified records come from other sources.

Rare species have been found at 15 sites in the last 20 years. The Puget Blue has been verified at 11 sites and one record remains to be verified. The Lupine Blue has been verified at four sites and one record

remains to be verified. The Valerata Arctic is known from five sites. The Dogstar Skipper has not been found in the last 20 years. More detail on these records is in the species accounts.

Species Accounts

***Polites sonora sonora* – Sonora skipper**

Range and taxonomy

The species is distributed from southern British Columbia and Washington to the northern Baja Peninsula and east to the edge of the Great Plains in Wyoming and Colorado. Three subspecies are recognized in Washington; *siris*, *sonora*, and *utahensis*. Individuals at low elevations in western Washington are recognized as *P.s. siris*.

Range in the Olympic Mountains

Individuals in the Olympics are listed as *P.s. siris* by Guppy and Shepard (2001) but as *P.s. sonora* by others (Hinchliff 1996, Pyle 2002, Pelham 2008, and Pelham, Nunnallee, and LaBar 2013) (Table 1). In the proposal and progress report for this project, the only individual known at the time in the Olympics, from Blue Mountain in 1988, was recorded as *Polites sonora siris*. However, according to Pelham (Jon Pelham, pers. comm. 3 May 2014) individuals found in the Olympics should probably be referred to as *P. s. sonora* (Table 1).

In addition to the record from Blue Mountain (Pyle, 2002), Pelham (Jon Pelham, pers. comm. 3 May 2014) reports specimens from near Tubal Cain in the northwest Olympics (Figure 2). He also suggests that the taxon is probably present at additional locations in the area. Vince Lucas reports failing to find it during several surveys in appropriate habitat (Vince Lucas, pers. comm. 8 May 2014).

Biology and Ecology

Polites larvae feed on grasses. *P. sonora* has been reared on *Festuca idahoensis* (Newcomer, 1966) and several introduced species. Larvae overwinter and adults emerge from late June through early August. The Blue Mountain specimen was captured on 6 August. Adults nectar on a wide range of flowers.

P. sonora appears to use a broad range of habitat. Guppy and Shepard (2001) cite dry hillsides in south-central British Columbia. Mesic to wet locations are cited by Pyle (2002), James and Nunnallee (2011), and Warren (2005). The Blue Mountain location is near the peak of the mountain (R.M. Pyle pers. comm. 2 May 2014). This location is less than 200 meters from trees. The Tubal Cain location is in a mesic meadow near or within tree line. Pelham (pers. comm. 3 May 2014) thinks habitat in the Olympics may be moist locations near tree line.

Conservation status in the Olympic Mountains

Natural Heritage / NatureServe ranks; G4, N4, S4.

ISSSP Strategic, Suspected on Olympic National Forest.

Ranks appear to fit current taxonomic understanding, but see below. Status should be changed to Documented for Olympic National Forest.

The records in the Olympics are about 35 miles from the nearest record of *P. s. siris*. The nearest known record of *P.s. sonora* is across Puget Sound in King County. Pyle (2002) and James and Nunnallee (2011) state that it is commonly found in disturbed habitat, and Pyle (2002) has found it to be a good colonist in western Washington. The records from Blue Mountain and Tubal Cain suggest that other populations

are present and may have been overlooked because they are not in the open alpine habitat that is so attractive to surveyors. Surveys specific for this species may be necessary.

P. s. sonora is known from a large area in the Cascade Mountains and a small area in the Olympic Mountains. If these groups are considered together, the taxon as a whole is not rare, declining, or threatened. The Natural Heritage / NatureServe ranks are accurate, and Strategic status should be removed from the species. On the other hand, the Olympic populations are isolated from the Cascade populations. If they are treated separately, the Olympic population would be of conservation concern. Separation would require recognition of the Olympic populations as a unique element.

***Plebejus icarioides blackmorei* – Boisduval's blue**

Range and taxonomy

The species is distributed from southern British Columbia and Saskatchewan south to northern Baja and from the Pacific Coast to the western Great Plains in the Dakotas, Nebraska, Colorado and New Mexico. The genus name has alternated between *Plebejus* and *Icaricia* (Table 1). Different authors recognize three to five subspecies in Washington.

Range in the Olympic Mountains

Pyle (2002) and Pelham, Nunnallee, and LaBar (2013) cite the Olympic populations as a potential undescribed subspecies. For the purposes of this report, Olympic populations will be described as *Plebejus icarioides blackmorei*. Historical records in the Olympics are in the north, from Mt. Townsend and the upper reaches of the Dungeness River to Hurricane Ridge (Figure 3).

Yake (2005) found them at five locations in the upper reaches of the Wynochee River and at four locations around Lake of the Angels. Fleckenstein found them near known sites in the northeast Olympics and to the west of previously known sites on Hurricane Ridge and at Mt. Appleton (Table 3, Figure 3). Identification of a specimen from Lost River Meadow has not yet been verified.

Biology and Ecology

Larvae of *P. i. blackmorei* feed on several species of *Lupinus* including *L. latifolius* and *L. arcticus*, both of which occur at high elevation in the Olympics. Larvae are tended by ants at many locations although no observations were made of this behavior during this or other projects in the Olympics. Larvae overwinter. Guppy and Shepard (2001) thought the flight period at any single site was limited to one month. Yake has an early record from the Upper Wynochee River Drainage of 16 June. The latest record from this project, at Buckhorn Peak meadows was 20 August. The flight period in the Olympics may be longer than one month, but no *P. i. blackmorei* were found later in August or in September.

This subspecies is found in alpine meadows, meadow / woodland edges, and in forest openings. Adults utilize a variety of flowers as nectar sources.

Conservation status in the Olympic Mountains

Natural Heritage / NatureServe ranks; G5T3, N1N3, S2.
ISSSP Sensitive, Documented on Olympic National Forest.
Ranks and status appear to be accurate.

Recent records of *P. i. blackmorei* are relatively widespread in the Olympics (Table 3, Figure 3). When historical records and recent records are compared, no significant range contraction is apparent. Within

the last 10 years, new locations have been found that expand the known range. In the southern Olympics, Yake (2005) recorded it in the Upper Wynochee drainage and at Lake of the Angels. In the central Olympics, it was found during this project at Buckhorn Peak and an as-yet unverified specimen was collected in Lost River meadow. Other significant blocks of habitat west of these sites may also support the taxon.

P. i. blackmorei is only found around *Lupinus* species. Lupine grows in open conditions, and while it will persist in woodland as the canopy is closing, it does not thrive there. Invasion of meadows by trees and shrubs has been documented in the Olympics (Woodward et al. 1995). Invasion may be caused in part by fire suppression and in part by climate change. Continued climate change may allow accelerating woody encroachment (Zolbrod and Peterson 1999). This may be the most significant threat to *Plebejus icarioides blackmorei*.

***Plebejus lupini spangelatus* – Spangled blue**

Range and taxonomy

The subspecies *spangelatus* is assigned by some authors to species *P. acmon* (Hinchliff 1996, Guppy and Shepard 2001, Pyle 2002). This species is distributed west of the central Great Plains, from southern Canada and south, into central Mexico. The species *P. lupini*, to which it is otherwise assigned (Pelham 2008, James and Nunnallee 2011), is more narrowly distributed, from Washington to Baja Mexico and east to Nevada. Various authors ascribe two or three subspecies to Washington. The designation *P. lupini spangelatus* is used in this report (Table 1).

Range in the Olympic Mountains

All authors agree that *P. l. spangelatus* is restricted to the Olympic Mountains. Historical records are restricted to the northeast Olympics (Hinchliff 1996, Figure 4). Twenty six records are greater than 20 years old. They are from eight sites, all in the northeast Olympics except for one record from Mt. Colonel Bob, in the southwest Olympics. This record appears in Hinchliff's written volumes (WDFW 2012), but he did not include it in his atlas (Hinchliff 1996). Location of the specimen is not known, and no further information, including a verified identification, is available (R.M. Pyle, pers. comm. 15 May 2014; Jon Pelham, pers. comm. 18 May 2014).

In 2012 and 2013, *P. l. spangelatus* individuals were recorded at four sites. All of these sites are in northeast Olympics. It was not found at any other sites. In particular, it was not found on Hurricane Ridge or west of there. It has also not been found south of Mt. Townsend, including the sites surveyed by Yake (2005) in the southwest Olympics. A possible specimen from Lost River Meadow has not yet been verified (Table 3, Figure 3).

Biology and Ecology

Pyle (2002) points out that although the species name of this taxon is *lupini* none of the subspecies feed on *Lupinus*. Larvae of *P. l. spangelatus* feed on *Eriogonum ovalifolium* (cushion buckwheat) (Pyle 2002). This is the only *Eriogonum* in the Olympic Mountains (Buckingham et al. 1995). No data are available on nectar source plants from the Olympics, but according to Pyle (2002) populations elsewhere are nectar generalists.

The known range of *Eriogonum ovalifolium* in the Olympics is small. Steve Acker (pers. comm. 8 May 2014) reports it from Elk Mountain to Buckhorn Peak, in the northeast corner of the Park and adjacent

areas of the National Forest. Records from Hurricane Ridge and Hurricane Hill are outside of the known range of the plant although the plant may be present.

Some uncertainty remains about larval behavior. Pyle (2002) records winter diapause in the second instar. Guppy and Shepard (2001) are unsure of diapause stage in British Columbia. James and Nunnallee (2011) recorded diapause in second or third instar. They also recorded one larva that overwintered twice. None of these data were collected from *P. l. spangelatus* in the Olympics, but Olympic populations may overwinter twice because of the short growing season.

Pyle (2002) states that adults do not move far from larval food plants. Expected habitat is, therefore, restricted to talus slopes and the dry meadows around them.

Pyle (2002) states that larvae are tended by ants. James and Nunnallee (2011) reported tending by ants in summer, but not in spring. This supports Peterson (1993) who found 50% to 90%, depending on host plant, of fourth instar larvae tended by ants and 10% to 40% of third instar larvae tended by ants. No first or second instar larvae were tended. No ant tending was noted during this project, and this behavior has not been recorded in the Olympics.

Pyle (2002) states that *P. l. spangelatus* is single-brooded in the Olympics. Record dates in Hinchliff range from 4 July to 29 August. Records from this project are between 16 July and 16 August. No individuals were seen during a number of surveys later in the season. The flight season is probably not much longer than one month.

Conservation status in the Olympic Mountains

Current Natural Heritage ranks; G5T1, N1, S2.

ISSSP Sensitive, Documented on Olympic National Forest.

The rank of T1 for subspecies and N1 for national rank conflict with the S2 state rank. Given the small number of locations and restricted range of the subspecies, State rank will be changed to S1.

Recent and historical records of *P. l. spangelatus* are restricted to the northeast corner of the Olympics (Figure 4). There are no recent records from Hurricane Hill or Hurricane Ridge, an area that was surveyed several times during this project. The taxon flies at the same time and in the same place as other species of blue butterflies of similar appearance, so it may be under-surveyed. It may, however, be more restricted in range than *P. i. blackmorei*. The larval food plant, *E. ovalifolium* may be more conspicuous than the butterfly, so surveyors should watch for the plant and the butterfly.

A survey of Mount Colonel Bob is important. Confirmation of the butterfly at this location would be a significant range extension. Elevation and habitat description sound adequate to support the plant and the butterfly.

Climate change may pose only a limited threat to *P. l. spangelatus*. The larval food plant, *Eriogonum ovalifolium*, grows on talus, a substrate into which woody vegetation will encroach only slowly. Adult nectar sources are also likely to survive well around talus and into the open woodland that may gradually appear. Fragmentation of habitat may, however, be a threat. On large blocks of habitat such as Obstruction Peak/Elk Mountain, woody vegetation may grow up the slopes, separating patches of *E. ovalifolium* with barriers that the butterfly will be unable to cross.

***Oeneis chryxus valerata* – Olympic arctic**

Range and taxonomy

The species is distributed from the southern Rockies and Sierra Nevada north to the Yukon and eastern Alaska and east across central Canada to New England. Two subspecies are represented in Washington.

Range in the Olympic Mountains

O. c. valerata is restricted to the Olympic Mountains. WDFW (2012) lists 52 historical records for the taxon at six general locations, all in the northeast Olympics, between Mt. Townsend and Hurricane Ridge. During this project, *O. c. valerata* was found at five sites. Three were locations recorded previously. One new record was on Buckhorn Mountain, about five miles southwest of Mt. Townsend, a previously known site. The remaining new site is Mt. Ellinor, about 20 miles south of Buckhorn Peak. Several sites were surveyed between Buckhorn Mt. and Mt. Ellinor. Additional sites were surveyed to the west of Mt. Ellinor. No *O. c. valerata* were seen in any of these locations.

Biology and Ecology

Oeneis chryxus larvae feed on grasses and sedges. Pyle (2002) reared them on *Poa* and found them associated with *Festuca idahoensis* in the Olympics. Captive reared larvae in California, fed successfully on sedges and grasses (James and Nunnallee 2011). California individuals appear to mature in a single year, possibly overwintering as pupae (James and Nunnallee 2011). *O. c. valerata* appears to overwinter twice, once in the first instar and once in the fifth instar (Pyle 2002). This means that two distinct populations exist in the Olympics, flying in even and odd years.

WDFW (2012) reports two records in June. Remaining records are between July and mid-August. The five records found during this project ranged from mid-July to late August.

Adults nectar on a wide range of forbs.

Individuals have been found on scree and talus, alpine meadows, and alpine parkland. The lower elevation of occupied habitat is not well-defined. Surveys should be done from the lower edges of these habitats down slope along trails, streams and other openings.

Conservation status in the Olympic Mountains

Natural Heritage ranks G5T3, N3, S2.

ISSSSP Sensitive, Documented on Olympic National Forest.

The taxon is only known and only likely from the Olympic Mountains. Therefore, T, N, and S ranks should be equal. Given the small range and few known sites, T3 and N3 are not justified. I will recommend changes to T1T2, N1N2, and S1S2. The range rank is due to the recent record from Mt. Ellinor and the possibility of additional locations in the eastern Olympics.

Only five sites are known from the last 20 years for this species. Four are within a very small range in the northeast Olympics. One is in the southeast Olympics, at Mt. Ellinor. More sites may exist, but none were found despite surveys of several sites within the possible range and habitat. Flight period for the subspecies may, however, be complete before some sites are accessible. More early season surveys should be done. The taxon is common where found. Individuals are not inconspicuous. It is unlikely that numerous unknown sites remain, but a few unknown substantial sites or a number of small sites may remain.

Encroachment by woody vegetation into alpine meadow habitat poses a threat, but known sites are in the driest part of the Olympics, and encroachment will be slow. Climate change may, however, affect the speed of the process.

Conclusions and Recommendations

No surveys were done in the southwest or central parts of the Olympics during this project. Hinchliff (1996) shows few records from this area. This area is the wettest, coolest part of the wet, cool Olympic Peninsula. Conditions are not favorable for diverse communities of butterflies. It is also difficult to predict when weather will be favorable for observations. In addition, some areas within this part of the Olympics are hard to reach, requiring long hikes over difficult terrain. This area, and especially alpine habitats such as Mount Colonel Bob, is in need of survey.

Other survey needs exist in the central and eastern parts of the Olympics. Few, if any records are known from meadows above the southern Elwha and the northern Quinault rivers. Large meadows around Mt. Anderson and Mt. Constance have not been surveyed, and most other locations, with the possible exceptions of Hurricane Ridge, Blue Mountain/Deer Park, and Mt. Townsend are under surveyed.

Beyond the general need for more surveys in more places, two distribution questions are obvious. *Polites sonora sonora* is known from only two locations, but Pelham (Jon Pelham, pers. comm. 3 May 2014) thinks it is more common and widespread. Its most likely habitat is moist woodland edge, a habitat that is not often surveyed. *Plebejus lupini spangelatus* is known from four or possibly five sites within a small range. It has not been seen recorded recently at Hurricane Ridge. Its food plant is easily recognized and could be surveyed to locate potential sites for the butterfly.

Recommended conservation status for the four species surveyed under this project is shown in Table 4. Under current taxonomy, *P. s. sonora* and *P. i. blackmorei* occur in the Olympic Mountains and elsewhere. *P. s. sonora* is common across much of its range, and is unlikely to become rare in the near future. *P. i. blackmorei* is declining across the South Puget Sound prairies, so its range-wide status may change. It is, however, the most common and widespread of these species within the Olympic Mountains. Conservation need for these species would increase if Olympic populations were recognized as taxonomically unique from the rest of their range.

P. l. spangelatus and *O. c. valerata* are each restricted to the Olympics. *P. l. spangelatus* larvae are restricted to a single food plant with very small (but incompletely surveyed) range. It is not common at any site. It is, however, under-surveyed. Surveys for the butterfly and for the larval food plant are needed. *O. c. valerata* has a relatively large range within the Olympics and appears to be common at some sites. Surveys are needed in the eastern Olympics and into the interior.

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Table 1. Names of taxa surveyed during this project.

Name used in this report	Pelham, Nunnallee and LaBar (2013)	Pelham, Nunnallee and LaBar (2013)	Pelham, Nunnallee and LaBar (2013)	Pelham, Nunnallee and LaBar (2013)	Hinchliff (1996)
Polites sonora sonora	Polites sonora sonora	Polites sonora sonora	Polites sonora sonora	Polites sonora sonora	Polites sonora sonora
Plebejus icarioides blackmorei	Icaricia icarioides blackmorei	Icaricia icarioides blackmorei	Icaricia icarioides blackmorei	Icaricia icarioides blackmorei	Plebejus icarioides blackmorei
Plebejus lupini spangelatus	Icaricia lupini spangelatus	Icaricia lupini spangelatus	Icaricia lupini spangelatus	Icaricia lupini spangelatus	Plebejus acmon spangelatus
Oeneis chryxus valereata	Oeneis chryxus valerata	Oeneis chryxus valerata	Oeneis chryxus valerata	Oeneis chryxus valerata	Oeneis chryxus valerata

Table 2. Butterfly species known from the Olympic Mountains.

Scientific Name	Common Name
Epargyreus clarus	Silver-spotted Skipper
Thorybes pylades	Northern Cloudy Wing
Erynnis icelus	Dreamy Dusky Wing
Erynnis propertius	Propertius Dusky Wing
Erynnis persius	Persius Dusky Wing
Pyrgus ruralis	Two-banded Checkered Skipper
Carterocephalus palaemon	Arctic Skipper
Hesperia comma	Common Branded Skipper
Hesperia colorado oregonia	Oregon Branded Skipper
Polites sonora	Sonora Skipper
Ochlodes sylvanoides	Woodland Skipper
Parnassius clodius	Clodius Parnassian
Parnassius smintheus olympiannus	Olympic Parnassian
Papilio zelicaon	Anise Swallowtail
Papilio rutulus	Western Tiger Swallowtail
Papilio eurymedon	Pale Tiger Swallowtail
Neophasia menapia	Pine White
Pontia sisymbrii	Spring White
Pieris occidentalis	Western White
Pieris rapae	Cabbage White
Pieris marginalis	Mustard White
Anthocharis sara	Sara Orange Tip
Colias philodice	Clouded Sulphur
Colias occidentalis	Western Sulphur
Lycaena helloides	Purplish Copper
Lycaena nivalis	Nivalis Copper
Lycaena mariposa	Mariposa Copper
Satyrium sylvinum	Sylvan Hairstreak
Callophrys affinis	Washington Hairstreak
Callophrys johnsoni	Johnson's Hairstreak
Callophrys gryneus	Cedar Hairstreak

Scientific Name	Common Name
<i>Incisalia augustinus</i>	Western Brown Elfin
<i>Callophrys mossii</i>	Moss Elfin
<i>Callophrys polios</i>	Obscure Elfin
<i>Callophrys eryphon</i>	Western Pine Elfin
<i>Strymon melinus</i>	Gray Hairstreak
<i>Everes amyntula</i>	Western Tailed Blue
<i>Celastrina "argiolus-ladon complex"</i>	Spring Azure
<i>Glaucopsyche lygdamus</i>	Silvery Blue
<i>Plebejus anna</i>	Anna Blue
<i>Plebejus saepiolus</i>	Greenish Blue
<i>Plebejus icarioides blackmorei</i>	Puget Blue
<i>Plebejus lupini spangelatus</i>	Lupine Blue
<i>Plebejus glandon</i>	Arctic Blue
<i>Speyeria cybele pugetensis</i>	Puget Sound Fritillary
<i>Speyeria zerene bremnerii</i>	Valley Silverspot
<i>Speyeria hydaspe</i>	Hydaspe Fritillary
<i>Boloria epithore</i>	Western Meadow Fritillary
<i>Boloria chariclea</i>	Arctic Fritillary
<i>Phyciodes pratensis</i>	Field Crescent
<i>Phyciodes mylitta</i>	Mylitta Crescent
<i>Euphydryas colon svilhae</i>	Colon Checkerspot
<i>Euphydryas chalcedona</i>	Chalcedon Checkerspot
<i>Euphydryas editha</i>	Edith's Checkerspot
<i>Polygonia satyrus</i>	Satyr Anglewing
<i>Polygonia faunus</i>	Faun Anglewing
<i>Polygonia gracilis zephyrus</i>	Zephyr
<i>Polygonia oreas</i>	Oreas Anglewing
<i>Nymphalis californica</i>	California Tortoise Shell
<i>Nymphalis antiopa</i>	Mourning Cloak
<i>Nymphalis milberti</i>	Milbert's Tortoise Shell
<i>Vanessa virginiensis</i>	American Painted Lady
<i>Vanessa cardui</i>	Painted Lady
<i>Vanessa annabella</i>	West Coast Lady
<i>Vanessa atalanta</i>	Red Admiral
<i>Limenitis lorquini</i>	Lorquin's Admiral
<i>Cercyonis pegala</i>	Large Wood Nymph
<i>Erebia vidleri</i>	Vidler's Alpine
<i>Oeneis chryxus valerata</i>	Valerata arctic

Table 3. Records of rare species from the Olympic Mountains in the last 20 years

Site Name		
Scientific Name	Common Name	Most Recent Record
Appleton Pass		
Plebejus icarioides blackmorei	Puget Blue	03-Aug-13
Blue Mountain/Deer Park		
Plebejus icarioides blackmorei	Puget Blue	17-Jul-13
Plebejus lupini spangelatus	Lupine Blue	17-Jul-13
Oeneis chryxus valerata	Valerata arctic	25-Jul-12
Buckhorn Peak meadows		
Oeneis chryxus valerata	Valerata arctic	20-Aug-12
Discovery Lake		
Plebejus icarioides blackmorei	Puget Blue	24-Jun-04
Grand Pass		
Plebejus icarioides blackmorei	Puget Blue	13-Aug-13
Hurricane Hill		
Plebejus icarioides blackmorei	Puget Blue	02-Aug-12
Hurricane Ridge		
Oeneis chryxus valerata	Valerata arctic	18-Jul-12
Lake of the Angels		
Plebejus icarioides blackmorei	Puget Blue	31-Jul-04
Lost River Meadow		
Plebejus icarioides blackmorei ?	Puget Blue	16-Aug-13
Plebejus lupini spangelatus ?	Lupine Blue	16-Aug-13
Mt. Ellinor		
Oeneis chryxus valerata	Valerata arctic	21-Jul-02
Mt. Townsend		
Plebejus icarioides blackmorei	Puget Blue	01-Aug-95
Plebejus lupini spangelatus	Lupine Blue	16-Jul-13
Oeneis chryxus valerata	Valerata arctic	16-Jul-13
Obstruction Peak/Elk Mountain		
Plebejus icarioides blackmorei	Puget Blue	03-Aug-12
Plebejus lupini spangelatus	Lupine Blue	03-Aug-12
Royal Basin		
Plebejus icarioides blackmorei	Puget Blue	26-Jul-12
Sundown Lake		
Plebejus icarioides blackmorei	Puget Blue	08-Aug-04
Wynochee Pass		
Plebejus icarioides blackmorei	Puget Blue	09-Aug-04

Records in **BOLD** were found during field work for this project.

Table 4. Current and recommended ranks

Scientific Name	Current Ranks	Recommended Changes	ISSSSP Status Changes	Comments
<i>Polities sonora sonora</i>	G4, N4, S4	None	Documented for Olympic National Forest	Assuming this population is not separated from other populations. If it is separated, ranks of G4T1T2, N1N2, S1S2 are justified until more populations are found.
<i>Plebejus icarioides blackmorei</i>	G5T3, N1N2, S2	None	None	Within the Olympics, this is the most widespread and abundant of the species.
<i>Plebejus lupini spangelatus</i>	G5T1, N1, S2	S1	None	S2 conflicts with T1, N1 ranks. Taxon is clearly rare and may have declined.
<i>Oeneis chryxus valerata</i>	G5T3, N3, S2	G5T1, N1, S1	None	Only known and only likely in the Olympics, so ranks should be equal. Very small range, few known sites.





