

Polites sonora siris

Dog Star Skipper

Record gathering and ID assessment

Compiled for the Interagency Special Status Sensitive Species Program (ISSSSP)

By Candace Fallon, the Xerces Society for Invertebrate Conservation

Reviewed by Sarina Jepsen (the Xerces Society for Invertebrate Conservation), Kelli Van Norman (BLM/ISSSSP), and Rob Huff (BLM/ISSSSP)

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Introduction

The dog star skipper, *Polites sonora siris*, is a small skipper butterfly found west of the Cascade Mountains, ranging from central California to the central Puget Sound and southern Olympics (Hinchliff 1996, Pyle 2002). It is a Forest Service and BLM strategic species in both Washington and Oregon. Xerces Society staff aimed to gather all available records for this subspecies in Oregon and Washington and evaluate the ease of differentiating this subspecies from other subspecies of *P. sonora*. This report discusses our findings and our recommendations regarding whether surveys for this subspecies on the Olympic National Forest and other areas are an appropriate next step.

Conservation Status

Global status: G4T3 (last reviewed 29 Jun 2006)

Rounded global status: T3 – Vulnerable

National Status (U.S.): N3 – Vulnerable (last reviewed 30 Sep 1998)

State Status: S3? (OR), S2S3 (WA)

(NatureServe 2014)

IUCN Red List: NE – Not evaluated

Methods

In fall of 2014, Xerces staff gathered all available records of *Polites sonora siris* in Washington and Oregon. We consulted the following curators, collections, publications, websites, and Lepidoptera experts to gather these records:

- Andrew Warren (McGuire Center for Lepidoptera and Biodiversity) (*no reply*)
- Ann Potter (Washington Department of Fish and Wildlife)
- Bill Yake (*no reply*)
- Bob Pyle
- Butterflies and Moths of America website

- Butterflies and Moths of North America website
- Caitlin Labar (butterfly collector based in Washington)
- California Academy of Sciences online database
- Carnegie Museum of Natural History online database
- Chris Marshall (Oregon State Arthropod Collection)
- Butterflies of Oregon website
- Dana Ross
- Eleanor Gaines (Oregon Biodiversity Information Center)
- Global Biodiversity Information Facility (GBIF)
- Harvard University Museum of Comparative Zoology online database
- Hinchliff atlases for Oregon and Washington
- Illinois Natural History Survey online database
- John Fleckenstein (Washington Natural Heritage Program)
- Jon Pelham (*no reply*)
- Jon Shepard
- Kelli Van Norman (Interagency Special Status Sensitive Species Program)
- Kim Davis and Mike Stangeland (butterfly collectors)
- Lepidopterist Society Season Summaries
- NatureServe
- Paul Hammond (Oregon State University)
- Rod Crawford (Burke Museum arthropod collection)
- Smithsonian National Museum of Natural History entomology collection online database

We compiled all of the records, georeferenced any that did not have associated coordinates, assigned accuracy codes, and mapped these records in ArcMap. Three records from Arsene Fouassin (Royal Belgian Institution) that were gathered from GBIF were not included in the map (Fig. 1), as all three of these were to the east of the Cascade crest and appeared to be misidentified. In addition, a 1973 King County Big Soos record from Washington was disregarded as unreliable, based on personal communications with the collector (Pyle 2014, pers. comm.). We then overlaid a shapefile of Forest Service and BLM managed lands in Oregon and Washington to determine the proximity of these records to federal lands, particularly in the Olympic Peninsula (see Fig. 1). Discussions with Ann Potter, Bob Pyle, and John Fleckenstein guided our recommendations provided in the final section of this report.

Results and Discussion

Range and Taxonomy

The species *Polites sonora* occurs in disjunct populations throughout the western United States from southern British Columbia south to northern Baja and east to Wyoming, Colorado, and Montana (Newcomer 1966, Fleckenstein 2014). It is found in a wide variety of habitats including open meadows, pastures, forest lanes and roadsides, grassy clearings, and stream banks (Pyle 2002, James & Nunnallee 2011). In the Pacific Northwest, this species is geographically variable, with three described and one undescribed subspecies in Oregon and Washington: *P. s. sonora* in the Cascades and Olympics, *P. s. siris* in coastal and southwest Washington, coastal Oregon, and Oregon's Willamette Valley, *P. s. utahensis*

from southeast Washington and northeastern Oregon, and an undescribed subspecies resembling *P. mystic* in the Blue and Wallowa Mountains of central eastern Oregon (Hinchliff 1994, Hinchliff 1996, Pyle 2002, Warren 2005, Fleckenstein 2014). It is possible that the southernmost *P. s. sonora* in Lake County, Oregon, may actually represent *P. s. flaviventris* (Pyle 2002).

Oregon

In Oregon, *P. s. siris* is found west of the Cascade Mountains in coastal and lowland valley areas (Pyle 2002). Hinchliff (1994) treats all *P. sonora* found in western Oregon north of Douglas County as *P. s. siris*, however Warren (2005) treats records from Multnomah County and the Willamette Valley as segregates, which he tentatively calls *P. sonora* nr. *siris*. These individuals are larger and somewhat brighter above and below than *P. s. siris* (Warren 2005).

Federal land: No records are known from National Forests or BLM Districts in Oregon. However, the subspecies is suspected in the Columbia River Gorge National Scenic Area, on the Willamette and Mt. Hood National Forests, and on the Eugene and Salem BLM Districts (Fleckenstein & Huff 2011, ISSSSP 2014). Several known records occur very close to the Willamette National Forest and Eugene BLM District in particular.

Washington

In Washington, *P. s. siris* is known from the southern Puget Sound area south toward the Columbia River and west toward the Pacific Ocean (Hinchliff 1996, Pyle 2002). Individuals from the Olympics carry taxonomic uncertainty and are treated as *P. s. siris* by Guppy and Shepard (2001) but as *P. s. sonora* by most others (Hinchliff 1996, Pyle 2002, Pelham 2008, Pyle 2014, pers. comm.).

Several records from Bob Pyle (from 1988 and 1994) and Jon Pelham (from 1997) in the northern Olympics should be reviewed. Pyle identifies his two records from the Blue Mountain area as *P. s. siris*, however Pelham believes these individuals and three others found by Bill Smith near the Tubal Cain Mine should be called *P. s. sonora*. Pyle recently reexamined his small series of specimens from the high Olympics and found that they do not look like *P. s. sonora* or *P. s. siris* (as compared to those specimens in his collection), and may in fact represent a different subspecies altogether (Pyle 2014, pers. comm.).

Federal land: *Polites sonora* occurs in two different locations in the Olympic National Forest (east of Blue Mountain and near the Tubal Cain Mine); however, lepidopterists disagree as to which subspecies these records represent. *P. s. sonora* is currently described from a large area in the Cascade Mountains and a small area in the Olympic Mountains. Should these Olympic populations be treated separate (whether as *P. s. siris* or otherwise), they would be of conservation concern (Fleckenstein 2014). Two other *P. s. siris* records occur very close to the southern boundary of the Olympic National Forest (and are potentially from NF land, but the locality description is imprecise). This subspecies is suspected in the Columbia River Gorge National Scenic Area and the Gifford Pinchot National Forest (ISSSSP 2014).

Polites sonora siris Dog star skipper

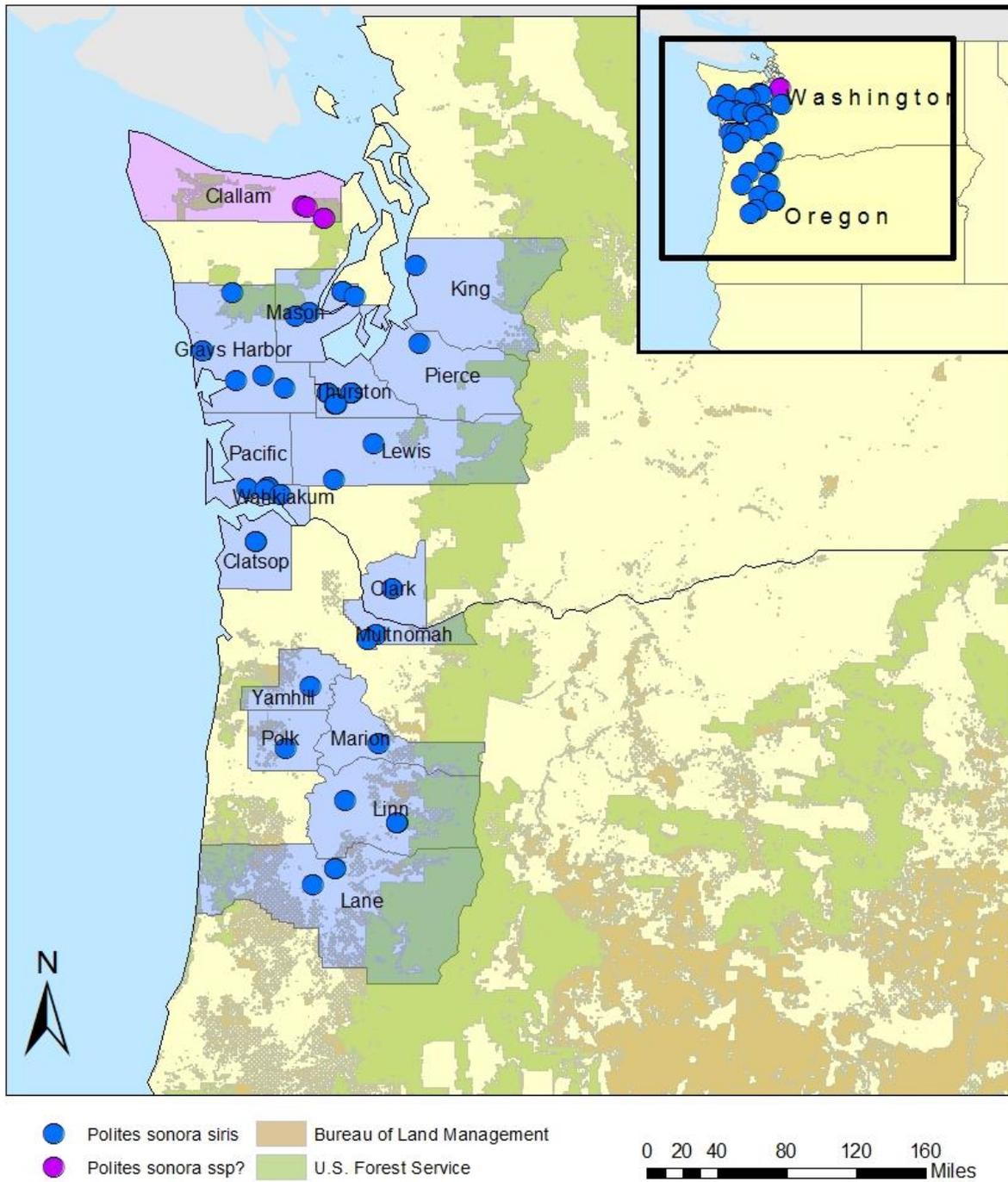


Figure 1. Map of known *P. sonora siris* records in Oregon and Washington, including records with questioned taxonomy in the northern Olympics (in purple).

Recommendations

Polites species across their range are characterized by variation between and within populations, making descriptions and subspecies designations difficult. Further study into the geographic variation in *Polites sonora* would be greatly facilitated by additional collections made across this species' range in northwest Oregon and western Washington. Larger series would provide greater insights into local patterns of variation and help clarify the taxonomic status of the various populations (Warren 2005).

Oregon

Hammond (2014, pers. comm.) notes that the easiest way to differentiate this subspecies in Oregon is by location (lower elevations west of the Cascades) and habitat (dry prairie). However, Warren's (2005) treatment of *P. sonora* in northwest Oregon as *P. sonora* nr. *siris* warrants fresh review of specimens from across the subspecies' range in Oregon. Until this review is carried out, all individuals from this region of the state are treated as *P. s. siris*, and geography alone should be adequate for differentiating this subspecies from others in the field. However, since taxonomic questions exist, voucher specimens could be collected and returned for future taxonomic analysis as part of any survey conducted. Additional surveys to collect fresh specimens and document the species range in Oregon are recommended on land managed by the BLM and Forest Service near known localities throughout the Willamette Valley and foothills of the Coast Range and Cascade Mountains as well as the Columbia River Gorge area.

Washington

In Washington, survey efforts have been greatest in the southern Puget Sound area. Over the last decade, this subspecies has become more restricted on southern Puget Sound sites, and despite repeated surveys it has only been detected on two prairies in this region in the last few years (Potter 2014, pers. comm.). Five sites are identified as locations for *P. s. siris* in Thurston County, and of these the butterfly is extant (in very small numbers) at Rocky Prairie (now West Rocky Prairie) and Scatter Creek N Unit. It is extirpated at Mima Mounds and Rocky NAP. The status of this butterfly is unknown at Scatter Creek S. Unit. Rocky Prairie was surveyed by Barry and Darlene Bidwell until at least 2004 but no observations of *P. s. siris* were made after 1998.

There have been fewer efforts to relocate this butterfly in forest locales of southwest Washington (Grays River, Mason sites), although Bob and Thea Pyle have searched this area in recent years and found populations on their own property and at Salme Hill (Potter 2014, pers. comm.). The Salme Hill site is now considered extirpated due to fill (Pyle 2014, pers. comm.).

In the Olympic Mountains, Pyle (2014, pers. comm.) states there were many years of collecting at Blue Mountain before he found *P. sonora* there, and it has not yet been found at Hurricane Ridge. W. N. Burdick, who conducted many Olympic butterfly surveys in the early and mid-1900s, never found it either (Pyle 2014, pers. comm.). Fleckenstein (2014, pers. comm.) notes that Vince Lucas has spent a considerable amount of time in the Olympics in the last couple years and has not found *siris*, nor has Bill Yake, who conducted surveys in the southeast Olympics in 2005. Fleckenstein (2014) conducted surveys for this species in 2012 and 2013 but was not successful in finding it either. Despite all of this, the records from Blue Mountain and the Tubal Cain mine suggest that other populations are present and

may have been overlooked by surveyors who focused on open alpine habitat rather than tree line areas. Pyle (2014, pers. comm.) believes further surveys are definitely warranted in this area, whether the subspecies is *P. s. siris* or not.

To address these taxonomic issues and determine potential occupancy on Forest Service lands on the Olympic Peninsula, additional surveys and collection of DNA samples for genetic work are suggested. Pelham believes the taxon is more common and widespread than currently documented (Fleckenstein 2014), and Pyle (2014, pers. comm.) notes that there appears to be a lot of potential habitat for this subspecies in the area. Fleckenstein (2014, pers. comm.), however, points out that surveys for this taxon may be very difficult because it is located in a relatively remote area, it is apparently difficult to find (based on other search efforts in the area), and it is hard to identify. On top of that, weather in the Olympics is highly variable and undependable, making planning for surveys difficult.

Polites sonora appears to be associated with moist woodland edges in the Olympics, a habitat type that is not often surveyed for butterflies. Areas in the Olympic National Forest that are characterized by mesic meadows at or near the tree line are survey priorities for this taxon. Fleckenstein (2014) notes that additional surveys in the southwest or central parts of the Olympics are needed, particularly in alpine habitats such as Mount Colonel Bob (near Lake Quinault) and other areas in the central and eastern parts of the Olympics. Lower elevation Forest Service lands in the southern Olympics near historic records could also be surveyed to determine the extent of *P. s. siris* in this region. Identification of the habitat types used in the Olympics would be useful in characterizing the life history needs of this subspecies and identifying future areas to survey.

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