

SPECIES FACT SHEET

Common Name: Valley Silverspot (butterfly)

Scientific Name: *Speyeria zerene bremnerii*

Phylum: Mandibulata

Class: Insecta

Order: Lepidoptera

Family: Nymphalidae

Taxonomic note: Warren (2005) considers individuals from Oregon to be *Speyeria zerene* nr. *bremnerii*, although taxonomic treatment by Pelham (2008) retains the *Speyeria zerene bremnerii* designation for both Washington and Oregon populations.

Conservation Status:

Global Status (1998): G5T3T4

Rounded Global Status: T3 - Vulnerable

National Status (United States): NU

National Status (Canada): N2N3

State/Province Statuses: Washington (S2S3), Oregon (SH), British Columbia (S2)

(NatureServe 2009)

Technical Description:

Adult (species distinction): *Speyeria zerene* is a reddish-orange greater fritillary butterfly with black markings and spots. This species is usually smaller and darker than *S. coronis*, with a wingspan of less than 6.35 cm (2.5 in.). The forewing is rounded and the hindwing angular. The ventral hindwing disk is red-brown, often with pale yellow highlights. Silver spots prominent, medium in size. Ventral hindwing slightly concave with marginal spots and brown caps usually triangular (Pyle 2002).

Adult (subspecies distinction): The *bremnerii* subspecies can be easily identified by the reddish-brown disc color and broad, bright yellow band of the ventral hindwing (Pyle 2002). The silver spots on the outer margins of the hindwing of this subspecies are low and rounded, usually oval or lens-shaped in outline. In most other fritillaries these spots are larger and more triangular (GEORT 2003). Occasionally, individuals with deficient silvering are encountered (Dornfeld 1980). It is larger than the coastal forms of this species (Pyle 2002). Individuals collected during the 1960's from the west side of the Willamette Valley and Mary's Peak (where the species is now apparently extinct) were larger and paler (Pyle 2002).

Immature: The creamy eggs of this species are 1 mm by 0.6 mm in size, and darken before hatching (GOERT 2003, Pyle 2002). The larvae vary from straw-gray to orange-brown, with dark spines which usually have gray markings at the base and a rounded head capsule (Pyle 2002, Dornfeld 1980). Mature larvae are black with two narrow yellow stripes in the middle of the back and spiny protuberances which are black on the first two dorsal rows and yellow on the third and fourth rows (GOERT 2003). Pupae are black-barred and hang head down in silk-laced leaves of violets (Pyle 2002).

Life History:

The flight period of the *bremnerii* subspecies in Oregon is late June to July, but note that it is scarce and some years cannot be found at all (Dornfeld 1980). In the Canadian parts of its range, adults fly from early July to late August (GOERT 2003). All populations of *S. zerene* have one life cycle per year. Mating takes place immediately after adult females emerge from the pupae, and eggs are laid at the base of a violet plant (*Viola* spp.) or in leaf litter nearby (GOERT 2003). Larvae hatch in late summer and then hibernate until the following spring, when the violets leaf out and the larvae are able to begin feeding (GOERT 2003). The larvae are very gregarious during the first instars, and become mostly solitary as they mature (GOERT 2003). *Viola adunca* var. *adunca* is known as a larval foodplant of this subspecies in Oregon; in British Columbia (Vancouver Island) the larvae are reported to feed on *V. palustris* (reviewed in Warren 2005). Males may be found visiting mud or patrolling sunny areas, with the exception of hilltops. Both sexes visit a wide variety of flowers, including thistles (*Cercium* spp.), tansy ragwort (*Senecio jacobaea*), goldenrod (*Solidago* spp.), and dew (*Aptenia* spp.) (Pyle 2002, Warren 2005).

Range, Distribution, and Abundance:

Rangewide: This subspecies is historically known from southwestern British Columbia south to west-central Oregon. In British Columbia, it occurs on Vancouver Island and Salt Spring Island, although recent searches of these islands found only a few surviving populations (GOERT 2003). It has also been recorded in British Columbia's Lower Mainland but these are likely strays or historical populations that are now extirpated (GOERT 2003).

Washington: Occurs on the San Juan Islands, along the Washington Coast Range, and in the Puget Trough (Pyle 2002).

Oregon: Historically occurred along the eastern slope of the Coast Range and western edge of the Willamette Valley, including Mary's Peak, with the greatest frequency in the McDonald Forest and near Falls City, Polk County. The last individuals were seen in the 1970's in Benton County and an attempt during the 1980's to reestablish populations on Mary's Peak, Benton Co. with stock from Washington state (Tenino Prairie ecotype) was ultimately unsuccessful. The population was successfully established as of 1994, although no butterflies

were found in 2004 (Hammond 2006, *pers. comm.*), and this subspecies is now apparently extinct in Oregon. Curiously, most adults from the final two or three years that the introduced population was extant were somewhat melanic above (Warren 2005).

BLM/Forest Service Lands: This species is suspected on BLM land in the Salem District, and documented on the Siuslaw National Forest and Willamette National Forest. In Washington, it is documented on the Olympic National Forest and suspected on the Gifford Pinchot National Forest and Mount Baker-Snoqualmie National Forest.

Habitat Associations:

This subspecies inhabits windy peaks with nearby forest openings. It is also found in native prairies and grasslands, often tending towards more mesic sites (Pyle 2002, Hammond 2006, *pers. comm.*).

Threats:

This subspecies has been extirpated in Oregon and is threatened by conversion and elimination of native grassland habitats throughout the remaining areas of its range. Populations are very closely linked to the availability of larval and adult foodplants, and even in undeveloped areas, long-term survival of this subspecies may be jeopardized by the invasion of non-native grasses, Scotch broom (*Cytisus scoparius*) and other invasive plants and shrubs that crowd out the larval foodplants (GEORT 2003). In Washington, many of the best sites for this species have been lost to development and land use change, including grazing regime change (Pyle 2009, *pers. comm.*).

Conservation Considerations:

Protect all new and known sites from practices that would adversely affect any aspect of this species' life cycle, including cattle-grazing, agriculture, exotic grasses, road construction, and building construction. Manage to maintain open meadows and violet stands in known and potential habitat by removing grasses and shrubby cover and restoring conditions that allow violets to proliferate (GEORT 2003). Additionally, protect wooded nooks where adults loaf, nectar, and court (Pyle 2002).

Evaluate apparent long-term failure of reintroduction efforts on Mary's Peak.

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