

Species Fact Sheet

Island marble butterfly

Enchloe ausonides insulanus



STATUS: SPECIES OF CONCERN

Island marble butterfly occurs in San Juan County, Washington.

(Map may reflect historical as well as recent sightings)

On December 11, 2002, the Service received a petition to list the island marble butterfly, *Enchloe ausonides insulanus*, in San Juan County, Washington, as an endangered species and designate critical habitat under the Endangered Species Act. After review of all the scientific and commercial information available regarding the past, present, and future threats faced by the island marble butterfly, the USFWS (2006) found federally listing the butterfly was not warranted under the Endangered Species Act.

Current and Historical Status

The subspecies was historically collected from 1861 to 1908 on Vancouver Island and the Canadian Gulf Islands in British Columbia, Canada (14 museum collections). These islands are part of the same geologic formation as the San Juan Archipelago found immediately south of the gulf islands. The island marble

butterfly was last observed on Gabriola Island, Canada in 1908 and was considered to be extirpated throughout its known range.

The butterfly was rediscovered on San Juan Island, Washington in 1998. Although island marble butterfly was not known to exist on the American San Juan Islands, it likely had been present in low numbers during the last century. Extensive surveys were conducted from 2005-2010 by various organizations including but not limited to WDFW, WDNR, NPS, WWU, UW, and USFWS biologists. During 2005 and 2006 alone, more than 325 surveys were conducted at more than 160 distinct locations in 6 northern counties and on 16 islands in Washington. Twenty six detections were documented representing one core population with four peripheral subpopulations known only from San Juan and Lopez Islands.

Description and Life History

The island marble butterfly (island marble) is a member of the Pieridae family, primarily consisting of white and yellow butterflies. The island marble is 1.75 inches long, creamy white, and slightly larger than other subspecies of marble butterflies. The yellow-green marbled pattern on the ventral hindwings and forewings characterizes the adults of the subspecies.

The eggs of island marble are bluish-greenish to cream when laid, and change to orange or red at maturity. Larvae have five instar stages before over-wintering as pupae. Larvae are steely-blue above, transitioning to green below, with bright yellow stripes along the sides and back and are peppered with small black spots. Fifth-instar larvae walk about to find secure resting locations for pupation on the lower stem of food plants, where the pupae over-winter until emerging as adults the following spring. The island marble butterfly is univoltine, which means just one brood are produced each year. The flight period of adult butterflies generally commences in early to mid April and is completed by mid-June in the San Juan Islands, Washington. Eggs may be observed for a week beyond when adults are observed, and larvae have been observed into mid July.

Habitat

The island marble butterfly is a nonmigratory, highly endemic species that lives its entire lifecycle within upland grasslands, sand dunes, or coastal lagoon habitat. Adults fly for a short period in the spring, utilizing primarily nonnative plants of the mustard family as larval food. Experimental work has identified

native mustards as an acceptable larval food.

The use of native and nonnative mustards by the island marble butterfly is likely a shift from the preferred larval food plants used historically. It is not known whether this shift to using nonnative plants by butterflies was brought on by butterfly preference or plant availability. Regardless of how this shift occurred, the use of nonnative plants such as *Brassica* and *Sisymbrium* has contributed to the survival of the island marble butterfly on grassland habitat and is expected to continue to play a significant role in the species continued existence. In addition, because nonnative mustard species are able to quickly colonize disturbed areas, many temporary ground disturbing activities have short term effects that do not appear to result in long-term changes to island marble butterfly population numbers or distribution. The primary utilization of nonnative mustards by IMB is likely a shift from native larval food plants that were historically available and utilized.

Reasons for Decline

We have to consider that the island marble butterfly has always been rare. Existing threats to the species contribute to the loss, fragmentation, and alteration of Island Marble habitat, typically resulting in short-term impacts to its distribution and abundance. Actions that effect island marble butterfly habitat include development for housing, road construction, road maintenance, collisions with vehicles, storm and tidal surges that inundate and bury habitat, herbivory of host plants by deer, loss of native prairie habitat to nonnative rabbits, and succession of grassland habitat to shrubs and trees. However, because the island marble butterfly is able to use nonnative mustard species that may quickly colonize habitat after ground-disturbing activities, many ground-disturbing activities may have short-term negative effects that do not appear to result in long-term changes to IMB population numbers or distribution.

Conservation Efforts

The National Park Service (NPS) is the caretaker for the largest parcel (600 acres) of suitable habitat and the largest population of island marble butterflies at American Camp, San Juan Island National Historic Park, Washington. In 2006, The National Park Service (NPS) developed a Conservation Agreement for the island marble butterfly. This document provides guidance for conserving the island marble butterfly on lands administered by the NPS, and specifically for implementation of grassland restoration activities at American Camp. The

conservation principles presented in the Conservation Agreement also provides guidance for management of butterfly habitat on private, rural lands dispersed across San Juan and Lopez Islands.

The NPS has implemented grassland restoration activities, with financial and logistical support from various partners, including USFWS. These activities include the removal of invasive vegetation through the application of herbicides and use of prescribed fire, and the planting of native species. The park has focused conservation efforts to collect seeds of native grass and forbs to establish seed-increase plots and provide seed to nurseries for propagation of seedlings to be returned to the prairie. A more robust island marble population is expected as a result of these efforts.

During 2008, surveys conducted by Western Washington University at a new site and on NPS lands included a pilot project to mark and recapture butterflies. This information has improved our understanding of the species, the movement of male and female butterflies, and its interaction with host plants.

A landowner brochure was completed by Washington Department of Fish and Wildlife and USFWS to help local landowners identify the species on their property and to provide voluntary guidelines for producing and managing IMB habitat. USFWS, WDFW, WDNR, and the San Juan Preservation Trust are working on San Juan and Lopez islands to expand the network of local citizens searching for butterflies and producing and managing butterfly habitat. Several private landowners and the Lopez School have created IMB gardens. As a result of these efforts, WDFW, USFWS, and a private landowner have developed a draft management plan for IMB for a 45 acre parcel adjacent to the IMB habitat owned by the Town of Friday Harbor Recreation Department.

References and Links

Status Review USFWS

[San Juan Island National Historic Park](#)

Conservation Agreement and Strategy

[Xerces Society](#)

[WDFW Recovery Activities](#)