

Conservation of the Island Marble Butterfly

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The Island Marble butterfly (*Euchloe ausonides insulanus*) was presumed extinct in 1908. Ninety years later it was rediscovered on San Juan Island, Washington. Former populations occurred on Vancouver and Gabriola Islands, British Columbia. It was petitioned to be listed as endangered in 2006 because of its highly restricted distribution and small population size.

The Island Marble is a spring butterfly of coastal lowlands occurring on San Juan and Lopez Islands. It has multiple life stages: adult (flying stage), egg, larvae (caterpillar) and chrysalis. There are five instars (molts) during the larval stage. The Island Marble has three primary host plants: field mustard, tumble mustard and Menzies' peppergrass.

RESEARCH QUESTIONS:

1. At what life stage(s) is the Island Marble most vulnerable?
2. What factors cause the highest rate of mortality?

METHODS:

- The development and survivorship of eggs and larvae were recorded each spring from 2005-2007. For example, in 2007, 430 eggs were tracked
- Selected host plants were marked using flagging tape
- Rings of color coded wire were placed around plant stems to relocate individual eggs and larva
- Factors causing mortality were identified and recorded

RESULTS:

- Survivorship data (2005 – 2007) suggest that the most vulnerable stages of development are eggs and 1st instar larvae. For example, in 2006, only 19% of 763 eggs survived to 2nd instar.
- Factors causing the highest rate of mortality are host plant phenology (senescence) and deer herbivory. For example, in 2007 approximately 50% of eggs laid on field mustard were eaten by deer.

RECOMMENDATIONS:

- Exclude deer from vulnerable habitat patches
- Introduce native host plants that are able to support the development of Island Marble larvae

Amy is currently working on her PhD in Conservation Biology with Dr. Kern Ewing. These results are part of her dissertation research. You can contact her at lambea@u.washington.edu

