

# Vineyards: Sanctuaries for Native Plants & Butterflies

By David James, WSU-IAREC

The title of this article would make no sense to anyone 15 years ago; how would wildflowers and butterflies survive in an intensively managed monoculture like wine grapes? Butterflies are notoriously sensitive to chemicals and habitat disruption, and the very idea that they could somehow live and breed amongst grapevines would have been preposterous back in the 1990s.

Eastern Washington vineyards have come a long way, as described in a recent article published in the *Journal of Insect Conservation* (contact the author for a free PDF). The article presented the results of a 2-year study comparing the diversity and abundance of native plants and butterflies in and around 8 Washington wine grape vineyards spread over 4 viticultural appellations (Columbia Gorge, Walla Walla Valley, Yakima Valley, Wahluke Slope).



*Native flowering plants serve as nectar and caterpillar hosts for native butterflies. Photo by David James.*

Four of the vineyards had some measure of habitat restoration with the owners encouraging the growth of native plants around the vineyard. Each 'habitat-enhanced' vineyard (native plants located within 100 yards of the vineyard) was paired with a nearby 'conventional' vineyard that did not feature habitat restoration. All vineyards were visited at 2-week intervals from May-September in 2012 and 2013, and inventories were compiled of the plants and butterflies seen.

Overall, there were 4X as many plants

in and around the habitat-enhanced vineyards (119) than in conventional vineyards (29). Twenty-nine species of butterflies were recorded in the habitat-enhanced vineyards, but only 9 species were seen in the conventional vineyards. On a vineyard basis, there was an average of 5.6 species in habitat-enhanced vineyards compared to 2.7 in conventional vineyards. The abundance of butterflies (numbers of individuals of all species) was significantly greater in habitat-enhanced vineyards (mean average: 20.4/visit) compared to conventional vineyards (5.5/visit).

These data suggest that butterflies may be found in any Washington vineyard today presumably because of the limited number of pesticides (primarily insecticides) that are applied. But clearly there is a big difference in the diversity and abundance of vineyard butterflies depending on the extent that native plant resources are present. Butterflies are common in vineyards that have plenty of native plants in them. All of our native butterflies depend upon native plants for their development and survival both as hosts for their caterpillars and as sources of nectar. By encouraging native plants, it appears that wine grape vineyards have the potential to become veritable oases for butterflies!

The plants and butterflies are beautiful but are there other benefits from habitat restoration for the grape grower? Well, nearly all of the native plants important for butterflies also attract predators and parasitoids of grape pests and therefore may improve vineyard pest management. This aspect of our research has been



*The Two-tailed Tiger Swallowtail nectaring on Western Giant-Hyssop which also attracts and sustains predators and parasitoids of grape pests. Photo by David James.*

featured in these pages before (Spring 2013) and will be again. Suffice to say that restoring native flora and habitat to vineyards (naturescaping) has benefits on many levels, some of which we have yet to document (e.g., weed control?).

But if you are excited by the prospect of seeing butterflies, the potential of butterflies living in your vineyard is good news and it will certainly improve the aesthetics of your viticultural landscape. Perhaps it also has the potential of enhancing the promotion and marketing of your wine? What better symbol is there than a butterfly to represent the sustainable nature of your grape growing enterprise?

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*Native buckwheat plants (Eriogonum spp.) provide nectar and host caterpillars of many blue butterflies as well as attracting many beneficial insects. Photo by David James.*