



Western SARE

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Western SARE Grant Categories

- Research & Education
- Professional Development
- Farmer/Rancher
- Professional + Producer
- Graduate Student
- Sustainable Farm Tours

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Click on: Apply for a Grant

FARMERS BANKING ON BEETLES

Background

Beetle Banks are undisturbed, grassy mounds constructed in the field that provide essential over-wintering habitat for predatory beetles and spiders that act as generalist feeders among crops throughout the growing season. The beetles and spiders have the potential to limit numbers of many kinds of crop pests.

Professional + Producer Grant

Title: Banking on Beetles in Oregon

Project Number: FW06-324

Agricultural Professional:

Gwendolyn Ellen
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Cooperators:

Mary and Vince Alionis, Whistling Duck Farm
Mario Ambrosino, Research Associate, OSU Integrated Plant Protection Center
Sally Brewer and John Eveland, Gathering Together Farm
Jeff Falen and Elanor O'Brian, Persephone Farm
Paul Jepson, Director, OSU Integrated Plant Protection Center
Laura Masterson, The 47th Avenue Farm

Amount Funded: \$19,068



Plowing to raise the beetle bank, above, and mulching the bank, left, during a farm walk at Whistling Duck Farm, Grants Pass, Oregon.

In 2005, several vegetable farmers attending Farmscaping for Beneficial (FSB) events expressed an interest in constructing beetle banks as a conservation biological control method on their farms.

In 2006, four participating Oregon organic farmers and FSB researchers were awarded this SARE grant to look at on-farm populations of predacious ground beetles and to begin developing on-farm technologies for beetle banks. Project farmers and

researchers have collaboratively developed science-based, farming-system-tested, practices for beetle bank design and establishment appropriate for the western United States.

We have also identified specific native plant species and plant associations that provide effective beetle habitat and that minimize weed establishment. The banks are a focus for evaluation, learning and feedback among farmers using various participatory, community integrated pest management (IPM) approaches.

In 2006, we set our targets on development of bank construction techniques, bank establishment and sharing techniques through farm walks and meetings. In 2007, we worked on fine-tuning bank establishment, maintenance and weed management in addition to fulfilling our objectives of understanding the characteristics of the selected native grasses



Organisms found in 2006-8 beetle banks include 139 different arthropod species; including 26 species of carabids, 15 species of Rove beetle and 25 species of spiders.

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Western SARE, a USDA organization, funds grants for research and education that develop or promote some aspect of agricultural sustainability, which embraces

- *profitable farms and ranches*
- *a healthy environment*
- *strong families and communities.*

The Western Region, one of four SARE regions nationwide, is administered through Utah State University.

Western SARE:
<http://wsare.usu.edu>

National SARE
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FARMERS BANKING ON BEETLES

and the occurrence and diversity of predacious ground beetles on the farms.

The program consists of:

- Farmer-to-farmer information exchanges
- Farm walks and demonstrations of techniques
- On-farm research and development
- Emphasis on integrating conservation practices into farm plan

Outreach/Actions

Four farm walks, two farmer dinners, two farmer panels, farmer and poster presentations at five regional conferences, one watershed meeting and five Bugscaping Games (an interactive habitat planning session) have exposed hundreds of Pacific Northwest growers to diverse farming systems, a variety of functional agricultural biodiversity techniques used by farmers, including the construction of beetle banks in Oregon and what we are learning about the predacious ground beetles associated with them.

Since 2005, six beetle banks have been created on cooperating farms, two failed



Above, one of three banks at Persephone Farm fall broadcast seeded with *Alopecurus geniculatus* in Lebanon, Oregon.



A mulched hand-raised beetle bank at 47th Street Farm in Portland, above, and a transplanted beetle bank, near left, growing with *Elymus glaucus* the next spring at Gathering Together Farm at Philomath.



and two new ones were planned for 2008. The successful establishment of the banks requires implementation methods that fit within the farm production plan, knowledge of cultivating native grasses, farm weed and pest cycles and the ecology and biology of the predacious ground beetles.

Outcomes

There have been several outcomes from Banking on Beetles in Oregon, including:

- Developing successful beetle banks in organic systems and successful weed management techniques such as flaming, mulching and site preparation, bank raising techniques and choosing appropriate native grass species.
- Collecting preliminary data on predacious ground beetles populations on Oregon farms

and the habitat and other beneficial organisms associated with them.

- Increasing the adoption of beetle banks in the PNW. This project has inspired 17 known experimental beetle banks to be raised to date, in addition to the four that farmers established under this project. Other banks are planned at New College of Florida and the Universidade Estadual Paulista in Sao Paulo, Brazil.
- Developing collaborations with Oregon's Natural Resource Conservation Service, Oregon Metro, The Xerces Society for Invertebrate Conservation, Oregon Tilth and the Northwest Farmer to Farmer Network