

WERA-1013 Report – University of Idaho

Participants:

Stephen L. Love, University of Idaho

Thomas Salaiz, University of Idaho

Accomplishment:

The University of Idaho native plant domestication project accomplished the following in 2010:

1. Began breeder seed production of superior native plants for purposes of commercialization.
2. Initiated a study to evaluate Idaho fescue for turf applications.
3. Organized a native plant landscaping workshop in conjunction with the Idaho Horticulture Expo.

Plans for the coming year include:

1. Establish a partnership with a native plant nursery to facilitate commercialization of new native plant species and varieties.
2. Participate in the Colorado Green Conference and provide education on native plants.

Short-Term Outcomes:

Outcomes for the University of Idaho native plant domestication project include publicly accessible information on landscaping with native plants and improved access to superior native plant products.

Activities:

Research activities will involve continued domestication activities. This will include collection of new species, evaluation for adaptation and value, mass selection strategies for improvement, and seed production/distribution.

Extension activities will include development of workshops and seminars specifically designed to educate the public to the value and use of native plants.

Milestones:

1. Submit a proposal to obtain funding for enhancing production of native plant breeder and foundation seed.
2. Become a member of the Idaho Horticulture Expo program committee in order to encourage continuation of appropriate educational opportunities.

Impact Statements:

Ultimately, this research project and accompanying educational activities have the potential to increase adoption of native plants as a part of water-conserving landscape systems. This will be a valuable, landmark repositioning of sustainable gardening and landscaping system. This work is publicly recognized and has been supported for five years by grants from the Idaho State Department of Agriculture Landscape and Floral Research Program. To date, over \$60,000 has been contributed. Currently, a contract is

being drawn up that will establish a partnership between the University of Idaho and an Idaho native plant nursery. This partnership will facilitate commercialization and distribution of landscape-worthy native plants.

Publications:

Broderick, SR, MR Stevens, B Geary, SL Love, EN Jellen, RB Dockter, SL Daley and DT Lindgren. 2010. A survey of *Penstemon*'s genome size. *Genome* (In Press).

Love, SL and T Salaiz. 2009. Selectable variation among species and accessions of plants included in the Idaho Native Plant Domestication Project. Report of the Native Plants Cooperative 1:7-9.

Stevens, MR, B Geary, SR Broderick, BJ Ewell, RB Dockter, MA Mendenhall, SL Daley, JD Daley, TJ Mock and SL Love. 2009. Understanding *Penstemon* diversity in an effort to initiate a breeding program within the genus for urban landscapes of the Intermountain West. Report of the Native Plants Cooperative 1:4-6.

Love, SL. 2010. Penstemon spotlight – *Penstemon albomarginatus*. *Bulletin of the American Penstemon Society* 69:2-4.

WERA-1013 Station Report

Participants:

Dougher, Tracy (tracyaod@montana.edu) – Montana State University

Accomplishments:

- Presented on Native Sod Production at the Wyoming Growers Conference in Casper, WY February 17-19, 2010.
- Made presentations to local growing groups, the Gallatin Valley Garden Club on Propagation of Perennials and Cashman's Nursery on Native Perennials.

Short-term Outcomes: These presentations gave both commercial growers and home gardeners exposure to native plants. Several home gardeners are altering their landscapes to include more native plants to reduce water consumption in their landscape.

Outputs: Montana master gardeners researched information on the habitat and known growth habits of Montana native plants. They are producing plant labels for the experimentation/demonstration garden on native perennials.

Activities:

- Worked with a sod grower on an experiment evaluating the composition and feasibility of native grass sod.
- Planting beds were established for experiments evaluating the water use of several native Montana perennials for the home landscape. Master Gardeners were involved in the establishment of the native perennial beds and initial collection of plant data.

Milestones: The WERA 1013 website went online and initial information for the site was gathered.

Impact Statements:

Tracy Dougher and Casey Delphia completed the Montana Native Plant Society grant " Backyard conservation: Evaluation of Montana native perennials for water savings and pollinator attraction.", 1 year (\$1000)

Publications:

L. Stott, L. Rew, and T.A.O. Dougher (2010) Native Multispecies Sod: An Alternative Rehabilitation Method for Disturbed Lands. *Restoration Ecology*. 18(5):742.

SAES-422 – Heidi Kratsch, UNCE, Reno, Nevada

Accomplishments:

Developed an educational website and an e-journal for publication of our respective findings. We also developed a template for introducing new native plants for consideration by the industry.

Short-term Outcomes: Morphological and Genetic Variation Among Selected *Sphaeralcea*: Industry professionals can select a regionally appropriate *Sphaeralcea* species that is stable genetically to result in increased plant landscape performance and consumer confidence in the native plant production industry.

Outputs:

Conclusions from our study: Out of four prevalent *Sphaeralcea* in Utah, only three are distinct. *S. coccinea* is genetically stable as a species as determined by Amplified Fragment Length Polymorphism (AFLP) analysis. *S. munroana* and *S. parvifolia* are ecotypes of a single species. *S. grossulariifolia* either has not yet completely speciated, or alternatively, represents cross-hybridization between the other two.

Activities: Specifically, I have mentioned the usefulness of selected native plant species in helping to achieve landscape water efficiency in the Introduction to Horticulture class I teach for USU and in master gardener trainings I've done at USU and now at UNCE.

Milestones: We developed a "speaker's bureau" for our project, and that we all are working on securing speaking engagements for our members in our respective states. Several of us have been asked to present at various state nursery and landscape association meetings. Specifically, I will be speaking at the Idaho Nursery and Landscape Association annual meeting, and the Nevada Landscape Association meeting [Water Friendly Landscaping track], in January 2011.)

Impact Statements:

Morphological and Genetic Variation Among Selected *Sphaeralcea*: As a result of this work, industry professionals have a greater palette of regionally appropriate native plant species that will enhance public acceptance of drought-tolerant plants for landscape use.

Publications:

Beddes, T. and H.A. Kratsch. 2010. Nodulation of Seaside Alder Topdressed with Controlled-release Fertilizer. HortTechnology 20(4): 740-745.

Note: No formatting (bold, italic, indentation, bulleting, etc.) is preserved.

Annual Progress Report to the WERA 1013 29 November 2010

Participants:

Rupp, Larry A. (Larry.Rupp@usu.edu) – Utah State University

Accomplishments:

Steve Love and I are currently working in the leadership of the Intermountain Native Plant Growers Association to facilitate the profitability and production of native plants within the nursery industry in the intermountain area.

Short-term Outcomes:

None

Outputs:

Richards, M.R. 2010. Selecting and Propagating Clones of Bigtooth Maple (*Acer grandidentatum* Nutt.). Thesis. Utah State University.

Rupp, L.A., W. A. Varga, and D. Anderson. 2010. Selection and Vegetative Propagation of Native Woody Plants for Water-Wise Landscaping. Proceedings of the 16th Wildland Shrub Symposium. May 2010, Utah State University. (in press)

Rupp, L.A. and W. A. Varga. 2010. Locating, Documenting, and Collecting Clones of Native Utah Plants. Annual Report to the Utah Department of Agriculture and Food Specialty Crop Block Grant Program.

Rupp, L.A. and D. Anderson. 2010. Propagating Superior Clones of Native Utah Plants for Use in the Landscape Industry. Annual Report to the Utah Department of Agriculture and Food Specialty Crop Block Grant Program.

Activities:

Our work at Utah State University is primarily focused on identifying and clonally propagating unique specimens of native plants with potential for use as water conserving landscape plants. Key programs have focused on selection and asexual propagation of *Acer grandidentatum* and development of seed-propagated *Epilobium canum* as a landscape perennial.

Milestones:

N/A. Within our own work we have reached a milestone in developing a means of propagating bigtooth maple by cuttings.

Impact Statements:

The ultimate goal of our program is to assist local growers in being able to propagate and grow native plants with potential for use in water conserving landscapes. To that end we have successfully selected several clones of *Acer grandidentatum* and have developed a protocol for successfully propagating it by budding and/or cuttings. This project has advanced to the point that J. Frank Schmidt & Sons nursery has tested some selections in their nursery and we will be evaluating some of their nursery stock under Utah conditions in 2010. Our next step is to develop a means of maple propagation using mound layering as a low-tech means for Utah growers to clonally produce high value plants. This pattern of research is being used with other plants as well, but they are not as far along. Those plants we are currently working with include *Juniperus osteosperma*, *Acer glabrum*, *Fraxinus anomala*, *Ceanothus velutinus*, *Ericameria spp.*, *Cercocarpus intricatus*, *Mahonia repens*, and *Arctostaphylos patula*. There were no new grants funded for 2010.

WERA-1013 Station Report

Participants:

Panter, Karen (kpanter@uwyo.edu) – University of Wyoming (UW)

Accomplishments:

The University of Wyoming's short-term contribution to this effort is hosting the web site (<http://www.uwyo.edu/wera1013/>). The site has various components, some of which are still under construction, but it has been opened up for general use. The site currently lists members of the WERA1013 committee, as well as industry and federal partners. A native plant list has been started with some containing plant descriptions and production information; most simply have a photo and Latin name. A grower list has been added and links to other pertinent web sites will be added as time goes on.

Short-term Outcomes:

The web site provides information for enhanced production of various native plants in the intermountain west. This will result in reduced losses and costs for commercial growers and increased success in producing these plants. Consumers will also benefit from the web site with increased knowledge of native plants available and their general care requirements. Higher success rate in growing plants on the consumer end will result in decreased costs to them for replacement plants.

Outputs:

Annual reports of the WERA-1013 committee are accessible on the web site. The site also provides, or will provide, information and publications available on growing and using various native plants.

Activities:

Activities of the web site sub-committee are ongoing as the site needs consistent updating and maintenance. We are able to do this with the assistance of Randy Anderson, the UW College of Agriculture and Natural Resources Communications and Technology web site coordinator.

Milestones:

The web site is an ongoing project.

Impact Statements:

Since the web site just opened to the public in mid-November, we have not been able to track hits.

Publications: The current publication is the web site: www.uwyo.edu/wera1013.