Title: Improvement and Propagation of Native Plants for Water-Conserving and Traditional Landscapes

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Abstract

This project is designed to provide domesticated, improved native plants to the Idaho nursery industry for use in water-conserving landscapes. The project has been ongoing sincle 2005 and significant advancements have been made with regard to discovery and improvement of superior plant materials. In 2011, significant steps were taken to resolve the single largest remaining issue for the project, that being the development of a viable marketing stream. To resolve this roadblock, a partnership agreement was developed between the University of Idaho and Conservation Seeding and Restoration (CSR) of Kimberly, Idaho. CSR will work with the University of Idaho to bring improved native plants to market under the umbrella of a new company called 'Native Roots'.

Strong advances also continued under plant development research objectives. The process of producing breeder seed increases was streamlined in 2011. Weed barrier and drip irrigation were installed. Equipment for cleaning and conditioning seed was purchased and set up. Additional plant species were graduated from the evaluation phase and moved into the seed increase plots. A mist chamber was built and propagation initiated on plant species whose growth characteristics make them more suitable for vegetative increase. Sixty-seven new accessions of native plants were successfully germinated and transplanted into the evaluation plots. The approximately 400 accessions of plants established during previous years were subjected to rigorous evaluation to determine horticultural value. Superior accessions were retained in the plots and seed collected from the best plants within each accession for the purpose of initiating a second cycle of selection and/or to provide propagation material for establishing seed increase plots. Some plant scouting was completed and new accessions of native species were personally collected or purchased from second-party collectors. New emphasis was placed on obtaining new plants for evaluation due to the establishment of the CSR partnership and the consequent need for a constant supply of new plant materials.

Objectives

This project is guided by three major objectives:

1) Evaluate native and adapted species of plants for use in traditional and water-conserving landscapes in order to enhance the diversity of available material.
2) Develop and release new landscape-worthy plants in the form of trees, shrubs, and perennials for use by the Idaho landscape industry.
3) Commercialize sources of attractive and useful native plants and make them available for use by Idaho landscape nurseries.

The eventual and ultimate goal of the native plant domestication project is to develop unique plant materials that will attract new consumers and help make Idaho nurseries more competitive and profitable, especially, but not limited to, nurseries specializing in the production and sale of plants for sustainable landscapes. This document summarizes continuing efforts to evaluate and develop new plant materials and also reports significant progress in establishing a commercialization stream for new native plants.

Accomplishments

This ISDA grant is central to the development of native plant materials for infusion into the Idaho landsape nursery industry. In 2011, the amount of money requested and allocated by ISDA for this research was considerably higher than in past years. This was the direct result of a need to replace reduced salary resources available from the College of Agricultural and Life Sciences. During the past year, aggressive efforts were made to find supplemental funding sources to enhance the native plant domestication project and extend the dollars provided by ISDA. For 2012, a private company has agreed to pick up a significant portion of the salary needs for the project, allowing for a reduction in the 2012 salary request from ISDA. Additionally, $49,770 was acquired from the Idaho State Board of Education to help support this project. These one-time capitol-outlay funds were used to purchase seed cleaning and field production equipment. These essential items will vastly improve the efficiency of the selection and seed increase processes. These sources of support are supplemental to the ISDA funding and will make the project more productive in the foreseeable future.

Commercialization and Exploitation Activities

Methods: Viable options for establishing a sustainable commercialization stream for new native plant products were explored through discussions with Idaho nursery owners, members of the Intermountain Native Plant Growers Association, representatives of the Colorado Plant Select program, and knowledgeable representatives of western Universities. In making a final decision on commercialization procedures, strong emphasis was placed on keeping industry cooperation and benefit within the state of Idaho. At the same time, an attempt was made to find cooperators with knowledge of native plant production, existing propagation and seed handling expertise and

capabilities, wholesale and possibly retail business experience, and an understanding of the native plant landscape industry.

Big-fruited evening primrose (*Oenothera brachycarpa*), one of the species delivered to CSR for commercialization.

Results: The Kimberly, Idaho company called Conservation Seeding and Restoration CSR) was identified as a possible commercialization partner for the native plant domestication project. Company owners expressed interest in marketing improved plants. Available personnel and resources within CSR met all criteria for success. In the spring of 2011, the University of Idaho, Office of Technology Transfer signed a marketing partnership agreement with CSR. The company subsequently spun off a subsidiary called 'Native Roots'.

In April, 2011, propagules of 68 accessions of native plants, representing 58 species of shrubs and herbaceous perennials were transferred to CSR (see the list in Table 1). The company grew out the material and by fall had planted seedlings at a dedicated seed increase facility in Filer. This material will provide the beginning point for marketable quantities of selected native plant materials.

Table 1. List of plants transferred by the University of Idaho to 'Native Roots' for propagation and commercial exploitation.

Species	**Origin**	**Horticultural Properties**
Penstemon ambiguus	*Collected*: Coconino Co, AZ *Endemic*: Southwestern US	Bushy habit. Light pink flowers, phlox-like flowers. Selection based on hardiness.
Penstemon barbatus	*Collected*: Unknown *Endemic*: Southwestern US	Very tall, upright habit. Bright red flowers. Selection based on high numbers of flower spikes and dark colored flowers.
Penstemon cardinalis	*Collected*: Lincoln Co, NM *Endemic*: NM, west Texas	Medium height, upright habit. Dark red flowers. Selection based on longevity and bloom profusion.
Penstemon confertus	*Collected*: Unknown *Endemic*: Northwestern US	Short, habit growth. Light to medium yellow flowers. Selection based on alkaline soil adaptation and dark flower color.
Penstemon cyananthus	*Collected*: Caribou Co, ID *Endemic*: Northern US Rockies	Medium height, upright habit. Dark blue flower color. Selection based on longevity and bloom profusion.
Penstemon humilus	*Collected*: Custer Co, ID *Endemic*: Western US	Small, spreading habit. Medium to dark blue flowers. Selection based on compact growth, dark blue flower color.
Penstemon idahoensis	*Collected*: Cassia Co, ID *Endemic*: ID, UT	Small, low-spreading habit. Dark blue flowers. Selection based on flower profusion.
Penstemon labrosus	*Collected*: San Bernardino Co, CA *Endemic*: Southern CA	Tall, upright habit. Bright orange flowers with long petal lobes. Selection based on consistent orange flower color.
Penstemon linarioides	*Collected*: Lincoln Co, NV *Endemic*: Southern US Rockies	Dense mat habit. Medium blue flowers. Selection based on hardiness, longevity, and long bloom period.

Penstemon montanus	*Collected*: Lemhi Co, ID *Endemic*: Northern US Rockies	Short, spreading habit. Large lavender flowers. Selection based on plant health and bloom profusion.
Penstemon ovatus	*Collected*: Western Cascades *Endemic*: WA, OR	Medium height, upright habit. Small medium blue flowers. Selection based on alkaline soil adaptation and repeat bloom.
Penstemon platyphyllus	*Collected*: Salt Lake Co, UT *Endemic*: UT	Medium height, bushy habit. Light purple flowers. Selection based on resistance to powdery mildew and bloom period.
Penstemon pinifolius	*Collected*: Unknown *Endemic*: AZ, NM	Small, bushy growth. Medium to dark red flowers. Selection based on dark flower color, length of bloom period, and health.
Penstemon richardsonii	*Collected*: Eastern Cascades, WA *Endemic*: WA, OR	Medium height, open spreading habit. Light pink flowers. Selection based on bloom density and length of bloom period.
Penstemon rostriflorus	*Collected*: Beaver Co, UT *Endemic*: Southwestern US	Medium height, spreading habit. Red flowers. Selection based on dark red flower color, compact habit, and long bloom period.
Penstemon sepalulus	*Collected*: Utah Co, UT *Endemic*: UT	Medium height, bushy habit. Light lavender flowers. Selection based on extended bloom period.
Penstemon strictus	*Collected*: Torrance Co, NM *Endemic*: Central Rockies, CA	Medium height, upright habit. Dark blue flowers. Selection based on resistance to powdery mildew and dark flower color.
Penstemon venustus	*Collected*: Unknown *Endemic*: Northwestern US, UT, CA	Medium height, bushy habit. Light to medium purple or blue flowers. Selection based on flower color, resistance to mildew.
Penstemon whippleanus	*Collected*: Unknown *Endemic*: Intermountain West	Medium height, upright habit. White to dark purple flowers. Selection based on compact growth and very dark flower color.
Eriogonum brevicaule	*Collected*: Sanpete Co, UT *Endemic*: Northern Rockies, Plains	Small, mound to spreading habit. Dark yellow flowers. Selection based on flower profusion, long bloom, and long peduncles.
Eriogonum compositum	*Collected*: Washington Co, ID *Endemic*: Northwestern US, CA	Medium size, spreading habit. Dark yellow flowers. Selection based on flower profusion and reddish leaf color.
Eriogonum corymbosum	*Collected*: San Juan Co, UT *Endemic*: South & Central Rockies	Medium size, bushy habit. White to pink flowers. Selection based on dense, compact growth.
Eriogonum heracleoides	*Collected*: Fremont Co, ID *Endemic*: Western US	Medium size, upright habit. Creamy-white flowers. Selection based on inflorescence size and leaf hardiness.
Eriogonum jamesii	*Collected*: Unknown *Endemic*: Central Rockies	Medium size, spreading habit. *E. arcuatum* form with bright yellow flowers. Selection based on large flower heads.
Eriogonum jamesii	*Collected*: Unknown *Endemic*: Southwest US, OK	Medium size, spreading habit. Var. *jamesii* form with cream flowers. Selection based on red leaf color and late bloom period.
Eriogonum niveum	*Collected*: Unknown *Endemic*: ID, OR, WA	Medium size, bushy habit. White flowers. Selection based on compact form, heavy bloom, and adaptation to alkaline soil.
Eriogonum ovalifolium	*Collected*: 1. White Pine Co, NV 2. Idaho Co, ID *Endemic*: Western US	Very small, mat to spreading habit. White flowers fade to red. Two forms selected: 1. Var. *nivale* selected for dense silver leaves. 2. Var. *purpureum* selected for leaf health, silver leaf color.
Eriogonum strictum	*Collected*: Idaho Co, ID *Endemic*: Northwestern US, CA, NV	Medium height, spreading habit. White, yellow or pink flowers. Selection based on healthy leaves, pink flower color, compact growth.
Eriogonum umbellatum	*Collected*: 1. Custer Co, ID 2. San Bern. Co, CA 3. Beaver Co, UT 4. Owyhee Co, ID 5. Unknown 6. Fremont Co, ID *Endemic*: Western US	Medium height with upright, mounding, or spreading habit. Light to dark yellow flowers. Six forms selected: 1. Var. *dichrocephalum* selected for flowers that age red. 2. Var. *munzii* selected for late bloom and bloom profusion. 3. Dwarf form selected for dense habit and repeat bloom. 4. Var. *ellipticum* selected for profuse late season bloom. 5. Giant mound form selected for foliage density, profuse bloom. 6. Var. *dichrocephalum* selected for dwarf form, red flowers
Agastache cusickii	*Collected*: Custer Co, ID *Endemic*: ID, MT, OR, NV	Small, upright habit. White to pink flowers. Selection based on compact, dwarf form and pink flower color.

Monarda menthaefolia	*Collected*: Unknown *Endemic*: Western and Central US	Medium height, upright to spreading habit. Dark purple flowers. Selection based on dark purple flower and seed head color.
Aster speciosus	*Collected*: Caribou Co, ID *Endemic*: Intermountain West	Medium height, bushy habit. Medium purple flowers. Selection based on flower profusion, flower size, and length of bloom period.
Gaillardia aristata	*Collected*: 1. Beaverhead Co, MT 2. Unknown *Endemic*: Northern & Western US	Medium height, spreading habit. Yellow to red flowers. Two forms selected: 1. Large dark red flowers with upright habit. 2. Small yellow and orange flowers with spreading habit.
Erigeron glaucus	*Collected*: Unknown *Endemic*: OR, CA	Small, mound habit. Dark purple daisy flowers. Selection based on hardiness, compact habit, and adaptation to alkaline soils.
Hymenoxys acaulis	*Collected*: 1. Emery Co, UT 2. Unknown *Endemic*: Eastern Rockies, Plains	Small, upright habit. Bright yellow daisy flowers. Two forms selected: 1. Dwarf form selected for longevity and bloom profusion. 2. Tall form selected for hardiness and bloom profusion.
Townsendia incana	*Collected*: Garfield Co, UT *Endemic*: Intermountain West	Small, mound habit. White daisy flowers. Selection based on longevity, plant health, and bloom profusion.
Zinnia grandiflora	*Collected*: Fremont Co, CO *Endemic*: Southwestern US, OK, KS	Small, mound habit. Dark yellow flowers. Selection based on non-spreading growth, abundant flowers, and orange flower centers.
Calylophus lavandulifolia	*Collected*: White Pine Co, NV *Endemic*: Southwestern US, Plains	Small, prostrate habit. Large, crinkled yellow flowers. Selection based on longevity, compact growth, and flower profusion.
Oenothera brachycarpa	*Collected*: Unknown *Endemic*: Southwestern US, KS	Small, mound habit. Very large lemon-yellow flowers. Selection based on longevity and hardiness.
Aquilegia chrysantha	*Collected*: Unknown *Endemic*: Southwestern US	Tall, upright habit. Yellow flowers with long spurs. Selection based on healthy leaves, compact growth, and flower profusion.
Aquilegia desertorum	*Collected*: Unknown *Endemic*: UT, AZ, NM	Medium height, spreading habit. Dark yellow/red flowers with long spurs. Selection based on dark bloom color and flower profusion.
Aquilegia formosa	*Collected*: Twin Falls Co, ID *Endemic*: Western US	Tall, upright habit. Yellow/red flowers with short spurs. Selection based on dark bloom color and flower profusion.
Aquilegia scopulorum	*Collected*: White Pine Co, NV *Endemic*: Central Rockies	Very small, mound habit. Blue/white flowers with long spurs. Selection based on dark bloom color and short flower stalks.
Geum rossii	*Collected*: Box Elder Co, UT *Endemic*: Intermountain West	Short, spreading habit. Bright yellow flowers. Selection based on season-long attractive foliage and recurring bloom.
Mirabilis multiflora	*Collected*: Unknown *Endemic*: Southwestern US	Short but very broad-spreading habit. Dark purple flowers. Selection based on dark bloom color and reddish-hued leaves.
Papaver radicatum	*Collected*: Unkown *Endemic*: Intermountain West	Short, upright habit. Bright orange flowers. Selection based on longevity and flower profusion.
Potentilla thurberi	*Collected*: Unknown *Endemic*: AZ, NM	Medium height, spreading habit. Dark red flowers. Selection based on dark color, compact branching, and alkaline soil adaptation.
Sphaeralcea caespitosa	*Collected*: Millard Co, UT *Endemic*: UT, NV	Small, prostrate habit. Bright orange flowers. Selection based on silver leaf color and flower size.
Zauschneria garrettii	*Collected*: Cache Co, UT *Endemic*: Rocky Mountains	Medium height, spreading habit. Dark orange flowers. Selection based on bloom period, dark bloom color, and ease of propagation.
Deschampsia caespitosa	*Collected*: Connecticut *Endemic*: Western & Northern US	Medium height, spreading habit. Sparkling flower spikes. Selection based on leaf health, spike abundance, and purplish leaf color.
Festuca idahoensis	*Collected*: Unknown *Endemic*: Western US	Small, flaring habit. Amethyst flower spikes. Selection based on blue leaf color, longevity, and clump health.
Poa secunda	*Collected*: Sherman Co, OR *Endemic*: Western US, Plains	Medium height, very upright habit. Persistent flower spikes. Selection based on blue leaf color and dense flower spikes.
Sporobolus wrightii	*Collected*: Unknown *Endemic*: Southwestern US, UT	Very tall, upright habit. Late, feathery flower spikes. Selection based on spike profusion, hardiness, and dark green leaf color.
Artemisia frigida	*Collected*: Box Elder Co, UT *Endemic*: Western & Central US	Small, spreading habit. Attractive foliage, inconspicuous flowers on short spikes. Selection based on season-long attractive foliage.

Chamaebatiaria millefolium	*Collected*: Bingham Co, ID *Endemic*: Intermountain West, OR	Medium height woody shrub. White flowers, copper seedheads. Selection based on plant health and compact habit.
Clematis columbiana	*Collected*: Garfield Co, UT *Endemic*: Rockies, Northwest US	Scrambling short vine. Purple-red leaves. Light purple flowers. Selection based on transplant survival and flower profusion.
Philadelphus lewisii	*Collected*: Washington Co, ID *Endemic*: Northwestern US, CA	Tall upright shrub. Large white flowers. Selection based on alkaline soil adaptation, compact growth, and flower profusion.
Rhus trilobata	*Collected*: Boise Co, ID *Endemic*: Western US, Plains	Arching to prostrate shrub. Orange fall leaf color. Selection based on fall leaf color, prostrate habit, and foliage density.
Salvia pachyphylla	*Collected*: San Bernardino Co, CA *Endemic*: AZ, NV, CA	Short spreading evergreen shrub. Dark blue/purple flowers in large clusters. Selection based on compact habit and long bloom period.

Improvement of UI Seed Increase Facilities and Protocols

Methods: Using a grant from the Idaho State Board of Education, seed increase plots were improved by the addition of weed barrier and drip irrigation. This funding source also provided for the purchase of equipment to set up a seed cleaning and conditioning lab at the Aberdeen R & E Center. Lastly, a mist chamber was constructed to provide vegetative propagation capability for some superior plant accessions. These advancements in facilities and resources will markedly improve the capabilities of program personnel to domesticate and commercialize new plants.

Installation of weed barrier fabric and planting of new accessions in breeder seed plots

Following the completion of modifications to seed handling facilities and field resources, additional accessions of native plants were established in the increase plots at the Aberdeen R & E Center. In order to qualify for inclusion in the increase plots, an accession of a species must demonstrate exceptional horticultural value and show limited visible morphological variability. Seed for the increase plots was collected from eligible accessions in the fall of 2010. The seed was stratified, planted, and seedlings transplanted to the field in June of 2011.

Results: Seed increase plots were established in a one acre field on the Aberdeen R & E Center, beginning to 2009. By 2010, the number of accessions planted in increase plots was 89. Additions and replacements made in 2011 brought the total number of native plant selections under breeder seed production to127.

During the summer of 2011, the increase blocks were utilized to improve the uniformity and performance of selected plant materials. Off-type or poor-performing plants were removed. Many of the accessions planted in 2009 and 2010 produced good quantities of breeder seed. During the winter months, this seed will be cleaned and prepared for delivery to CSR.

New accessions established in increase blocks included selections from the following species:

Desert columbine (*Aquilegia desertorum*) is shorter and more compact than western red columbine with somewhat tangled and sprawling flower stems. It has the same beautiful red and yellow flower color and makes a great bed or border plant.

Fringed sage (*Artemisia frigida*) is a remarkable dwarf shrub that is very hardy and drought tolerant. In appearance, it looks like a combination of dwarf sagebrush and the common nursery plant sometimes called silver sage. It has habit and appearance that makes it suitable for either formal or informal gardens.

Frilly leaves and compact nature of fringed sage (*Artemisia frigida*)

Arrow-leaf buckwheat (*Eriogonum compositum*) is a common plant of the Hell's Canyon area. It is very long-lived and tough. It has unusually large leaves for a wild buckwheat. The leaves are often tinged with red. In early summer, one to two foot stems emerge from the plants, topped by dark yellow flowers. This plant is a conversation piece for the low-water garden.

Snow buckwheat (*Eriogonum niveum*) produces interesting, fuzzy silver leaves that are very attractive all summer. Towards the end of summer, hundreds of flower stems emerge and small white flowers cover the plant into late fall. This is a very unique and beautiful plant that is at its best when many other plants look old and tired.

Desert four o'clock (*Mirabilis multiflora*) is similar in many respects to its annual cousin the common four o'clock. It has similar large tubular purple flowers and the same afternoon flowering habit. In contrast, this plant is perennial and

very drought tolerant. It can become very large, often sprawling to a diameter of 10 feet.

Scarlet penstemon (*Penstemon labrosus*) is a tall upright plant similar in form to the beardlip penstemon. Its uniqueness comes from it remarkable orange-red flower color that is unique within the genus. The flowers also have unusually long, narrow lobes. Penstemons in general are remarkable garden plants and this is one of the best.

The small cushion form and white spring flowers of Mountain Townsend's daisy (*Townsendia*

Mountain Townsend's daisy (*Townsendia montana*) is a compact little beauty. It grows into a cushion only 3 inches tall and 8 inches across. In spring and early summer, it is covered with white or light pink daisy-like flowers. The plant is attractive whether in or out of bloom.

Firechalice (*Zauschneria garrettii*) is one of the few native plants that is considered truly everblooming. The bright red tubular flowers appear in June and go on and on until frost.
It is a hummingbird magnet, as well.

Long-blooming tubular flowers of firechalice (*Zauschneria garrettii*).

Desert zinnia (*Zinnia grandiflora*) slowly creeps and expands in size to fill in a flower garden. The bright yellow to yellowish-orange flowers come on during summer but last until hard frost. Although in the daisy family, the flowers do not have typical daisy form, but rather have few broad petals. The plants are short, making them very effective in a rock garden or the front of a bed or border.

Ongoing Evaluation of Native Plant Accessions:

Methods: Evaluations were continued on 3 acres of plant materials established in the years 2006 to 2010. Observations were recorded on hardiness, adaptation, mature appearance, flowering period, and horticultural value. Two difficult environmental factors were imposed on these plants. First, they were planted in a moderately heavy silt-loam soil with a high pH (8.2). Also, these established plots were irrigated with only 25 to 30% of the amount of water (based on evapotranspiration) typically used to maintain a bluegrass lawn in SE Idaho. On average, six inches of supplemental (above natural precipitation) water was applied to the plots over the period June to September. These

conditions provided opportunity for selecting plants that can thrive in southern Idaho water-conserving gardens.

Results: In 2011, herbicide injury in the plots limited the amount of selection that could be completed. The damage was especially significant among species in the mint, penstemon, and columbine genera. Other species showed limited injury and adequate seed production, allowing for elimination, selection, and seed collection.

Where possible, inferior or marginal plant materials were selectively eliminated to make room for new plants. Entire accessions or plants within accessions were eliminated if they showed excessive winter injury, weakened growth due to lack of adaptation to soil or climate, poor flowering characteristics, unsightly appearance during any part of the growing season, disease or pest susceptibility, or any other inferior horticultural trait.

By the end of the summer in 2011, the number of accessions retained in the evaluation plots had declined to just under 400. All of these remaining accessions have potential value for the landscape nursery industry.

Plant Collection and Establishment:

Methods: no intensive scouting and collection efforts were employed within a region of the state, collections were made in at a number of sites and many new species were purchased from second party collectors.

In March 2011, seed was mixed with moist potting soil/sand, placed in Ziploc bags, and stratified for approximately two months at 40^0 F. In March, seed was planted in flats and allowed to germinate in a greenhouse at the Aberdeen R&E Center. When plants were 3-4 weeks old, a maximum of 40 plants from each seed lot were teased out of the flats and planted into individual cells of cone flats. In June, plants were transplanted to the field on the Aberdeen R&E Center. Less than 1/4 acre of land was required for establishment of 2010 accessions.

Plant establishment practices were designed to mimic nursery handling procedures. The intent was to provide selection pressures that give preference to plants capable of thriving through typical production and transplanting procedures. Detailed notes were maintained on germination and survival during establishment.

Results: Collection activities were renewed to some degree during fall and early winter of 2010. One-hundred thirty-five new accessions were collected and in June 67 of these species were successfully established in the evaluation plots. New accessions of the

following genera were established: *Penstemon, Eriogonum, Castilleja, Hymenoxys, Townsendia, Monardella, Heuchera, Phlox, Oenothera, Sedum, Calylophus, Cercocarpus, Amorpha, Opuntia, and Echinocereus.*

Vegetative Propagation:

Methods: In 2011, a new mist chamber was constructed in a greenhouse facility at the Aberdeen R & E Center. The chamber was used to propagate and test propagation methods for several of the superior woody and herbaceous accessions in the evaluation plots. Stem cuttings were treated with rooting hormone and placed under mist in a medium consisting of 9 parts perlite and 1 part peat moss.

Results: Large numbers of superior woody and herbaceous accessions were rooted and successfully established in pots. Species successfully propagated include *Rhus trilobata, Symphoricarpos albus, Penstemon fruticosus. Zauschneria garrettii,* and *Aquilegia scopulorum.* One notable failure was the inability to vegetatively propagate a unique and attractive plant of serviceberry (*Amelanchier alnifolia*).

Expenditure Report

Category	Amount Allocated	Amount Expended
Salaries, wages and fringe benefits	$17,450	$17,426
Travel for marketing activities	$ 1,100	$ 1,100
Seed, pots, trays, labels, soil mix, etc	$ 1,400	$ 1,400
Field charges, local motor pool, seed	$ 2,800	$ 2,800
Total funds allocated	$22,750	
Total expensed to date		$17,426
Amount remaining as of 3 Jan 2011	$ 24	