

2014 Annual Report

Alaska Department of Natural Resources - Division of Agriculture
Plant Materials Center

"To promote and encourage development of an agriculture industry in Alaska."



The 405 acre Plant Materials Center near Palmer, Alaska was established by the State Legislature in 1972 to promote the State's agricultural industry in accordance with Alaska Statute 03.22.10. The Plant Materials Center's core services are to:

- Develop seed and plant materials suitable for Alaska growers
- Provide recommendations for erosion control, seed production, and revegetation throughout Alaska
- Act as the repository for Alaska developed crops and varieties
- Maintain the State's certified seed laboratory for commercial and regulatory seed quality testing
- Maintain and produce an adequate number of varieties of seed potatoes for seed growers
- Provide information and recommendations on invasive plant and agricultural pest management



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Overview

2014-2015 Enacted Operating Budget

Fiscal Year 2014 Operating Budget: \$2,734.9 M

General Fund.....	\$2,066.6
Federal Receipts	\$372.0
CIP Receipts	\$186.0
Interagency Receipts	\$67.8
State Designated Receipts	\$25.9
Program Receipts	\$16.6

Fiscal Year 2015 Operating Budget: \$2,631.0 M

General Fund.....	\$2,075.8
Federal Receipts	\$372.4
CIP Receipts	\$72.1
Interagency Receipts	\$68.1
State Designated Receipts	\$26.0
Program Receipts	\$16.6

Operating budget figures are provided here for the state fiscal years 2014 and 2015.

Other figures and activity described within this report cover the calendar year 2014.

Monthly General Fund Expenditures can be found in the Appendix.

Note: Calendar year 2014 monthly financial reporting can be found in the appendix on page 31.

Features

405 Acre Production Farm
150 Acres Active Production
9,000 ft² Greenhouse Production Space
3,000 ft² Seed Storage Facility

Nationally Certified Seed Laboratory
Soils Analysis Laboratory
In-Vitro Potato Production Laboratory
Commercial Seed Cleaning Facility

Programs

Ethnobotany Garden
Foundation Seed Production
Horticulture Evaluation
Invasive Plant and Agricultural Pest Management
Plant Pathology Laboratory
Potato Production and Disease Monitoring
Revegetation
Soil Conservation
Seed Laboratory
Seed Services:
 Seed Cleaning and Conditioning
 Foundation Seed Sales

2014 Program Revenue*

Seed Cleaning..... \$10,173
Potato Sales \$7,007 || Seed Sales | \$4,407 |
| Seed Lab Testing..... | \$1,613 |
| Certification | \$839 |

** Figures above denote 2014 calendar year.*

Staff: 13 Full-time, 10 Seasonal

Staff

Management

Blackburn, Brianne Natural Resource Manager
Carter, Robert Agronomist/Manager

Support Staff

Allen, Kimberly Publications Specialist
Holladay, Alicia Administration

Program Staff

Campbell, Bill (Retired).....Agronomist/Potatoes
Czapla, PhilAgronomist/Revegetation
Dinkel, CaseyAgronomist/Soil Conservation
Foreaker, Rusty Agronomist/Horticulture
Hunt, Peggy (Retired) Agronomist/Ethnobotany
Johnson, Peter Agronomist/Seed Cleaning & Conditioning
Mahlev, Lyubomir Agronomist/Seed Laboratory
Steinlage, ToddAgronomist/Pathology
Heather Stewart Natural Resource Specialist/Invasive Plants

Field Staff

Antoni, Gary
Baldwin, Gary
Barnes, Chris
Hamel, Rory
Keen, Mike
Lemay, John (Retired)

History

With support from the University of Alaska, conservation groups, and farmers, Governor Bill Egan signed into law a bill creating the Alaska Plant Materials Center in 1972. This legislation directed the Plant Materials Center to fulfill traditional agricultural responsibilities including providing technical reclamation assistance and developing plant varieties and techniques for revegetation and erosion control industries. Since then the Plant Materials Center has seen over 40 years of agricultural program growth in the areas of foundation seed production, horticultural crop development, improvement in erosion control technology, disease-free potato seed production, Arctic Genetic Resource collection and maintenance, certified seed analysis services, and statewide invasive plant and agricultural pest monitoring and management. These programs are centered on the 405 acre facility just outside of Palmer. Additionally, countless offsite trials, plantings, and observations have been made across the state in both traditional agricultural centers and remote locations.

Since the founding legislation, state and federal funds have supported the development of a 3,000 ft² seed storage facility (2001), a nationally certified Seed Analysis Laboratory (2003), an expanded administrative office with conference space (2004), a 3,500 ft² equipment maintenance building (2005), and both large and small-scale seed cleaning and conditioning houses. This development has allowed the Plant Materials Center to continue to support the agriculture industry with applied, Alaska-based information, technology, and services for over 40 years.



Ethnobotany Garden

The Ethnobotany Teaching Garden at the Plant Materials Center provides a space for the study of Alaska plants as food, medicine, and technology. The Plant Materials Center works with people throughout Alaska to learn about and plant their own Ethnobotany Garden for use in revegetation and reclamation. Technical assistance is available to government agencies, contractors, land users, and the general public.

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Native Plant Study

September 2013 — September 2014

Objective:

The Ethnobotany Teaching Garden at the Plant Materials Center was originally developed in 2006 through partnerships with the USDA and University of Alaska. The Ethnobotany teaching garden provides a place to enjoy learning about and identifying Alaska native plants for food, medicine, and technology. The garden showcases each cultural and ecological region in Alaska with physical features and native plants.

Approximately 200 different species of plants that have significant traditional or present uses have been planted in the garden. Informational signs are placed throughout the garden to educate users about the common, scientific, and native names, uses, and identifying features.

Funded by:

State of Alaska

Details:

Plant Materials Center staff developed and offered an in-depth study of individual Alaska native plants through ethnobotany class sessions that focused on the following learning objectives:

- Understanding the ecology, biology, and taxonomy of Alaskan plants
- Learning about modern and traditional food, medicinal, and technological uses for native plants
- Understanding the ethics of harvesting and gathering plants

Class participants were assigned two different native plants per month prior to class sessions where the group would discuss and document learning points in a plant study notebook. The class sessions involved hands-on demonstrations of plant identification and propagation as well as information on pests, diseases, and other plant facts.

Results:

A core group of about 25 individuals signed up and attended the native plant study classes. A total of 10 classes were held throughout the project time period.

Future Plans:

Due to staff retirement and program funding, no future plans are in place.

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Foundation Seed Production

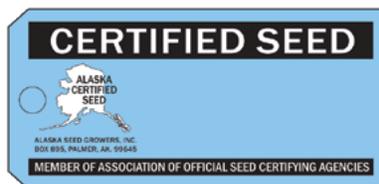
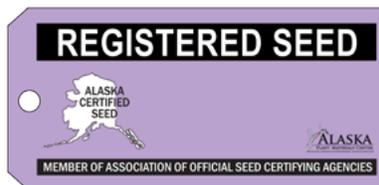
The Plant Materials Center's mission is to produce high-quality seed that is well-suited to Alaska's climate and soils, will produce economic benefits, and is available to commercial growers. The Foundation Seed Production program provides seed to producers for cultivar seed production. Certification assures that plants have been properly handled and meet the high standards of pedigree retention, varietal purity, and viability; and that they are free of weeds, diseases, and physical damage.

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Certified Seed Classes

2014 — Ongoing

- **Breeder Seed:** Seed or vegetative material directly controlled by the originating plant breeder, institution, or supplier of the source plants used for the initial and recurring increase of foundation seed.
- **Foundation Seed:** Seed that is the progeny of breeder seed. Production is carefully supervised to maintain specific genetic and physical purity.
- **Registered Seed:** Registered seed is the progeny of foundation seed and must be managed appropriately to maintain satisfactory genetic and physical purity.
- **Certified Seed:** Certified seed is the progeny of foundation or registered seed, which has the genetic and physical purity required for certification.



Foundation Seed Production

2014 Forb, Grass, and Grain Harvest

2014 — Ongoing

The Plant Materials Center planted, cultivated, rogued and harvested 25 different crops of forbs, grasses, and grains on the production fields during the 2014 growing season. The Plant Materials Center's flagship combine, Wintersteiger, continues to perform admirably, bringing seed cleaning features to the field. Crops harvested in 2014 are listed in **Table 1** below.

Table 1.

Forbs	Grasses
Jacob's Ladder	'Arctared' Fescue
Knik Iris	'Benson' Beach Wildrye
Kobuk Dwarf Fireweed	Cantwell Downy wildrye
Kotzebue Arctic Wild Chamomile	'Egan' American Sloughgrass
Oxytropis	Engmo Timothy
Plantago	Henderson Ridge Red fescue
Spirea	'Kenai' Polargrass
Twenty Mile Yarrow	Ninilchik Nootka alkaligrass
	Nelchina Spike trisetum
Grains	'Norcoast' Bering Hairgrass
'Bebral' Winter Rye	'Nortran' Tufted Hairgrass
'Ceal' Oats	'Nugget' Kentucky Bluegrass
'Ingal' Wheat	'Polar' Brome
'Nogal' Wheat	'Service' Big Bluegrass
'Toral' Oats	Solomon Thickspike Wheatgrass
'Vidal' Wheat	'Sourdough' Bluejoint Reedgrass
	'Wainwright' Slender Wheatgrass

Future Plans:

Foundation production fields will continually be regenerated and harvested to maintain genetic purity and seed production vigor. During the 2015 production season, all foundation level barley will be planted for regeneration.

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Buckwheat field at the Plant Materials Center.

Horticulture Evaluation

The Horticulture Evaluation Program was established at the Plant Materials Center in 2012 to develop new techniques and varieties for commercial plant production of horticultural crops in Alaska. These techniques for producing fruits, cut flowers, vegetables, and ornamental crops will be of value to commercial plant producers and end users in Alaska. The evaluation of pesticides and their use for commercial production is also conducted.

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Asparagus Specialty Crop Evaluation Trial

June 2014 — Ongoing

Objective:

Asparagus is a high-value specialty crop that could be valuable to market growers in Alaska. Currently, there is no published research on growing asparagus in Alaska.

Funded by:

Federal; US Department of Agriculture (USDA) and State of Alaska

Details:

The project will evaluate 15 hybrid varieties that are currently available. Asparagus is a crop that does not reach maturity for three years and has the potential to be marketable for 10-15 years. The goal of this project is to determine varieties that can survive in Alaska's climate and remain marketable. The evaluation trials have three sites in three different regions of Alaska; the Plant Materials Center, Nikiski and North Pole.

Results:

This project is ongoing and will continue until June 30, 2015.

Future Plans:

The plot will continue to be maintained throughout 2015 to collect data for a final report.

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Apple Rootstock Trial

July 2013 — Ongoing

Objective:

To evaluate apple rootstock varieties and production techniques for performance in Alaskan climates.

Funded by:

State of Alaska and Alaska Pioneer Fruit Growers Association

Details:

The apple rootstock trial is a collaborative project of the Plant Materials Center and the Alaska Pioneer Fruit Growers Association (APFGA). A one acre plot was fenced with materials supplied by the APFGA for the protection of the rootstock selections from moose damage. Every year new rootstocks are planted for evaluation. After each winter, selections are made for specimens that will be continued in the trial.

Results:

This trial is a three year agreement with the APFGA with the option to extend by both parties. A presentation on this trial is scheduled for the 2015 Alaska SARE Conference in Fairbanks.

Future Plans:

Horticulture Evaluation

Every year new collections of seedling rootstock will be incorporated into the trial, including specimens grown from collected seed and nursery stock. A two year report will be published in 2015.

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Broccoli Trial

April 2014 — August 2014

Objective:

The broccoli trial was conducted to study and determine varieties that will grow with vigor and produce well in Alaska's harsh climate.

Funded by:

State of Alaska

Details:

During the summer of 2014, a demonstration trial for broccoli cultivars and varieties was conducted at the Plant Materials Center. Ten cultivars and varieties of broccoli were planted into a randomized block design to evaluate quality, production, and maturity. The terminal heads were harvested and measured for size. The first year report is available online at <http://plants.alaska.gov/pdf/2014BroccoliTrial.pdf>. This trial will be replicated in 2015 for additional data collection.

Results:

Several cultivars were determined to be good selections for production in Southcentral Alaska. A final report will be published in 2015.

Future Plans:

This project will continue for several years. Additional data will be collected during harvest and results of each year will be compared and analyzed.

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Caneberry Variety Demonstration Trial

June 2014 — Ongoing

Objective:

To evaluate caneberry varieties and determine production techniques for successful performance and growth in Alaska.

Funded by:

State of Alaska

Details:

During the summer of 2014, a demonstration plot for caneberries was established at the Plant Materials Center. Nine varieties of raspberries were planted in a trellis system to evaluate survival, flowering, and fruiting. The varieties consisted of several fall and summer bearing raspberries. Varieties that have not been trialed in Alaska are being compared to those that perform well in Alaska. Three varieties of blackberries were also planted in the demonstration.

Results:

This demonstration is currently in progress and observations will be made during the 2015 growing season.

Horticulture Evaluation

Future Plans:

This project will continue in future years to observe and compare the varieties. Annual reports will be published beginning in 2015.

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Cauliflower Specialty Crop Trial

July 2014 — Ongoing

Objective:

This new trial will evaluate and determine what varieties can tolerate Alaska’s harsh environment and short growing season.

Funded by:

Federal; USDA

Details:

This trial will be conducted during the 2015 growing season. An observational variety trial will be conducted throughout the state with over 30 varieties of cauliflower. Multiple growers, regardless of farm size, will participate by planting, maintaining, collecting data, and photographing their crop. This information will be returned to the Plant Materials Center at the end of the growing season. Seed packs and trial data collection forms will be distributed to the participants. This project will introduce growers to new varieties, as well as older varieties they may not have tried.

Results:

This trial will begin in 2015.

Future Plans:

Acquire the seed for selected varieties and disseminate to growers throughout Alaska. Have all growers collect data throughout the growing season. Compile all data and present in a final report and presentation.

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Garlic Variety Evaluation Trial

September 2012 — July 2014

Objective:

To evaluate garlic varieties and production techniques for successful performance and growth in Alaska.

Funded by:

State of Alaska

Details:

A garlic variety evaluation trial was started at the Plant Materials Center during the fall of 2012. During 2012, 15 varieties were chosen and planted in the field. In fall of 2013, another 15 varieties were planted, some being duplicates from the previous year.

Results:

Due to the severe winter of 2012-2013 the Plant Materials Center experienced 100% loss of the crop. The location of the trial was moved to another area in the fall of 2013. This new location

Horticulture Evaluation

was protected from wind and could maintain snow cover. The results of the second year, however, were also unsuccessful with a 66.3% loss. It was determined that garlic was not an ideal crop for production at the Plant Materials Center without additional winter protection.

Future Plans:

A final report will be published in 2015.

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Asparagus starts in the greenhouse await transplant to the field.



Broccoli Trial at the Plant Materials Center.

Invasive Plant and Agricultural Pest Management

The Invasive Plant Program coordinates prevention, outreach, and management strategies for invasive plant issues through collaboration with land managers, agencies, organizations, and policy makers across Alaska. These efforts are guided by the implementation of its Strategic Plan and relevant noxious weed regulation and policy. The goal is to help keep Alaska's pristine landscapes and natural resources free from the impacts of noxious and invasive plants.

Canada thistle Management

2008 — 2016

Objective:

Effectively manage Canada thistle in Anchorage and treat it to background levels.

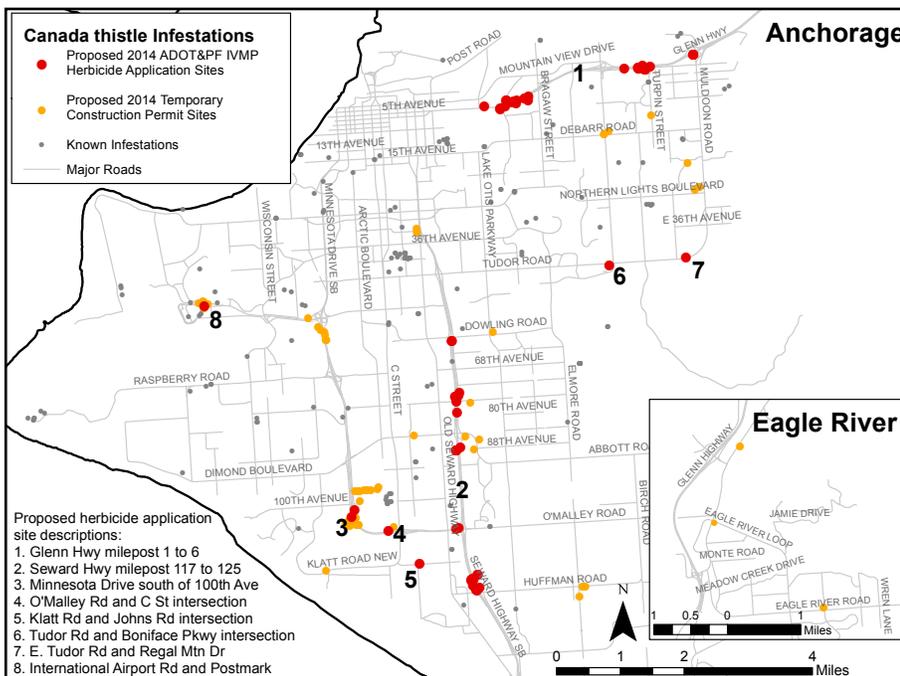
Funded by:

Federal; US Forest Service (USFS) and US Fish and Wildlife Service (USFWS) and State of Alaska

Details:

This project is located mostly in Anchorage where Canada thistle is found relatively widespread along roadsides, construction sites, abandoned landscaping, and unmaintained disturbed sites. Participants included Plant Materials Center employees and Chugach Yard Care, a contracted lawn care specialist. This project's goal is to contain and prevent this noxious plant from becoming an agricultural problem in the Palmer and Matanuska-Susitna Valley areas for commercial producers, and to bring awareness to other areas of the state for early detection and rapid response. Outreach included several Anchorage Daily News print and online ads throughout the growing season, an informational management hand-out for private property owners with infestations, and a permanent sign at the Anchorage Zoo. The Plant Materials Center also collaborated with the Kodiak and Palmer Soil and Water Conservation Districts and distributed grant funds to aid in treatment of Canada thistle infestations within their jurisdictions outside of Anchorage.

Results:



In 2014, 45 new and known Canada thistle infestation sites were managed (**Figure 1.**); 15 were in State-owned right-of-ways and treated with herbicides and 30 were mechanically or manually managed to prevent the spread of seed. Chugach Yard Care specialists were contracted through this program to utilize large boom sprayers and ATV boomsprayers to treat nine priority sites larger than a half acre. A total of 62 phone calls were received by the public reporting potential infestations; three of them resulting in finding new infestations in Anchorage. The Palmer SWCD managed a total of three infestations, and the Kodiak SWCD treated three new infestations, while

Figure 1.

Invasive Plant and Agricultural Pest Management

managing 13 total sites.

Future Plans:

Plans for 2015 include monitoring and managing the same Canada thistle infestation sites. This will be accomplished using herbicide (if needed) and by using mechanical methods where herbicides are not appropriate. Additional surveys in the Palmer area will be performed so the extent of Canada thistle is discovered and monitored in the Matanuska-Susitna Valley. Outreach and education will continue to become an integral part of finding new infestations to fully understand spatial extent in Alaska and to prevent accidental importation into the state.

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Statewide Elodea Mapping and Local Surveying

2014

Objective:

Generate and publish maps on the Plant Materials Center website depicting statewide elodea presence and absence. Survey for elodea infestations as they are reported.

Funded by:

State of Alaska

Details:

Received field reports of elodea surveys from collaborating agencies, soil and water conservation districts, and the general public. These surveys were compiled and entered into a GIS database to represent presence and absence of elodea throughout Alaska. The maps were then generated as downloadable PDF documents and uploaded to the Plant Materials Center website for public use.

When the public or other agencies report potential sightings of elodea, Plant Materials Center staff has, within their means, surveyed the reported site or waterbody. Surveys have been shared with Alaska Department of Fish and Game (ADF&G), USFWS, local soil and water conservation districts, Cooperative Weed Management Areas, and the general public. Preventive outreach materials and survey results are shared with those reporting elodea.

Results:

To date 2014, over 206 waterbodies throughout the state have been surveyed for elodea. Elodea was positively identified in 19 of those waterbodies. Eleven maps have been generated in six surveyed areas within the state.

In 2014, three lakes in the Anchorage area (DeLong, Little Campbell, and Sand Lakes) were systematically surveyed using a rake-throw sampling method at a point-intersection grid. Alexander Lake in the Matanuska-Susitna Valley was also systematically surveyed using the same method.

Future Plans:

The statewide distribution maps will be consistently updated as data is recorded. Additional surveys will be conducted as reports of suspected elodea presence is received from the public and agencies.

Invasive Plant and Agricultural Pest Management

Aquatic Invasive Species Trainings

2014

Objective:

Train outside agency field staff and the general public identification techniques for top priority aquatic invasive species for opportunistic surveys.

Funded by:

Federal; Natural Resource Conservation Service (NRCS)

Details:

A half-day training course offered throughout the year in collaboration with ADF&G invasive species coordinators. Trainings are typically conducted in the spring as field crews are preparing for the season. Training is free of charge and is available to the public and federal, state, and local agencies. Species addressed include those currently known to be in Alaska and those whose presence has not been detected but are high on agencies' priority lists for Early Detection Rapid Response. Best management practices including "Clean, Drain, Dry," suitable habitats, and field sampling protocols are also included in the training.

Results:

The first Aquatic Invasive Species Field Staff Training was conducted on April 8 at the Plant Materials Center. Nineteen participants from ADF&G, Alaska Bureau of Land Management (BLM), and USFS attended the half-day training on field identification, sampling, and best management practices for Alaska's aquatic invasive species. Participants also learned about seven other Early Detection Rapid Response aquatic invasive species potentially found in Alaska's waterbodies.

Two Aquatic Invasive Species Field Staff Trainings were conducted on the Kenai Peninsula, in Homer and Kenai on May 20-21, respectively. Over five groups had representatives present for the trainings, including ADF&G; Sportfish, Habitat, and Boating and Angler Access program; Homer Soil and Water Conservation District; Kachemak Bay National Estuarine Research and Reserve; Alaska Bioworks; and the Kenai Wildlife Refuge.

Future Plans:

Future class offerings are planned for different audiences in potentially different areas of the state. Additionally, a web-based course will be developed so that Plant Materials Center and ADF&G may present trainings more frequently and as a distance-learning tool for those in remote areas.

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Plant Pathology Laboratory

The Plant Pathology Laboratory at the Plant Materials Center provides diagnostic services and disease management support to the Plant Materials Center and the Division of Agriculture. Observed disease resistance and implemented management techniques are recorded throughout the variety trials for future reference.

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Technical Assistance

January 2014 — Ongoing

Objective:

Diagnosis, documentation, and management of plant diseases in agronomic and horticultural crops, including those grown at the Plant Materials Center and throughout the state.

Funded by:

Federal; USDA Cooperative Agriculture Pest Survey and State of Alaska

Details:

When growers suspect a plant disease, samples are submitted in person, by mail, as pictures, and occasionally by telephone description. Site visits are performed when possible. Diagnostic methods include nucleic acid based (PCR and real-time PCR), serological (ELISA and western blot), microscopy (stereoscope and compound), and media grow-out (selective and differential). Results are documented with photographs, micrographs, and an absorbance reader. Recommendations for treatment are provided to growers.

Results:

Site visits to multiple apple orchards discovered Fire blight (caused by *Erwinia amylovora*) in two newly planted orchards. Confirmatory testing supported the diagnosis. The bacteria was found in the highly susceptible variety 'Yellow Transparent' at both locations. Management recommendations were provided to the growers, including a list of varietal susceptibilities to aid in choosing more appropriate plants.

Several apple and pear producers experienced problems initially thought to be disease, but site visits found the likely cause to be mite infestations. The predominant species was European red mite (*Panonychus ulmi*), along with substantial numbers of two-spotted spider mite (*Tetranychus urticae*). Management recommendations were provided to the growers.

Peony growers submitted very few samples for Tobacco rattle virus (TRV) and Tomato spotted wilt virus (TSWV) testing in 2014, in part due to the large number submitted in 2013. The symptoms are fairly characteristic, and many growers had TRV in their plantings in 2013, so many growers "self-diagnosed" in 2014.

Growers from Southeast Alaska submitted samples of garlic cloves with eriophyid mites and suspected *Fusarium* sp. infection (when tested in the lab *Fusarium* was not found to be growing in cultures, however, the visible symptoms were consistent with *Fusarium* infection). Growers also sent photographs of bunching onions and beets with leaf spots. These were diagnosed as *Botrytis squamosa* and *Cercospora* leaf spot (*Cercospora beticola*), respectively. Extensive management recommendations were given to the growers.

Wheat fields were tested and found to be infected with loose smut (*Ustilago tritici*), recommendations were given to the grower.

Future Plans:

The lab will continue to offer diagnostic services and management recommendations for all crops throughout the state. Fire blight surveys will be conducted in orchards, as well as increased outreach to nursery and orchard communities to raise awareness and distribute management recommendations. More peony samples will be collected summer 2015 for both TRV and TSWV. Funding is through the Cooperative Agricultural Pest Survey (CAPS), through June 30, 2015. The sampling will be done in cooperation with growers, as well as Division of Agriculture staff. Mycotoxin testing of grains will continue to be offered to growers to ensure the safety of grain for human and animal consumption.

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Potato Disease Testing

March 2014 — Ongoing

Objective:

Provide disease diagnosis, management recommendations, and additional support as needed to potato growers.

Funded by:

State of Alaska

Details:

Most tasks were conducted at the Plant Materials Center and at the UAF Matanuska Experimental Farm. These projects provide educational opportunities for both Plant Materials Center staff and growers; to better recognize and manage disease issues.

Potato plants in the Plant Materials Center greenhouse were tested for six viruses and one viroid: Potato leafroll virus (PLRV), Potato virus A (PVA), Potato virus M (PVM), Potato virus S (PVS), Potato virus X (PVX), Potato virus Y (PVY), and Potato spindle tuber viroid (PSTVd). One hundred fifty-five composite leaf samples were taken.

Tissue culture plantlets, housed within the Plant Materials Center potato lab, were tested for the above six viruses, PSTVd, and bacterial contamination. A total of 232 individual samples were taken.

Potato plants from the Plant Materials Center field and growers' fields were tested for three viruses: PLRV, PVX, and PVY. Two hundred fifty-eight composite leaf samples were taken. PVY positive samples were strain-typed to determine strains present in the state. Provided diagnostic support for field inspectors.

Growers submitted tuber core samples for Bacterial ring rot (BRR) testing. Seven growers submitted 31 lots for testing.

Symptom development of BRR is often suppressed or delayed in cool, wet climates. Staff performed a variety trial with six of the most commonly grown varieties in Alaska: 'BakeKing', 'CalWhite', 'Cherry Red', 'Russet Norkotah', 'Shepody', and 'Yukon Gold'. Ten tubers of each variety were inoculated with *Clavibacter michiganensis* subsp. *sepedonicus*, the causal agent of Bacterial ring rot.

Results:

Infected plants in the Plant Materials Center greenhouse, that field, and tissue culture were removed from the propagation process to maintain the health status of remaining plants. Agricultural Inspectors submit leaf samples for testing if plants express disease symptoms. The short turn around enables our inspectors to better understand the visual expression of diseases. Both PLRV and PVY were found in seed fields during certification inspections and management recommendations were made to growers. PVY strain-typing showed the presence of both main serotypes, PVY-n and PVY-o/c, with PVY-n being more prevalent. This is important because PVY-o/c can cause foliar symptoms which are easier to rogue from the field; PVY-n often does not cause strong foliar symptoms, but may cause tuber necrosis.

Bacterial ring rot tuber core testing showed three lots infected with BRR. These positive results were confirmed by multiple tests (nucleic acid, serological, immunofluorescence, and media grow-out). The grower was contacted and management recommendations made. It is important to note that no BRR has been found on a certified seed farm. A report can be found on the Plant Materials Center website at http://www.plants.alaska.gov/pdf/2014_BRRSeedLotSourceTrial.pdf.

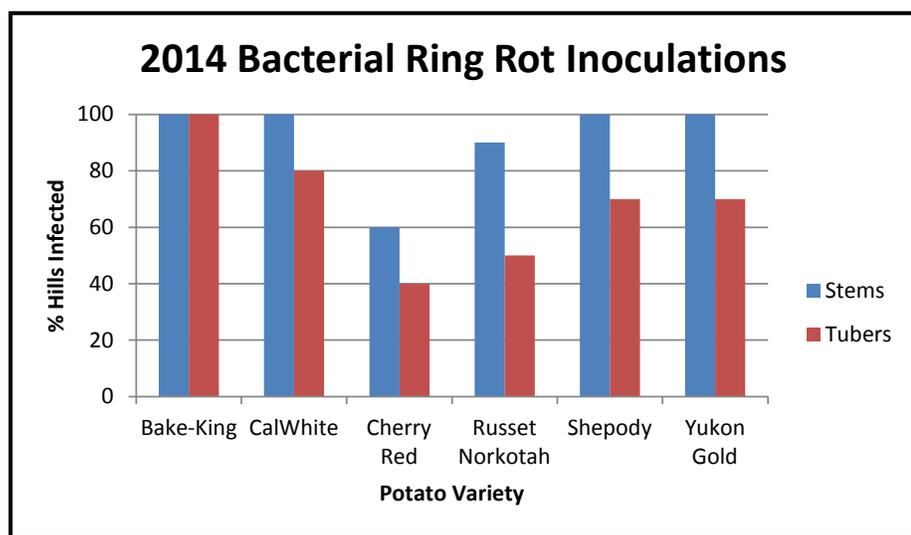


Figure 2.

The BRR inoculated potato variety trial showed very few symptomatic plants within the time frame in which inspections usually occur (final inspections are typically complete by mid-August). Most inoculated seed pieces generated infected plants (60-100%, dependent on variety), as well as infected daughter tubers (40-100%, dependent on variety) (Figure 2.). Most of the infected daughter tubers were asymptomatic. This demonstrates that visual symptoms are not reliable indicators for detecting BRR. These

infected plants and tubers may serve as sources of contamination for field implements, trucks, storage, etc., as well as planting into the following year's crop. A report can be found on the Plant Materials Center website at <http://plants.alaska.gov/pdf/2014BRRReport.pdf>.

Future Plans:

Virus testing will continue in the Plant Materials Center crop and growers' fields. This will enable the Plant Materials Center to maintain low levels of viruses in seed production.

The Plant Materials Center will continue to provide BRR testing for growers in an effort to minimize spread of the bacteria. The goal is to eradicate this disease from Alaska.

The Plant Materials Center continues to receive plant disease samples throughout the year and will continue to provide diagnostic support and management recommendations to growers.

Potato Production and Disease Monitoring

The Potato Program provides quality seed potatoes to commercial growers that are varietally pure and pathogen tested. Seed provided by the Plant Materials Center is used as the initial stock for a multiple year certified seed production scheme.

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2014 Potato Harvest

September 2014

Objective:

The Potato Program supports the commercial potato industry by producing Generation Zero, disease-free potato seed and assists producers with disease monitoring and management recommendations.

In 2014 the Plant Materials Center's Potato Program Lead, Bill Campbell, retired. For over 30 years, Bill worked diligently to address disease issues within the state, providing on farm assistance. Bill became nationally and internationally recognized for his expertise.

Funded by:

State of Alaska

Details:

Potatoes are among the most valuable crops grown on Alaskan farms, creating a net value over three million dollars annually. The potato can be afflicted by a wide range of pests and diseases, many of which are carried in or on the tubers used for seed. Diseases can cause significant losses, reducing both yields and quality. Seed potatoes free from disease are therefore required to assure successful yields and quality.

The Plant Materials Center maintains a production system that serves as the starting point of Certified Seed Potato Production in Alaska. Generation Zero, virus-testing seed potatoes are produced in the Plant Materials Center's Lab and Greenhouse and are made available to Certified Seed Growers. These growers plant, harvest, and replant their Certified Seed crop across multiple seasons to increase their volume for sale into the commercial market. The Plant Materials Center source of clean seed enables the Certified Grower to maintain vigorous and high quality seed lots by annually purchasing new seed and flushing out their older generations into the commercial market.

The importation of seed from outside the state or planting of non-certified seed has the potential to introduce pests and increase the risk of disease transmission to localized plantings. Growers wishing to try new varieties are encouraged to work with the Plant Materials Center to obtain clean seed potato stock.

Results:

During 2014, 164 varieties or breeding lines were planted at the Plant Materials Center. These potatoes are used for varietal identification, virus and disease monitoring, and germplasm maintenance. During the vegetative stage all plants are reviewed to ensure they are free from disease or viruses. All plants were screened for six viruses of concern. Any plants testing positive are removed from the field. On September 9 the field plots were harvested and stored on-site. This germplasm is used to re-initiate tissue culture production. Field grown seed also represents a reservoir of tubers that can be evaluated for storage, for tuber description documentation, and for planting field trials in side by side evaluations.

Potato Production & Disease Monitoring

On September 14, the Potato Program harvested from the greenhouse 41 varieties of G0 certified seed potatoes as ordered by Alaska Certified Seed Growers. Over 1,400 lbs of G0 seed was produced. All Certified Seed Growers were notified of their need to submit requests for 2015 production in late November. Minitubers generated from these orders will be grown, stored, and shipped by spring of 2016.

Future Plans:

The Plant Materials Center has been maintaining a clonal potato germplasm for 31 years and will continue to do so to ensure an ongoing source of suitable varieties for our Alaskan conditions. It will also continue the production of G0 seed based on orders from Alaska Certified Seed Growers.

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Potato tubers await disease testing in the Plant Materials Center laboratory.

Revegetation

The revegetation program at the Plant Materials Center is involved in production, reclamation, research, and knowledge transfer. Program priorities include developing site specific revegetation approaches using baseline data collection to make recommendations on species selection, seeding mixtures, plant material options, field implementation, and monitoring. Program staff provide technical assistance with revegetation plan writing or on-site vegetation inventory, wild seed collection, and reference documentation for industry professionals, state and federal agencies, and private companies.

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Revegetation/Native Brome Evaluations

August 2012 – Ongoing

Objective:

Introduce new plant species that have high conservation value. Species will be adapted to Alaska's many climates and will primarily be used for revegetation and erosion control projects.

Funded by:

Federal; NRCS

Details:

In 2012 staff collected Native brome from Southeast Alaska, Greenland, Iceland (Faroe Islands), Norway, and Nunavut, Canada for evaluation. During April 2013, seeds were planted in plug trays and thinned to a couple plants per plug. Field transplanting occurred August 13-14, 2013 when seedlings were approximately two inches tall and evaluations began. Seed collections were collected from the top 10 plants and are currently being cleaned for a second round of replanting and selection during 2015. Evaluations will continue through 2015. The original evaluation blocks will be allowed to bloom and seed productivity measured in 2016.

Results:

- Propagation and Establishment - Seeds were planted into containers on April 24, 2013. Seedlings were transplanted into fields on August 13-14 and watered routinely to ensure successful establishment.
- Evaluation; Summer 2014 (Year 1) - Evaluate all plants within each accession. Collect seeds from all plants and put into small bags. Select the top 10 plants based on field notes and observations. Put pollination bags over a few brome collections to determine if they are self or cross pollinating. Entire accessions or plants within accessions that are dead, inferior/marginal, or have some other inferior horticultural trait were removed.

Future Plans:

- Evaluation; Summer 2015 (Year 2) - Top 10 plants from the previous summer will be started in the greenhouse and transplanted into randomized replicated fields for a second cycle of evaluation and selection. This second planting will help to identify and collect seed with desirable traits. If at that point plants show value and are reasonably uniform, they are placed into seed increase blocks for production of commercial seed.
- Start of commercialization; Summer 2016.
- A report will be prepared at the conclusion of this multi-year evaluation.

Revegetation

Matanuska-Susitna Valley River Revegetation Trials Proposal

August 2014 — Ongoing

Objective:

Evaluate the potential success of plant species' ability to provide erosion control and dust abatement along the Matanuska River from the Old Glenn Highway Bridge near Palmer, to the Knik arm approximately nine miles southwest of Palmer.

Funded by:

Matanuska-Susitna Borough

Details:

Project is scheduled to begin summer 2015. Monitoring will continue through 2017. The Plant Materials Center will oversee project design, site implementation, and monitoring. The anticipated result is that planting on the riverbed will mitigate dust pollution, and to determine if the chosen plant species are adaptable to alluvial deposits. The Plant Materials Center will evaluate native species for their ability to stabilize sand bars and prevent erosion.

Results:

TBD

Future Plans:

A final report will be submitted January 2018.

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Noatak Seed Harvest Project

November 2014 — Ongoing

Objective:

Red Dog Mine has partnered with the Plant Materials Center and NANA Regional Corporation to study the feasibility of a local seed harvest business in Noatak.

Funded by:

Red Dog Mine

Details:

Train Noatak residents to identify, collect, clean, and eventually sell native seeds for revegetation projects. Red Dog Mine, airstrips, roads, gravel pits, and similar projects often require seed to revegetate and stabilize a site after heavy equipment work. Revegetation is most successful when using local native plant species.

Results:

TBD

Future Plans:

Continue to provide technical assistance to Red Dog Mine and associated partners as needed.

Soil Conservation

The Soil Conservation program at the Plant Materials Center provides technical assistance in the protection of soil resources for contractors, state and federal agencies, and other land users engaging in conservation, erosion, and sediment control projects. This program assists with soil analysis interpretation, guidance on proper field sampling, and provides site-specific fertilizer recommendations.

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Akun Island Erosion Control Assessment

July 2014

Objective:

Conduct a field assessment of eroded area on Akun Island. Create a report of findings and recommendations and submit to industry professionals to assist their erosion management decision process.

Funded by:

Federal; NRCS

Details:

The Akun Island project consists of 250+ acres of eroding and shifting sand dunes. Several Natural Resources Conservation Service staff members and one Plant Materials Center staff visited this area on July 24-26 to conduct erosion and vegetative surveys.

Results:

Three recommendations were provided for the eroded area: (1) Implement revegetation efforts using beach wildrye sprigging; (2) Implement revegetation efforts using a custom seeding mix in conjunction with the addition of top soil; (3) Perform no action.

Future Plans:

NRCS project managers will make an erosion control management decision. The Plant Materials Center future involvement is unknown at this time.

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Kodiak Bohemian Knotweed Removal

January 2013 — September 2016

Objective:

Remove the highly invasive Bohemian Knotweed vegetation from an 11,000 ft² site and utilize multiple erosion control and revegetation practices for restoration efforts.

Funded by:

State of Alaska and Kodiak Soil and Water Conservation District

Details:

Bohemian Knotweed was removed using manual and mechanical methods. Erosion control practices included the use of erosion control blanketing, hydro-mulch, biotic soil amendments, and custom seed mixes.

Results:

Current revegetation efforts are successful and the site is stabilized. Little to no erosion is taking place.

Future Plans:

Continue monitoring site and make any site amendments as needed.

Seed Laboratory

Seed Laboratory

Alaska State Seed Lab at the Plant Materials Center is the only official seed testing lab in the state of Alaska. The lab is a member of the Association of Official Seed Analysts (AOSA) since 1998. The lab offers purity, germination, tetrazolium (TZ), noxious weed seed, moisture content, seed count and growout tests. Customers range from state and federal agencies, local seed growers, environmental firms, and hobby gardeners.

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General Seed Laboratory Information

2014

Number of tests performed during 2014 shown in **Table 2** below:

Table 2.

Germination	170
Noxious weed	64
Purity	120
Seed per gram	9
Tetrazolium	3
Total	366

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The Seed Laboratory at the Plant Materials Center.

Seed Services

In conjunction with the Foundation Seed Production Program, the Plant Materials Center supports Alaskan agricultural producers by offering high quality foundation-level seed for sale and providing seed cleaning and conditioning services.

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Bi-Annual Seed Sale

April, 2014 — September, 2014

Objective:

Annually make available for sale high quality Foundation level seed to Alaska agricultural producers and to educational and research facilities.

Funded by:

State of Alaska

Results:

- **Research Seed Distributions:** Seed from the Alaska Plant Materials Center was distributed to several organizations for research, field trials, and education purposes. Those varieties are listed in **Table 3** below.

Table 3.

Forbs	Grains
Alpine Milkvetch	Ingal Wheat
Alpine Sweetvetch	Meadow Barley
Beach Fleabane	Nip Oats
Beach Lovage	Thual Barley
Beach Wildrye	Toral Oats
Columbine	
Dwarf Fireweed	Grasses
Eskimo Potato	'Arctared' Red Fescue
False Mayweed	Largeglume Bluegrass
Field Oxytrope	'Norcoats' Bering Hairgrass
Geranium	Rough Bentgrass
Goldenrod	'Wainwright' Slender Wheatgrass
Iris	
Jacob's Ladder	
Nodding Locoweed	
Staghorn Cinquefoil	
Tilesius' Wormwood	
Yarrow	

Seed Services

- **Foundation Seed sale (Table 4):** Three grain lots, 10 forb seed lots, and 13 grass seed lots were listed for sale.

Table 4.

Foundation Grain	Foundation Forb Seed	Foundation Grass
'Wooding': 1,025 lbs	'Caggluk': 2.5 lbs	'Alyeska': 2.5 lbs
'Lidal': 250 lbs	'Twenty Mile': 1.5 lbs	'Wainwright': 10 lbs
'Ingal': 500 lbs	'Butte': 3.5 lbs	'Sourdough': 3 lbs
'Nip': 25 lbs	Mentasta': 1.5 lbs	'Egan': 20 lbs
'Toral': 250 lbs		'Reeve': 11 lbs
Total: 2,050 lbs	Total: 9 lbs	Total 46.5 lbs

Future Plans:

Starting in 2015 the Plant Materials Center will hold Foundation Seed sales throughout the growing season; April-September.

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Seed Cleaning and Conditioning

2014

Objective:

Seed cleaning and conditioning is an integral step in producing the highest quality seed that is free of contaminants. The Plant Material Center's seed cleaning facilities process seed from its own Foundation seed fields as well as seed from Alaska seed growers, private firms, and other state and federal agencies. There are two seed cleaning and conditioning facilities, the 'large seed house' for lots greater than 250 lbs and the 'small seed cleaning' facility for all other seed lots, including those intended for research and demonstration. Cleaning and conditioning operations are traditionally completed during the winter months. All cleaning and conditioning services are provided on request and are charged by the hour, including shipping cost of clean or uncleaned seed.

Funded by:

State of Alaska

Details:

Seed cleaning and conditioning is the process of separating the target seed crop from unwanted materials such as other crop seed, weed seeds, and inert matter inadvertently collected in the field during harvest. The physical traits of each species of seed allows for this process due to its unique size, width, specific gravity or seed surface texture. Every piece of seed cleaning equipment has the ability to use one or more of these traits to assist in the process. To help determine which equipment or process to use, all seed lots prior to cleaning undergo a preclean sample test. This analysis is necessary to determine the amount of unwanted material that is to be removed in a seed lot.

Results:

The Plant Materials Center cleaned and conditioned a total of 24 commercial seed lots weighing 85,000 lbs prior to cleaning. Thirty-six Foundation seed lots from the Plant Materials Center's own fields were also cleaned and conditioned.

Future Plans:

The Plant Materials Center will continue to provide seed cleaning services to assure a quality end product.

Additional Plant Materials Center Projects

Forage Growth Curve Project

January 2012 — December 2016

Objective:

Provide a series of technical reference guides on growth curves for commonly utilized forage species in eight different regions of Alaska. These regions include; Fairbanks, Delta Junction, Copper Center, Palmer, Point MacKenzie, Soldotna, Homer, and Kodiak Island. Study plots were constructed in each location in June 2012. Samples are collected bi-monthly throughout the growing season (June-September). Data collections include yield production, nutrient evaluation, and general field parameters. This five year project started in 2012 and will continue through the 2016 growing season. It is currently in its fourth year of evaluation.

Funded by:

Federal; NRCS

Details:

Additional field sampler personnel have been added to the project's budget in an effort to coordinate synchronized sampling efforts due to the far distances and travel time between plots. Two NRCS staff members, two Plant Materials Center employees, and one private sub-contractor are allocated to the project budget.

Results:

Data collected from each growing season will be analyzed and drafted into an annual report. A final report and technical reference comparing and contrasting each year's data will be completed at the project's completion in 2016.

Future Plans:

Continue collecting data for the 2015-2016 growing seasons.

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Forage crop sample.

Additional Plant Materials Center Projects

Matanuska-Susitna Valley Riparian Revegetation Project

March 2010 — September 2014

Objective:

The goal of this project was to collect and increase seed and vegetative material from native, riparian species to be made available for Matanuska-Susitna Valley based revegetation projects for federal partners. This project was beneficial because it expanded collection areas and increased the germplasm assembled at the facility.

Funded by:

Federal; USFWS

Details:

This project took place in the Matanuska-Susitna Valley. Collection sites included Palmer Fishhook Rd, Knik River Rd., and Lazy Mountain areas. Plant Materials Center staff collected seed, performed increases, and field evaluations at the Plant Materials Center facility. Existing germplasm was utilized when available. Additionally, species limited by vegetative collection only were rooted at the Plant Materials Center for future harvest when necessary. Collections and increases took place over previous seasons and were completed in 2014. A list of species involved across the lifetime of the project is included in below (Table 5.):

Table 5.

Existing PMC Germplasm	Wild Collections	Vegetative Materials Production
<i>Deschampsia cespitosa</i>	<i>Calamagrostis canadensis</i>	<i>Salix alaxensis</i>
<i>Aquilegia Formosa</i>	<i>Chamerion angustifolium</i>	<i>Salix lasiandara</i>
<i>Delphinium glaucum</i>	<i>Lupinus nootkatensis</i>	<i>Populus balsamifera</i>
	<i>Geranium erianthum</i>	

Results:

No seed or vegetative material was harvested during the 2014 growing season due to unusually high temperatures resulting in low or poor growth. A final report was prepared.

Future Plans:

This project ended in 2014. A final report was completed and can be found on the Plant Materials Center website at http://plants.alaska.gov/pdf/MatSuFinalReport_2014.pdf.



Field plantings of *Calamagrostis canadensis*.

Additional Plant Materials Center Projects

Native Plant Material Development Project (Seeds of Success)

September 2014 — September 2019

Objective:

The goal of this program is to develop plant material and technology for revegetation, soil and water conservation, and encourage a healthy native plant seed industry in Alaska and to develop and maintain a complete inventory of wild collected plant material for storage at the Plant Materials Center.

Funded by:

Alaska Bureau of Land Management

Details:

This project is an extension of a previous project from 2009-2014. A new agreement between the BLM and the Plant Materials Center was signed in September. New field plantings were established, existing plantings maintained, fields harvested, seed collected and cleaned.

Results:

Collections included polargrass (*Arctagrostis latifolia*), tufted hairgrass (*Deschampsia cespitos*), alai fescue (*Festuca altaica*), alpine bluegrass (*Poa alpina*), alpine sweetvetch (*Hedysarum alpinum*), and Tilesius' wormwood (*Artemisia tilesii*) from McGrath, Copper Basin, Cold Foot, and Southcentral Alaska.

Maintenance of existing plantings:

Most of the species planted in 2013 were established and harvested for the first time in 2014. Yields among them varied significantly due to environmental conditions. A weed management program was implemented in 2014. It included mechanical and chemical methods. Field plantings were fertilized in the beginning of the season.

Table 3. Seed harvested from field and box garden increase plots:

Species	Clean Weight
<i>Festuca rubra</i>	3,620 g
<i>Leymus mollis</i>	1,360 g
<i>Trisetum spicatum</i>	230 g
<i>Poa alpina</i>	284 g
<i>Bromus inermis</i>	76.5 g
<i>Deschampsia ceaspitosa</i>	47.3 g
<i>Calamagrostis canadensis</i>	22.88 g
<i>Calamagrostis purpurescens</i>	4 g
<i>Hedysarum alpinum</i>	146.26 g
<i>Oxytropis campestris</i>	22.26g
<i>Artemisia arctica</i>	2.07 g
<i>Chamerion latifolium</i>	1.31 g
	5,816.58 g

Seed Cleaning:

The seed cleaned at the Plant Materials Center included field increases and new collections (**Table 3**). The amount of seed from field increases is over 12 lbs. During this season staff obtained 71 collections. Total weight of the clean seed exceeded six lbs.

Future Plans:

Several more species will be collected from areas that need revegetation and will be increased the next growing season. An updated progress report can be found on the Plant Materials Center website at: http://plants.alaska.gov/pdf/SeedsofSuccessProgressReport_2014.pdf.

Additional Plant Materials Center Projects

Publications

2014

Objective:

Publications staff provides graphic design, web content-management, and technical writing support for the Plant Materials Center and other Division of Agriculture programs.

Funded by:

State of Alaska

Details:

Publication efforts include the development of media releases, fact sheets, brochures, reports, and other technical documents that are made available to the public and funding agencies. Staff works closely with the Invasive Plants and Marketing Programs on outreach materials including social media support, development of newsletters, writing, editing, and other graphic design related projects.

Results:

In addition to the aforementioned daily tasks, larger projects included:

Alaska Grown Source Book (Print and Web Editions)

In spring of 2014 the Publication Specialist worked collaboratively with the Division of Agriculture’s marketing section to create the 2014/2015 Alaska Grown Source Book. The Source Book is a publication that lists statewide farms, Community Supported Agriculture (CSA), and U-picks statewide. It also contains a directory of farm related service providers. As a supplement to the printed edition the Plant Materials Center also created an online searchable version of the publication. To date, 5,000 copies have been printed.

Plant Materials Center Website

In spring of 2014 the Publications Specialist launched the Plant Materials Center’s new website. All program pages were updated and new pages created to reflect current and new projects.

Tradeshow Display

Publications staff updated the Plant Materials Center’s tradeshow display.

**Additional publications can be found at http://plants.alaska.gov/Plant_Materials_CenterPubsIndex.html*

Future Plans:

Continued development of online and print materials. Development of a new database customized to the Seed Laboratory’s requirements. Pending the launch of the new ‘Percussion’ web content management system, staff will build new webpages for the Division as required by the Department.

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Staff Presentations

Blackburn, Brianne and Peggy Hunt (March and April 2014). *Alaskan Agriculture for Future Educators*. Presented to: Matanuska-Susitna Valley Community College Students. Palmer, AK.

Blackburn, Brianne (March 2014). *Invasive Plant and other Plant Materials Center Programs*. Presented to: Matanuska-Susitna Valley College Life Science students. Palmer, AK.

Blackburn, Brianne and Heather Stewart (April 2014). *USFS Coordination Meeting Update on Canada Thistle Management*. Presented to: USFS Group managers and project coordinators. Anchorage, AK.

Blackburn, Brianne and Heather Stewart (April 2014). *Kenai Elodea Public Meeting*. Presented to: USFWS, DNR, SePro, Homer SWCD, Fairbanks SWCD, homeowners, and the general public. Nikiski, AK.

Blackburn, Brianne (April 2014). *Elodea in Alaska at the Annual Aviation Safety Foundation Float Plane Safety Seminar*. Presented to: Float plane pilots, civil air patrol representatives. Anchorage, AK.

Blackburn, Brianne and Heather Stewart (April 2014). *Kenai Cooperative Weed Management Area Meeting: Elodea Statewide Update*. Presented to: BLM, USFWS, USFS, UAA, ADF&G, Homer SWCD, DNR, National Parks, Fairbanks SWCD. Kenai, AK.

Blackburn, Brianne (May 2014) *Weed Free Forage and Gravel*. Presented to: Homer Soil and Water Conservation District and private farm owners. Homer, AK.

Blackburn, Brianne (May 2014) *Elodea in Alaska*. Presented to: Polaris Squadron of Civil Air Patrol. Anchorage, AK

Campbell, William (February 2014) *Variety Demonstration Plots, Certified Seed Potatoes in Alaska, Program Funding*. Presented to: Palmer Produce Conference. Palmer, AK.

Campbell, William (March 2014) *Potato Production in Alaska*. Presented to: 2014 Potato Symposium. Palmer, AK.

Campbell, William (March 2014) *What are Certified Seed Potatoes and Why are they Important?* Presented to: Sustainable Agriculture Conference. Fairbanks, AK.

Carter, Robert (March 2014) *Foundation Seed Production and the Role of the Plant Materials Center*. Presented to: Kiwanis Club. Palmer, AK.

Carter, Robert (August 2014) *How and Why to Clean Seed*. Presented to: Students grade 4-8. Palmer, AK.

Czapla, Phil and Casey Dinkel (January 2014) *Revegetation and Erosion Control*. Presented to: Department of Transportation (DOT)(Annual Stormwater Meeting) Anchorage, AK.

Czapla, Phil and Casey Dinkel (April 2014) *Revegetation and Erosion Control*. Presented to: Alaska Storm Water Steering Committee (ASWSC). Anchorage, AK.

Staff Presentations

Czapla, Phil and Casey Dinkel (October 2014) *Revegetation and Erosion Control*. Presented to: The Alaska Invasive Species Conference. Anchorage, AK.

Czapla, Phil and Casey Dinkel (November 2014) *Revegetation and Erosion Control*. Presented to: American Society of Civil Engineers (ASCE). Palmer, AK.

Hunt, Peggy (March 2014) *Identification and Uses of Cottonwood and Spruce*. Presented to: Public, tribal groups. Palmer, AK.

Steinlage, Todd (January 2014) *2013 Virus Testing*. Presented to: The Alaska Peony Growers Association, Winter Meeting. Anchorage, AK.

Stewart, Heather (April 2014) *Aquatic Invasive Species Field Staff Training*. Presented to: ADF&G, USFS, and BLM. Palmer, AK.

Stewart, Heather (May 2014) *Aquatic Invasive Species Field Staff Training*. Presented to: DF&G; Sportfish, Habitat, and Boating and Angler Access program; Homer SWCD; Kachemak Bay National Estuarine Research and Reserve; Cook Inlet Aquiculture Association; Alaska Bioworks; and the Kenai Wildlife Refuge. Homer, AK.

Stewart, Heather (October 2014) *2014 Canada Thistle Management in Anchorage: A New Approach*. Presented to: CNIPM Conference. Anchorage, AK.

Stewart, Heather and Peter Johnson (December 2014) *Invasive Plants in Alaska*. Presented to: Scenic Park Elementary, Grade 4. Anchorage, AK.

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Staff Publications and Reports

Blackburn, Brianne (April 2014) *Supplemental Environmental Assessment; Stormy and Daniels Lake Elodea Eradication Project*. Plant Materials Center, Palmer, AK.

Blackburn, Brianne and Heather Stewart (July 2014) *Terrestrial Weed Identification Field Guide; 2nd Edition*. Plant Materials Center, Palmer, AK.

Campbell, William and Mia Kirk (March 2014) *AK Seed Potato Certification Handbook*. Plant Materials Center, Palmer, AK.

Carter, Robert (July 2014) *Revegetation Plant Identification Guide*. Plant Materials Center, Palmer, AK.

Foreaker, Rusty (December 2014) *2014 Broccoli Variety Trial Results*. Plant Materials Center, Palmer, AK.

Mahlev, Lyubomir (March 2014) *Matanuska-Susitna Valley Riparian Plant Material Development; Final Report*. Plant Materials Center, Palmer, AK: Prepared for: USFWS.

Mahlev, Lyubomir (December 2014) *Seeds of Success Final Progress Report*. Plant Materials Center, Palmer, AK: Prepared for BLM.

Mahlev, Lyubomir (December 2014) *Seeds of Success Progress Report*. Plant Materials Center, Palmer, AK: Prepared for BLM.

Stewart, Heather (October 2014) *Canada Thistle Final Report*. Plant Materials Center, Palmer, AK: Prepared for USFS.

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Acknowledgements

The Plant Materials Center would like to acknowledge two recent retirees, Bill Campbell and Peggy Hunt.

Bill dedicated over 30 years to the Potato Program, working diligently to address disease issues within the state, providing on-farm assistance and sharing his knowledge of potato production. Bill became nationally and internationally recognized for his expertise. Bill's hard work, loyalty, research, and especially his sense of humor will be missed at the Plant Materials Center.

Peggy dedicated 15 years to the Plant Materials Center as an advocate for agricultural and native plant education. Peggy spearheaded the development of the Plant Materials Center's ethnobotany teaching garden and, as a result, reached countless school and community groups through courses and tours. Peggy's passion and dedication to the Plant Materials Center will be missed.

This document was created in accordance with with Alaska Statute 03.22.060.

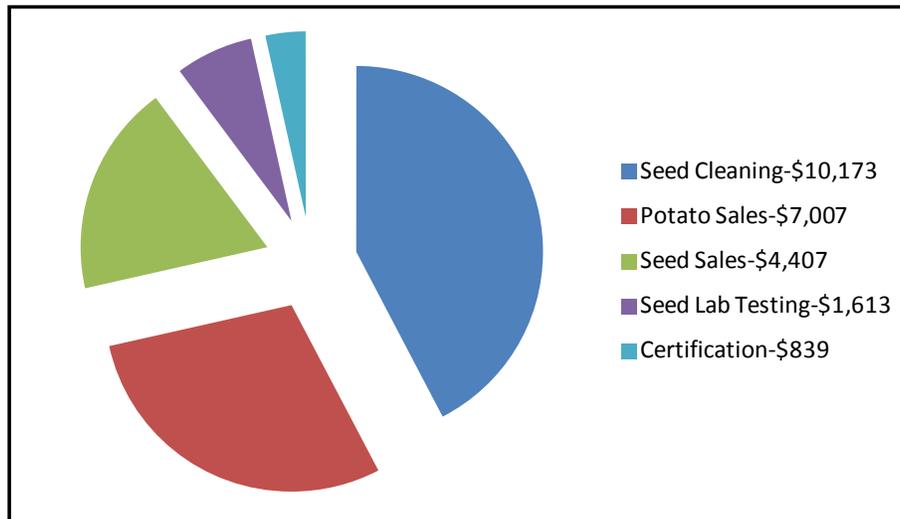
Appendix

2014 Calendar Year Monthly Financial Reporting

	January	February	March	April	May	June
PMC Totals	\$139,957	\$137,120	\$123,375	\$140,421	\$168,901	\$185,943
Personal Services	\$117,247	\$112,523	\$101,124	\$119,237	\$137,981	\$159,742
Travel	\$1,121	\$261	\$2,248	\$978	\$2,840	\$227
Services	\$20,216	\$16,150	\$16,148	\$13,888	\$18,145	\$12,589
Commodities	\$1,373	\$8,186	\$3,855	\$6,318	\$9,935	\$13,385

	July	August	September	October	November	December
PMC Totals	\$211,235	\$160,001	\$145,186	\$156,258	\$160,278	\$153,043
Personal Services	\$150,483	\$130,694	\$121,742	\$123,416	\$130,086	\$120,106
Travel	\$2,646	\$984	\$920	\$818	\$2,315	\$3,791
Services	\$20,285	\$12,025	\$17,592	\$27,368	\$21,432	\$17,399
Commodities	\$37,821	\$16,298	\$4,932	\$4,656	\$6,445	\$11,747

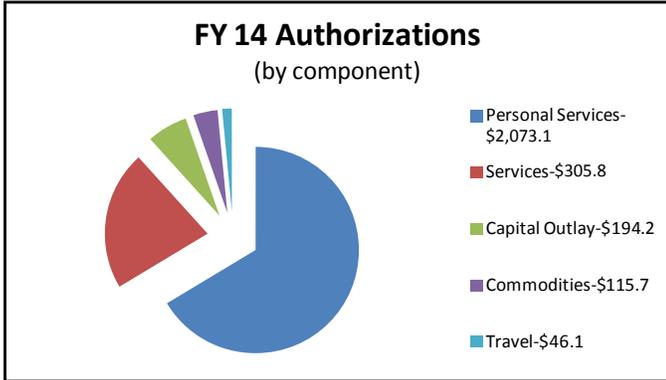
Program Revenue



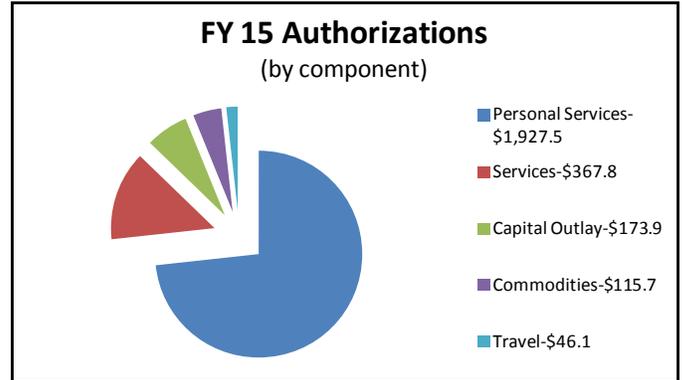
Appendix

2014/2015 Fiscal Year Financial Reporting

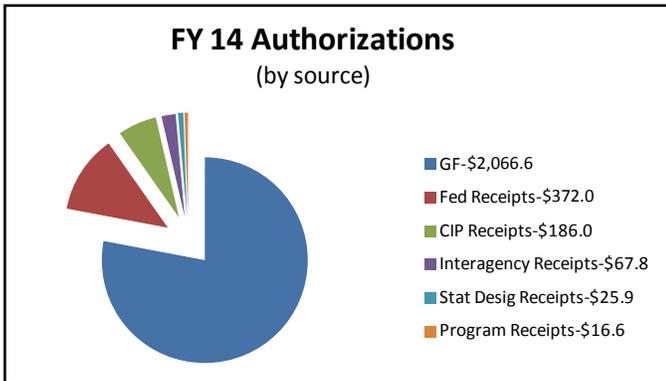
Fiscal Year 2014 Operating Budget Enacted by Component



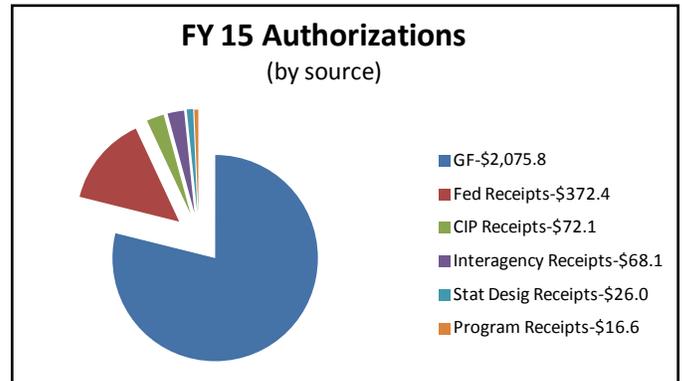
Fiscal Year 2015 Operating Budget Enacted by Component



Fiscal Year 2014 Operating Budget Enacted by Source



Fiscal Year 2015 Operating Budget Enacted by Source



Total FY 14 Operating Budget \$2,734.9 M

Total FY 15 Operating Budget \$2,631.0 M

Appendix

Other Sources of Funding

Source	Project	Value	Duration
USDA Specialty Crop	Asparagus Variety Evaluation	\$26,720	2013-2015 (ongoing)
Pioneer Fruit Growers	Apple Rootstock Trial	\$7,500	2013-ongoing
USDA Specialty Crop	Cauliflower Crop Trial	\$35,200	2014-2016 (ongoing)
US Forest Health Protection	Statewide Canada Thistle Management	\$100,000	2013-2016 (ongoing)*
National Fish & Wildlife Foundation	Anchorage Canada Thistle Management	\$85,000	2012-2014
USDA NRCS	Invasive Species Training	\$45,000	2013-2015 (ongoing)
USDA NRCS	Forage Evaluation	\$110,000	2014-2018 (ongoing)
USDA NRCS	Native Brome Evaluation	\$12,300	2012-2016 (ongoing)
Teck Alaska/Nana Regional Corporation	Noatak Native Seed Harvest	\$15,000	2014-ongoing
USDA NRCS	Akun Island Erosion Control Assessment	\$5,000	2014
USDA NRCS	Forage Growth Curve	\$145,000	January 2012-December 2016
US Fish & Wildlife Service	Mat-Su Riparian Revegetation	\$24,800	2010-2014
Bureau of Land Management	Native Plant Material Development	\$29,845	2014-2019 (ongoing)

*This represents current grant funds. Project began in 2008 with previous grant funding.