USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service
Bismarck Plant Materials Center

2010 Progress Report of Activities

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Riverview Germplasm American Black Currant

High survival, good growth rate, fall color, and a nutritious fruit are some of the benefits of this new native shrub release. This local seed source originates within view of the Big Sioux River in northeast South Dakota. Staff at Big Sioux Nursery (Watertown, SD) collected the original seed and grew the plants that were used for field testing. **Riverview American Black Currant Germplasm** (*Ribes americanum*) was

Demonstration planting in flower of Riverview Germplasm American black currant at Brookings, SD

officially released in 2010 for many conservation and agroforestry uses, including riparian and wildlife plantings, farmstead and field windbreaks, single-row wind barrier plantings, fruit production, and ornamental/recreational plantings. This compact shrub species is native to Minnesota, North Dakota, and South Dakota along moist drainages and streambanks in or on the edge of wooded areas. Its open branching helps prevent breakage from snow. Currant species should not be planted near white pine (*Pinus strobus*) because of the potential association with the blister rust fungus.

Riverview Germplasm was tested on a variety of sites in five Off-Center Evaluation Plantings and 20

Native stand of American black currant in north central North Dakota

landowner Field Plantings in the three-state area. Planting sites varied from heavy grass competition to weed-free conditions. Survival and growth rates were good, even with heavier weed competition. American black currant grows 3 to 6 feet tall, and after about 5 years is wider than it is tall. Small yellow flowers open in late May, and drooping racemes produce glossy dark purple to black fruit that are sweet and nutritious. It is considered highly drought tolerant, as well as flood tolerant, but it will not survive standing permanent water. It occurs naturally as an understory species and may form colonies or thickets which provide excellent cover for wildlife. Adaptation is anticipated to be across regions of the Upper Midwest and Northern Great Plains on Conservation Tree and Shrub Groups 1, 3, 4, and 5. Bareroot seedlings are available from conservation nurseries.

Collecting Sand Cherry

Western sand cherry is a small native shrub that has been used in conservation plantings for many years. There are no conservation varieties on the market, and nursery stock is known to be quite variable in size and performance. Plantings are relatively short-lived generally not exceeding 10-15 years. Individual plants vary considerably in fruit quality. Plans are to establish an evaluation nursery of western sand cherry with the objective of making selections to develop a new variety with more consistent plant performance and longevity.

Leaves and fruit of western sand cherry

The PMC would like assistance in collecting fruit of western sand cherry from native grasslands or existing plantings. Native stands are usually found on sandy, rocky, or gravelly hillsides or open woodland at low elevations. The plants and fruit are highly sought after by various wildlife species. Plants on native grasslands are often browsed heavily and often don't produce

fruit. When picking seed from existing plantings, select fruit from healthy, vigorous plants. Fruit should be fully mature before harvesting. A little "taste testing" will help verify seed from higher quality fruit. The fruit should be ready to pick in late summer. Let the fruit dry down some before sending seed to the Bismarck PMC. Twenty-five to fifty seeds per sample would be great. There is one seed (stone) per fruit. We will take whatever we can get from the native grassland collections. Seed collection envelopes can be requested from the PMC. Please provide as much site information as possible including: legal description or GPS, county, state, location (map or directions), soils, associated plants, how many plants, and the name of the collector(s).

Traveling Training in South Dakota

The weather held and there was good attendance at the traveling training conducted in South Dakota on July 21-22, 2010. Greg Yapp set up an itinerary with an indoor session in the morning and field trips after lunch highlighting the plant materials plots. Day 1 was at Wessington Springs. The group of about 25 participants filled the meeting room where PMC staff talked about Regional and National Plant Materials Programs, PMS Update, Current Studies and Related Activities, How Field Offices Can Participate in Plant Materials, Grass ID (seedlings and mature plants), Miscellaneous Seed Topics, and Seed Tags and Seed Tests. Donna Tiede and staff gave an update on the plant materials site north of town and how the idea was developed and the plots established. After lunch, the group toured both the grass/legume mixtures and the tree plots. The cool-season grass species were off to a much quicker start than the warm-season, but the warm-season were catching up. The tree plots had two treatments, fabric and no fabric. There definitely were differences in performance with some species. In late afternoon, the instructors headed to Bison for Day 2. On the way, a rain deluge with street flooding held us up for a while in Pierre. Luckily, it was after the tour! A similar indoor session was held at Bison the next day with about a dozen participants. The afternoon tour led by Garrett Schweitzer included a look at sites where cottonwoods with tube protection were being established along the floodplain. Ryan Beer and field office staff discussed the plant materials evaluation site where various mixtures of grasses and legumes were planted. PMC staff discussed the plots in more detail. Selected plots had been clipped in 2009. Meadow bromegrass and the yellow-flowered alfalfa were performing very well. The traveling training showcased plant materials/field office projects and provided updated information on various plant materials activities to the field offices.

Cottonwood establishment project near Bison, SD

Bob Rennolet Receives Plant Materials Special Service Award

Bob Rennolet, District Conservationist in the Parkston Field Office, is well known in his area of South Dakota for plant materials expertise, especially planting native grass. He has readily shared this information with others through workshops and small group training activities. Bob is always interested in new plants offered for testing and has established numerous field plantings. He has assisted local commercial growers in seed production of several PMC releases. Throughout his career, he has promoted the Plant Materials Program with fellow employees, and worked with local landowners and other agencies to better establish native plantings. Bob is a long-term member of the South Dakota State Plant Materials Committee. The Plant Materials Special Service Award is presented to a non-plant materials discipline person whose efforts have or are substantially advancing the plant materials program. Three such awards were presented nationally in 2010. Congratulations Bob and thanks for all the plant materials help over the years!

Specialist Update *(Dwight Tober)*

The 2010 plant materials season was busy with numerous planting and information activities. I will try to give a snapshot of some of these happenings. Landscaping with native plants, under-used tree species, and general plant materials presentations were given at the Big Sioux Nursery Annual Meeting in February at Mobridge, SD, and Horticulture and Tree Workshops at Bowman and Hettinger, ND, in early April. A Native Plant Propagation Workshop was held at Red Lake, MN, in late April. Nancy brought sweetgrass and white sage for a u-pot-it exercise. I added new entries to the Off-Center Evaluation Planting (OCEP) site at Brookings, SD, and Becker, MN, the first week in May. No new entries were added at the site at Grand Rapids, MN, as the agreement expires in 2011. Wayne and I attended a Native Seed Conference in Utah in late May. The Bureau of Land Management with partners has been establishing their own Native Plant Materials Development Program

Potting sweetgrass and white sage at the Red Lake workshop

(NPMDP) since its inception in 2001. The foundation of this effort is wildland native seed collections for conservation and propagation. I delivered sweetgrass and white sage plants in early June and presented information on grasses for biomass at a bioenergy workshop at St. Cloud, MN. Nancy and I gave presentations at the Annual Conference of the American Indian/Alaska Native Employees Association for NRCS. A PMC Technical Review was conducted in mid-June. A tour of the tree plots was held at Morris, MN, in late June together with an area office plant materials workshop. Traveling training and plot tours were held at Wessington Springs, SD, and Bison, SD, in late July. I gave a presentation on saline tolerant plants at a Salinity Workshop at Carrington, ND, in late July. The formal three-day training session at the PMC was held in early August. The training room was full with 24 participants from all three states. I delivered plants for the Biome Project at Bemidji, MN, and measured trees and took notes on the OCEP sites in mid-August. Area 1 in Minnesota again put together a well organized plant materials tour under the leadership of Al Gustafson. Various seeding techniques and other activities on the 25,000 acre Glacial Ridge Restoration Project were viewed and discussed. Wayne and I reviewed the bioenergy plots at Staples, MN. Overall, most of the grasses looked good. A graduate student has been hired to collect data. Approximately 130 field planting evaluation forms went out to field offices in August. I appreciate Robin Martinek (MN) and Greg Yapp (SD) helping coordinate this effort. White poplar and common ninebark were again offered for field plantings in 2010. Overall survival and performance of both species could be rated as good. The ninebark did not do well on sites with poor drainage. Riverview Germplasm American black currant was officially released as a source identified germplasm. Extra efforts were made to collect seed of the Riverview Germplasm American black currant, as well as the new release of hackberry, Prairie Harvest Germplasm. Special appreciation to Area 1 (MN) employees, and horticulture students at the U of M, Crookston, who helped collect hackberry seed. Nancy and I clipped forage production on the Wessington Springs, SD, plots in early September with help from various field offices. Thanks to everyone who assisted with the Plant Materials Program in 2010.

Rescuing urban trees for an outdoor classroom setting at Bemidji, MN

People's Gardens

Help for the community and the environment is the common purpose of the People's Garden Initiative. It is a USDA effort which challenges its employees to establish demonstration plantings at USDA facilities or other locations. The plantings provide an opportunity to connect USDA employees with the communities around them, educate communities about their natural resources, raise awareness of what NRCS and USDA do, and provide outreach to non-traditional customers. NRCS offices are encouraged to participate. Rain gardens, native grass displays, pollinator plots, tree and shrub demonstrations, and 3 sisters gardens are examples of plantings that may qualify as People's Gardens. Certain plant materials demonstration or test plots may qualify. Check out the requirements at http://directives.sc.egov.usda.gov. If your planting qualifies, enter it into the database at http://www.longport.usda.gov. Feel free to add pictures and request a free sign identifying your project. There are more than 1,200 People's Gardens entered into the database as of January 5, 2011. The Bismarck PMC has several plantings entered into the database, and has developed part of the demonstration area into a more user friendly People's Garden.

Mike Knudson built a People's Garden kiosk for tour groups at the PMC

Bioenergy Plots in Minnesota

The Bismarck PMC is partnering with Central Lakes College at Staples, MN, and others in the performance testing of various plant materials as potential bioenergy crops. PMC staff seeded five different species/entries at eight different locations near Staples in 2009. Entries included switchgrass, big bluestem, intermediate wheatgrass, prairie cordgrass, and a CP-25 native mix. Some entries had two varieties. The plots were seeded with a no-till grass drill. Establishment varied depending on the site preparation and weed competition. Dry conditions after seeding delayed germination. The cool-season species established more quickly than the warm-season. Intermediate wheatgrass established the quickest, and prairie cordgrass had the poorest stand. Stand densities improved for all plots in 2010. A graduate student was hired to collect data. Fertilizer will be an added treatment on the station plots. Tours and field days have been held at the Ag Center.

Intermediate wheatgrass and big bluestem performed well on the drier sites

Clipping Wessington Springs Plots

Personnel from various field offices helped PMC staff harvest forage production on selected plots at the Wessington Springs, SD, plant materials site. A flail-knife forage harvester was used to clip a 10-foot by 2-foot strip in each plot. Field office staff helped weed the plots before clipping, and discard contaminant plants. The sample was weighed wet, and a smaller grab sample was collected for later drying and weighing at the PMC. The plots were seeded in 2007. Some of the shorter lived grass species and forbs were not clipped because of declining vigor and production. All intermediate and pubescent wheatgrass entries did well. Production was in the 7,000 to 8,000 lb/ac range. Tall wheatgrass had the highest production at 9,112 lb/ac. Big bluestem was the highest producing warm-season grass at almost 6,000 lb/ac. Switchgrass was 4,800 lb/ac. The top two legumes were cicer milkvetch at 5,321 lb/ac and the yellow blossom alfalfa at 5,200 lb/ac. The larger mixture plots seeded on the ends did well at 7,723 lb/ac (10 species native mix), and 5,420 lb/ac (intermediate/meadow brome/alfalfa). Ratings

A forage harvester was used to sample end-of-year production

for stand, vigor, and weed competition were also determined for each plot. All data will be summarized and included in the 2010 Annual Technical Report.

Bugs in your Ash?

An exotic insect, the emerald ash borer, was first discovered in Michigan in 2002. Since then, it has spread to 11 other states, including Minnesota. It has not reached North or South Dakota, but trees in these states are very vulnerable. There are hundreds of windbreaks which are solid rows of green ash. Now would be a good time to find alternate species of trees to use in place of the ash. Finding substitutes for green ash is not going to be easy. Green ash has been a great tree for windbreaks. It survives on many types of soils and is not greatly bothered by deer and rabbits.

Most of the other adapted species of tall trees have limitations due to soils, herbicide susceptibility, or are attractive to browsers. Hackberry is a native tree which has potential to be tall and long lived. The tallest hackberry tree in North Dakota is a 68-foot tall tree and is growing in Bismarck. This past spring, the PMC helped plant several hackberry trials in Cass County, Barnes County and Foster County. Plantra tree shelters were placed around these trees. By fall, many of the trees had grown out of the tops of the 5-foot shelters.

With a little extra effort, some of these other tall tree species can become established. Tree fabric and new designs of tree shelters will aid in increased survival and growth rates. When you consider the long term value of the trees, the use of fabric and shelters may be a good investment.

Salinity Project

The Foster and Stutsman County NRCS/SCD, along with North Dakota NRCS Area and State Staff and the Bismarck Plant Materials Center, have joined forces with the Carrington Research and Extension Center to evaluate and record plant performance as they relate to varying levels of salinity. Three sites were planted the end of May 2010 at Carrington, Barlow, and Buchanan, which are located in central North Dakota.

Evaluating performance of grasses and legumes in a salinity trial

The plots include over 25 different species of grasses and legumes along with many species of cover crops and annual crops. These plots will be evaluated for 5 years and data will be collected on initial germination, stand establishment, stand persistence and forage production of each species at different salinity levels. The data will provide additional information to field office staff on species selection and use in salt-affected sites across the Midwest and Northern Great Plains.

Pollinator

Pollinator is the buzz word these days in USDA! More than 30 percent of our food relies on insect pollination, which is overwhelmingly provided by bees. Native bees have declined due to habitat loss and other factors. European honey bees have suffered a 50 percent decline. The 2008 Farm Bill makes pollinators and their habitat a priority for every USDA land manager and conservationist. Many of the UDSA incentive-based conservation programs can be used to create or improve pollinator habitat (USDA, NRCS Technical Note 78). One way to enhance pollinator habitat is to incorporate wildflowers into planting mixes.

PMC pollinator garden

Small plots and beds with various wildflowers have been growing at the PMC for some time. As a way to familiarize planners and producers with more species, additional plots were planted in 2010. Seedlings propagated in the greenhouse of each species were planted into separate 4-foot by 7-foot long plots. Each plot had 5-10 plants. Additional species will be added in 2011. Plants and insects alike were quite showy in 2010. Many of the species bloomed at different times and attracted various bees and insects. The asters and milkweeds were exceptional insect magnets!

Columbine *Aquilegia canadensis*		Wild lupine *Lupinus perennis*
Blue wild indigo *Baptisia australis*		Smooth blue aster *Aster laevis*
Prairie blazingstar *Liatris pycnostachys*		Rattlesnake master *Eryngium yuccafolium*
Evening primrose *Oenothera biennis*		Blue sage *Salvia azurea*
False boneset *Kuhnia eupatoroides*		Heath aster *Aster ericoides*
Butterfly weed *Asclepias tuberosa*		Joe-pye weed *Eupatorium maculatum*
Swamp milkweed *Asclepias incarnata*		Round-headed bush clover *Lespedeza capitata*
Stiff goldenrod *Solidago rigida*		Early sunflower *Heliopsis helianthoides*
New England aster *Aster novae-angliae*		Fireweed *Epilobium angustifolium*
Mountain mint *Pycnanthemum virginianum*		scarlet globemallow *Sphaeralcea coccinea*

Foundation Seed Production

Two new foundation seed fields were planted in 2010. A field of Bad River blue grama and Red River prairie cordgrass were planted last spring. Fields at the PMC are generally from 1-5 acres in size. Currently, there are 21 foundation fields (27.3 acres) in production which includes 3 at the North Central Research and Extension Center at Minot, ND. A good supply of most species/varieties is available to commercial seed growers. Approximately 13,862 PLS pounds of foundation seed of 36 releases are presently stored in the PMC seed cooler and another 6,655 pounds of 2010 seed is currently being cleaned by PMC staff. The PMC will continue to raise and distribute foundation seed of over 40 public releases to commercial growers. We are also studying the possibility and feasibility of turning over some foundation seed production to commercial growers.

32-year-old foundation field of Pierre sideoats grama at the PMC

Staffing Changes

Mike Knudson, long-time PMC Forester/Assistant Manager, retired on December 31, 2010. Mike had over 36 years of government service and played a major role in the many tree and shrub varieties released by the PMC over the past years. We wish Mike a happy retirement and will miss all his experience and knowledge he has shared working with trees and shrubs.

Leslie Glass transferred to the Tucson PMC effective January 17, 2011. She will continue her role serving as the National PMC Webmaster, as well as part-time secretary for the Tucson PMC. Congratulations to Leslie, we wish her the best in her new job.

National Park Project Update

The Plant Materials Center continues to work cooperatively with three National Parks. Cooperative reimbursable agreements have been signed with Theodore Roosevelt National Park in North Dakota, Badlands National Park in South Dakota, and Grand Teton National Park in Wyoming. These agreements call for the PMC to produce native seed from seed sources initially collected within each park boundary. The seed harvested from seed increase fields will be given to the parks for reseeding disturbed areas within the park boundaries. We are in the process of signing a new 2-year agreement with Theodore Roosevelt National Park (2011, 2012), and extending the agreement for Badlands National Park for one more year (2011). A new 3-year agreement in 2010 was signed with the Grand Teton National Park (2010, 2011, 2012). Currently, the PMC has 14 seed production fields totaling 7.07 acres of native grass species for these three parks.

Cow Pea Trial

The interest in cow pea for use in cover crop plantings in the Northern Great Plains has increased extensively over the past few years. Cow peas are a southern crop. There are no proven cow pea varieties that will consistently produce seed for harvest within the Northern Great Plains region's relatively short growing season. The PMC located three germplasm lines that had been recently released as US-1136, US-1137 and US-1138. Seed from these sources was received from US Vegetable Laboratory at Charleston South Carolina. A replicated planting was planted at the PMC on June 10th using these three germplasm lines. The variety Chinese Red was also included in the planting as a standard of comparison, as it is commonly used in cover crop plantings. On August 16, 2010, average height in inches were recorded: US-1136, 25 inches; US-1137, 28.67 inches; US-1138, 29.33 inches; and Chinese Red, 25.33 inches. The variety Chinese Red produced considerably less biomass than the other three sources but was the only source that set seed pods by the end of the growing season.

Cow pea replicated trial at the PMC

Sage-Grouse

Sage-grouse are ground dwelling birds native to sagebrush steppe ecosystems of the American West. Sage-grouse populations and habitat have been declining for several years. USDA continues to provide significant resources to enhance and preserve sage-grouse habitat. North Dakota and South Dakota are two of the 11 states where sage-grouse are found.

Big sage is a major food source and provides habitat for sage-grouse. The PMC, along with Bureau of Land Management and North Dakota NRCS state, area, and field office staff, began a project to study big sage planting as a way to enhance sage-grouse habitat.

Seed was hand harvested from a site near Marmarth, ND, in November 2009. The tiny seed was cleaned at the PMC. From a portion of the seed, approximately 2,200 plants were propagated in the greenhouse. Seedlings were moved to a shade house in the summer of 2010 and then moved to cold, dark storage for overwintering. These seedlings will be planted in 2011 in western North Dakota.

State Office staff assisted with transplanting big sage seedlings

As a way to get plantings out on the ground this year, 500 one-year old seedlings received from the Bureau of Land Management were planted in Bowman County, ND, on a CRP SAFE site. Spots of existing vegetation were chemically killed prior to planting into scattered plots. Protective tubes, 5 inches tall and 4

inches in diameter were cut from cardboard tubes that previously held weed control barrier. The precipitation in 2010 was above average at the planting site. The plants grew extremely well and mortality was very low. Plants will be monitored in 2011.

big sage seedlings

Grass Evaluation

A primary responsibility of the Plant Materials Program is the release of adapted plant materials for conservation plantings. Steps leading to an herbaceous release include collection, accessioning (ID number), propagation of collections, establishment of a replicated evaluation plot, evaluations, establishment of a breeder seed increase field, and establishment of a foundation seed field. Following is a list of species that are currently at the Bismarck PMC in various stages of the release process. Initial collection for Indiangrass was vegetative material. Seed was collected for all other species. Field plots consist of three plant plots of each accession, replicated three times except for prairie dropseed. A standard of comparison, if available was included in field evaluation plots.

Prairie sandreed is a tall, warm-season, perennial grass with strong creeping rhizomes. It is an important species for soil stabilization, particularly on sandy soils.

Progress: Field evaluations were completed in 2008 and a breeder population was selected. The selected plants comprising the breeder population had similar flowering dates and displayed minimal or no stem and leaf rust. The seven selected plants originated from the Minnesota counties of Sherburne, Polk, Norman, Douglas, and Chisago. A breeder seed field was established in 2009 with plants propagated in the greenhouse from rhizome pieces. The breeder field was enlarged in 2010 and a small amount of seed (85 gm) was hand harvested.

Sand bluestem is a tall, warm-season perennial grass that grows primarily on sandy soils. Production of viable seed for the species in the Northern Great Plains is generally poor.

Progress: Field evaluations were completed in 2010 and a breeder population was selected. Flowering date and production of viable seed were criteria for selection. A breeder field will be established in 2011.

Indiangrass is a tall, tufted, warm-season, perennial grass. It is co-dominant with big bluestem and switchgrass in tall grass prairies.

Progress: Field evaluations were completed in 2009 and a breeder population was selected. Selected plants (25) originated from the Minnesota counties of Redwood, Douglas, Sherburne, and Kittson. Approximately 500 plants were propagated in the greenhouse by dividing the selected plants. These plants were used to establish the breeder seed field in 2010. Plants were vigorous and produced approximately 2 pounds of clean bulk seed. The breeder field will be expanded in 2011.

Prairie junegrass is a cool-season, perennial, short bunchgrass that is very common in mixed and shortgrass prairies. It produces very early season palatable forage.

Progress: Seed collections were propagated in 2008 and a field evaluation plot was established. Data has been collected since 2009 and will continue in 2011. Most plants have produced abundant seed.

Prairie dropseed is a densely tufted warm-season, perennial, often forming large circular clumps. The long leaves are fine textured and arch away from the center of the plant. It prefers light textured soils and moist prairies. It is the most palatable of the dropseed species in the Northern Great Plains. Seed production, seed quality, and seedling vigor is often poor.

Progress: Seedlings, propagated in the greenhouse were initially planted in single rows, (one row for each accession). Seed has been harvested each year since establishment. A portion of large seed was separated

from all previously harvested seed, with expectation of improving seedling vigor. The large seed was planted in the greenhouse and the seedlings produced were planted to a breeder seed field. Expansion of the breeder field and additional large seed studies are planned for 2011.

Virginia wildrye is a perennial, cool-season bunchgrass with flat leaves and resembles Canada wildrye. It typically grows 2-3 feet tall and has straight stiff heads with short awns. It prefers moist, low areas along woods and streams, but grows in various upland sites.

Progress: Seed from each collection was propagated in the greenhouse. Seedlings were planted to an evaluation field. Data was gathered in 2010 and seed from superior plants was collected for later use. Plant size was quite variable. Evaluations will continue in 2011.

SPECIES	COLLECTIONS YEAR	COLLECTIONS NO.	SELECTION CRITERIA	PROJECTED RELEASE YR.	USE
Prairie sandreed *Calamovilfa longifolia*	2003	38	disease resistance, rhizome spread, leafiness, seed production, flowering date, forage quality	2010	sandy soils
Sand bluestem *Andropogon hallii*	2003-2004	21	leafiness, seed production, flowering date	2011	sandy soils, rangeland, landscape
Indiangrass *Sorghastrum nutans*	2005	41	leafiness, texture, flowering date, color, plant form, forage quality, seed production	2012	forage, landscaping
Prairie dropseed *Sporobolus heterolepis*	1998-2005	3	seed production, plant form, forage quality, seed germination and seedling vigor	2012	prairie restoration, wildlife, landscaping
Prairie junegrass *Koeleria macrantha*	2006-2007	97	seed production, forage quantity and quality, flowering date	2013	early forage, prairie restoration

Conservation Priorities

Current work at the PMC focuses on ten major conservation priorities: Streambank & Lakeshore Stabilization; Warm-Season Grass Promotion and Development; Alternative & Specialized Use of Conservation Plants; Tree & Shrub Related Technology; Native Prairie Ecosystem Restoration; Saline & Alkaline Tolerant Plant Materials; Wetland and Riparian Plant Materials; Filter Strips & Nutrient Management; Information, Education & Outreach; and Urban Conservation.

Who We Are

The Bismarck Plant Materials Center is one of 27 Plant Materials Centers operated by the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). The Center serves the States of Minnesota, North Dakota, and South Dakota. It is the mission of the Plant Materials Program to develop plant materials and plant science technology for the conservation of our natural resources.

Back row, L-R: Mike Knudson, Wayne Duckwitz, Earl Aune Front row, L-R: Dennis DeVault, Chandra Heglund, Nancy Jensen, Rachel Bergsagel, Sasha Bergsagel, Leslie Glass, and Mike Bellon

Bismarck PMC Staff

Dwight Tober, Plant Materials Specialist (not shown)
Wayne Duckwitz, PMC Manager
Mike Knudson, Forester/Assistant Manager
Nancy Jensen, Agronomist
Leslie Glass, PMC Secretary/NPMP Webmaster
Rachel Bergsagel, Biological Science Technician
Earl Aune, Biological Science Technician
Mike Bellon, Biological Science Technician
Dennis DeVault, Biological Science Aid (Int.)
Sasha Bergsagel, Biological Science Aid (Int.)
Chandra Heglund, Biological Science Aid (Int.)
Kyle Wolf, Biological Science Aid (Int.) not shown

Helping People Help the Land

January 2011