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Department of
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**Natural Resources
Conservation Service**

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Aberdeen Plant Materials Center

Long Range Plan 2011-2020



**Aberdeen Plant Materials Center
Home Farm**

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I. Preface and Signatures

The mission of the NRCS Plant Materials Program is to develop and transfer effective state-of-the-art plant science technology to meet customer and resource needs. NRCS established the Aberdeen Plant Materials Center (PMC) in 1939 to supply seed, plants, technical data and guidance to the grassland program of the Western United States. The program has evolved significantly since those early days as described in this Long Range Plan.

Permanent PMC staff includes the team leader (manager), plant scientist (agronomist/rangeland specialist), farm manager, biological science technician and an administrative assistant. A NRCS plant materials specialist serves Idaho and Utah and is headquartered at the NRCS Idaho State Office in Boise. The South Bingham Soil Conservation Districts plays a key role in the operation of the PMC by providing land (two farms), farm buildings and support for summer workers. The University of Idaho also plays a supportive role in the operation of the PMC by providing services to the PMC office and greenhouse and administrative support for summer workers.

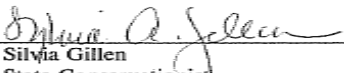
This Long Range Plan identifies actions the PMC will take to help solve high-priority resource problems identified within the Service Area. It is consistent with the goals and objectives identified in the NRCS Strategic Plan.

The plant material needs of the Aberdeen PMC Service Area fall into ten major priorities. The highest priorities include: rangeland and forestland; wildlife habitat; riparian-wetland; plant releases and seed and plant production; and equipment, facilities and personnel. Based on current funding and personnel levels, the PMC is not able to assign specific actions to medium and low priority needs categories. Medium priority needs may be addressed as actions are taken to meet the needs of the high priority categories and as additional funds become available. Occasional written materials may also be developed to assist with the identified medium priority needs.



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State Conservationist
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Date: 11/5/10



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Date: 11/15/10

**Aberdeen Plant Materials Center
Long Range Plan
2011 – 2020**

II. Introduction

The mission of the Plant Materials Program is to develop and transfer effective state-of-the-art plant science technology to meet customer and resource needs. The purpose of the Plant Materials Program is to carry out specialized activities in resource conservation, as part of the overall program of the Natural Resources Conservation Service (NRCS).

The responsibility of the Aberdeen Plant Materials Center (PMC) is to: 1) assemble, test, and release plant materials for conservation use, 2) determine techniques for the successful use and management of conservation plant species, 3) facilitate the commercial increase of conservation plants, and 4) provide for the development and transfer of state-of-the-art applied plant science technology.

This Long Range Plan will guide and direct the PMC operations toward solving high-priority resource problems identified within the Service Area. It is consistent with the goals and objectives identified in the NRCS Strategic Plan.

III. Long Range Plan Development

This Long Range Plan has been developed in accordance with the National Plant Materials Manual, Part 540.11– 540.13. It is a guide for directing plant materials center activities within the states served. The PMC Technical Advisory Committee and State Plant Materials Committees are responsible for identifying customers, resources, and program needs.

NRCS Goals and Objectives as listed in the National Plant Materials Manual, Exhibit 539-1, categorize program needs.

The Technical Advisory Committee and State Plant Materials Committees recommend studies needed at the PMC to meet identified concerns. Specific study areas and special concerns are defined by these committees and reviewed by the State Conservationist Advisory Committee. Projects are incorporated into the PMC' s Annual Business Plan based on annual funding levels.

IV. Technology Transfer and Education

The continuous transfer of new technology from PMCs, universities, agricultural research and others to NRCS field personnel and land users is essential to meet customer expectations. The format of the technology must be user friendly, timely, and have technical support to insure understanding and appropriate use.

The Aberdeen PMC staff and plant materials specialist will provide an aggressive technology transfer program through new plant releases and planting techniques, demonstrations, formal and informal training, and in written form. Written materials may include technical notes, fact sheets, plant guides, scientific papers, and news articles.

V. National Action Plans, Projects and Studies

In an effort to coordinate and unify PMC activities, the Plant Materials Program initiated multiple PMC action plans and cooperative studies and projects. These coordinated projects and studies are designed to address larger scale issues that require the input of two or more PMCs. The national network of 27 Plant Materials Centers are uniquely suited to undertake national action plans, projects and studies of this nature. They represent an effort to utilize the network of PMCs to directly contribute to improving NRCS technical vegetative recommendations and support the effects of conservation activities throughout the nation. These projects and studies will require some time each year for Aberdeen PMC staff and will be directly addressed in the Annual Business Plan.

VI. General Description of the Service Area

Size: 83,870,000 acres

Climate: USDA Plant Hardiness Zones 4, 5, 6 are within the area served. The climate is continental, changes rapidly with elevation, and is characterized by wet winters and dry summers. Summers have cool nights and warm days. Precipitation occurs mostly as winter snow or rain and spring rain, varying from less than 5 inches to over 30 inches annually. In southern and central areas of Nevada and Utah rain may also occur in mid-summer with monsoonal thunder storms.

Land Resource Regions: Portions of three Land Resource Regions (B, D and E) are included within the boundaries of the Aberdeen PMC Service Area.

Major Land Resource Areas: All or portions of 13 Major Land Resource Areas (MLRAs) and five states (Idaho, Nevada, Oregon, Utah, and Wyoming) are included in the Aberdeen PMC Service Area as follows:

B Northwestern Wheat and Range Region

- B9 Palouse and Nez Perce Prairies (Idaho and Oregon)*
- B10 Central Rocky and Blue Mountain Foothills (Idaho and Oregon)*
- B11 Snake River Plains (Idaho and Oregon)*
- B12 Lost River Valleys and Mountains (Idaho)
- B13 Eastern Idaho Plateaus (Idaho and Utah)

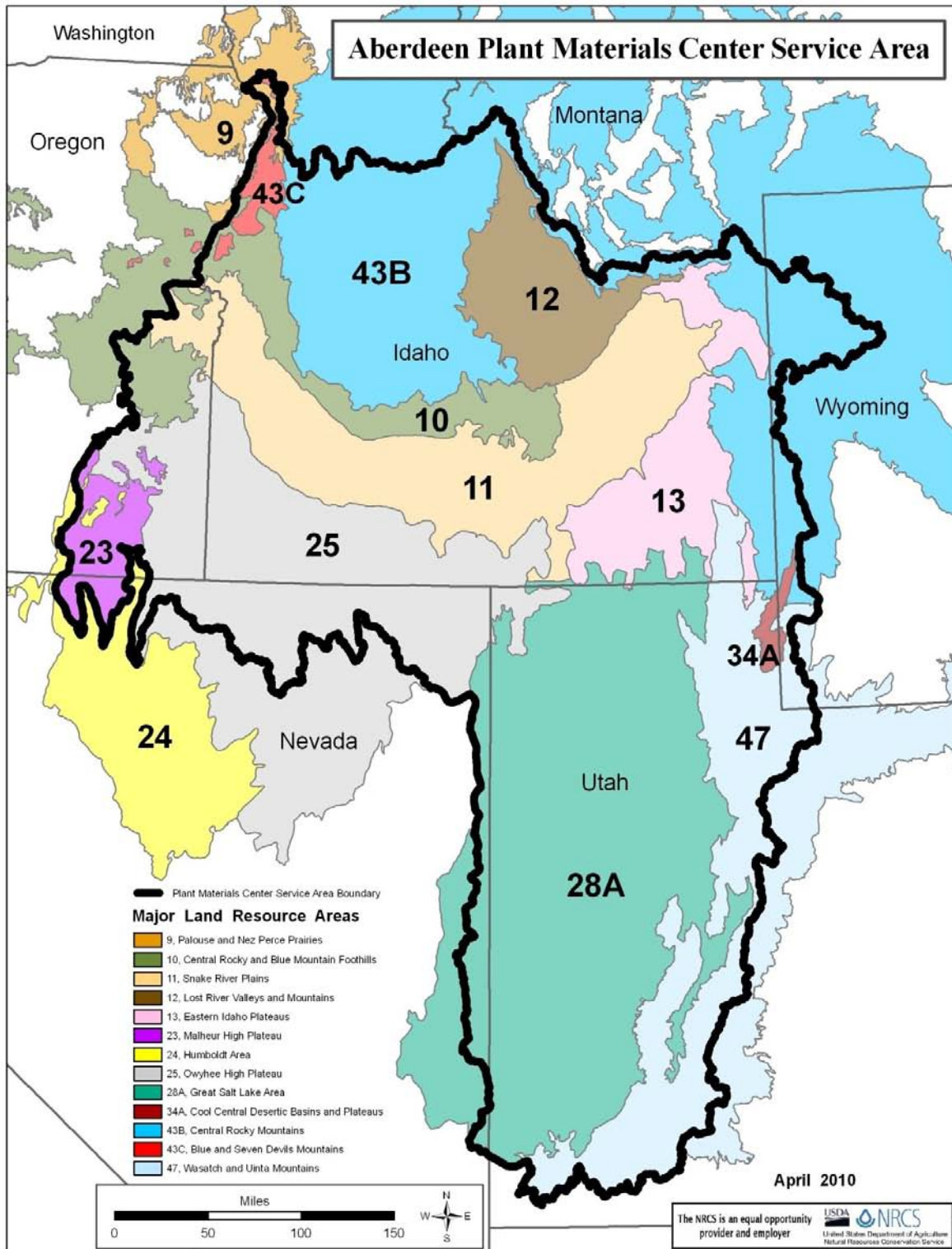
D Western Range and Irrigated Region

- D23 Malheur High Plateau (Oregon and Nevada)*
- D24 Humboldt Area (Oregon and Nevada)*
- D25 Owyhee High Plateau (Nevada, Idaho, Oregon and Utah)*
- D28A Great Salt Lake Area (Idaho, Utah and Nevada)*
- D34A Cool Central Desertic Basins and Plateaus (Utah and Wyoming)*

E Rocky Mountain Range and Forest Region

- E43B Central Rocky Mountains (Idaho, Utah and Wyoming)*
- E43C Blue and Seven Devils Mountains (Idaho and Oregon)*
- E47 Wasatch and Uinta Mountains (Idaho, Utah and Wyoming)*

* Indicates overlap with other PMCs' area of responsibility



A detailed description of Land Resource Regions, MLRAs, land use, and climate may be found in the reference “ Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean and the Pacific Basin,” Agricultural Handbook 296. 2006.

VII. NRCS Objectives, Needs, Recommended Actions

The priority plant material needs of the Aberdeen PMC fall into 5 major categories according to the National Plant Materials Manual, Exhibit 539-1; Goal 2:

1. Healthy and productive cropland sustaining U.S agriculture and the environment.
2. Healthy watersheds providing clean and abundant water supplies for people and the environment.
3. Healthy and productive grazing lands sustaining U.S. agriculture and the environment.
4. Healthy and productive wetlands sustaining watersheds and wildlife.
5. High quality habitat on private lands supporting the nation' s wildlife heritage.

The plant material needs of the Aberdeen PMC Service Area fall into 10 major priorities and are in accordance with the national program objectives. The highest priorities include: rangeland and forestland; wildlife habitat; riparian-wetland; plant releases and seed and plant production; and equipment, facilities and personnel. Based upon current funding and personnel levels, the PMC is not able to assign specific actions to categories identified as medium priority needs. These needs are listed with the intention that they may be addressed as actions are taken to meet the needs of the high priority categories and as additional funds become available. Occasional written materials may be developed to assist with the medium priority needs identified.

A. Categories Identified as High Priority Needs

1. Rangeland and Forestland

Large areas of rangeland and forestland are in unsatisfactory ecological condition and are producing forage and associated habitat well below potential. Many sites are infested with cheatgrass, medusahead, knapweed species and other invasive weeds. These areas provide poor diversity of vegetation for wildlife, generally have poor cover, and may have excessive rates of soil erosion. Wildfire consumes large acreages of poor ecological condition land each year. Reseeding large areas is costly with current methods and available plant materials. Threatened, endangered and sensitive species are destroyed, weeds are allowed to invade, water quality is degraded due to soil erosion, and watershed values are adversely affected. Critical wildlife habitat is affected.

Needs

- Plant and seed establishment techniques
- Establishment of woody shrubs from seed
- Development of native forbs to improve plant community diversity
- Facilitate commercial seed production of native and appropriate introduced plants
- Greenstrips or vegetative fuel breaks, often introduced species, to reduce wildfire hazard
- Information and management of threatened, endangered and sensitive plants
- Strategies for invasive weed management including chemical and mechanical control, integrated pest management, and revegetation strategies

Actions

- a. Develop native, performance-tested rangeland/forestland grasses, forbs, and shrubs
- b. Cooperate with other researchers to develop integrated pest management strategies for invasive plants such as cheatgrass, medusahead, knapweed species, starthistle, rush skeletonweed, etc.
- c. Continue cooperative relationships with plant development/land management agencies
- d. Equipment/technology development for improved plant establishment on rangelands
- e. Develop information on threatened, endangered and sensitive plants

2. Wildlife Habitat

Food and cover habitat for wildlife have been seriously reduced or eliminated in many areas by intensive farming practices, poor rangeland and forestland ecological condition, wildfire, reduced winter forage, overgrazing, extensive development of housing and transportation corridors, and more intensive management of forests.

Needs

- Information on adapted species and cultural methods for establishment
- Native forbs for rangeland and forestland areas
- Enhance areas with inter-seeding technology and prescribed burning
- Enhance existing habitat to reduce loss of critical habitat to urbanization
- Establishment of woody shrubs from seed and by plants when appropriate
- Information on buffer strips, including windbreaks and greenstrips/fuel breaks
- Information on pest management
- Information and plant releases to enhance pollinators
- Information and plant releases to enhance sage-grouse habitat

Actions

- a. Develop performance-tested grasses, forbs, and shrubs with specific wildlife values
- b. Develop equipment and technology for improved plant establishment
- c. Develop information and plant releases to enhance native pollinators
- d. Develop information and plant releases to enhance sage-grouse habitat

3. Riparian - Wetlands

Concentrated runoff water causes gully, perennial and intermittent stream erosion. Floods cause streambank and gully erosion on cropland, rangeland, forestland, pastureland, and meadows. Desirable streamside vegetation is degraded, and it is difficult to prepare planting sites and protect such sites during establishment.

Needs

- Riparian species information and restoration techniques
- Streambank stabilization with trees and shrubs
- Techniques to establish wetland species with seed
- Urban development of storm-water collection and treatment facilities
- Low growing, aggressive, stiff, sod-forming species for concentrated flow erosion
- Filter and buffer strips

Actions

- a. Identify native riparian-wetland plants for use in restoring plant communities
- b. Technology transfer of bioengineering techniques for establishment and management of plants for degraded and intermittent riparian zones
- c. Studies to determine techniques to establish wetland species with seed
- d. Studies to determine best species for herbaceous buffers – water quality practices
- e. Technology transfer of design criteria and adapted plant and management techniques

- f. Continue cooperative relationships with plant development and land management agencies

4. Plant Releases, Seed and Plant Production

A major responsibility of the PMC is the maintenance of Breeder seed and production of Foundation or early Generation quality seed of the plant releases from the center. Foundation and early Generation seed is made available to the commercial seed industry through the University of Idaho Agricultural Experiment Station, Idaho Crop Improvement Association, Utah Crop Improvement Association, other plant materials centers and cooperating agencies. Allocation and exchange through written agreements are used to distribute seed. Foundation and early Generation seed of recent releases may be provided to soil conservation districts for Registered, Certified or next Generation seed production under the District Seed Increase Program. Seed for field and demonstration plantings is made available to cooperators through soil and water conservation districts in order to determine proper uses, adaptation, new technology, and to promote and demonstrate the values of new plant releases.

Actions

- a. Maintain Breeder, Foundation and early Generation seed of released materials
- b. Maintain genetic superiority and characteristics of released materials
- c. Release new plant materials
- d. Develop techniques for facilitation of commercial production

5. Equipment, Facilities and Personnel

For the PMC to function effectively and efficiently, equipment and facilities must be maintained and upgraded as new technology becomes available. Buildings, farm machinery, greenhouse and research equipment, as well as computer hardware and software, must be maintained and upgraded. Funding for improvements can be difficult to obtain. Because of rapidly changing technology, PMC personnel must continually learn new skills to be effective in developing and transferring new plant science technology.

Needs

- Continue equipment and facility upgrades
- Training opportunities for PMC personnel

Actions

- a. Continue cooperative working relationship with South Bingham Soil Conservation District, University of Idaho, and Idaho Department of Fish and Game
- b. Maintain facilities and equipment
- c. Review needs and make purchases as funds allow
- d. Obtain training to keep employees informed and educated in new technology

B. Categories Identified as Medium Priority Needs

Based on current funding and personnel levels, the PMC is not able to assign specific actions to needs categories identified as medium priority. They are listed with the intention that they may be addressed as actions are undertaken to meet high priority needs. While intensive PMC plant development work will not generally be performed for medium priority needs, occasional written materials may be developed to assist with these needs.

1. Pastureland

Pastureland is producing below potential on sites with both good and poor soils and soil situations including low fertility, poor drainage, high sodic or saline conditions, and stony or excessively drained conditions. Improper grazing management, species selection, irrigation, and fertility practices commonly result in lower productivity and loss of more desirable species.

Needs

- Plant materials best suited to intensive grazing on irrigated pastures
- Plant materials for saline soils
- Pasture renovation including no-till
- Pasture and hayland management practices (grazing, fertilization, irrigation)

2. Agroforestry

Many woody species have been tested and their effectiveness is known for agroforestry applications. Design criteria and management for windbreaks is known. Researchers know the beneficial effects of windbreaks on crop quality, and quantity and water use efficiency. The beneficial effects of windbreaks to reduce windborne soils and snow are also well understood. However, there is a continuing need to transfer this knowledge and promote agroforestry practices to land users.

Needs

- Communicate benefits of agroforestry to landowners
- Demonstration/installation of agroforestry practices
- Information on plantation species
- Information on buffer strips including windbreaks and field borders
- Maintain PMC windbreak plots for display and training purposes

3. Sheet and Rill Erosion on Cropland

High intensity rains, rain-on-snow, spring thaw, and runoff cause soil erosion of open cropland fields. The season of greatest erosion is during spring and with summer thunderstorms. Low residue crops, down slope farming, and highly erodible soils contribute to the erosion problem. There is a lack of available information on the application of some practices. Information is needed on the affects of practices on water quality.

Needs

- Economically viable alternative crops to improve rotations
- Information on cover and green manure crops
- Information on buffer practices including windbreaks, field borders, filter strips, riparian buffers, and grassed waterways

4. Wind Erosion on Cropland

Strong winds cause soil erosion of open fields, usually in the spring. Low residue crops and highly erodible soils contribute to the problem. There may be a lack of user-friendly information for landowners on the value of windbreaks and cover crops.

Needs

- Information on cover and green manure crops
- Information on buffer strips including windbreaks and field borders

5. Critical Area Treatment

Large areas of land are disturbed or damaged each year. Many acres are disturbed by practices such as highway, dam, dike, or pond construction and by urban development and mining. Other land is affected by natural events such as landslips, floods, etc. The soils are commonly a composite of rock and mixed soil material or denuded by wind and water erosion. These areas may be very droughty with low water holding capacities, are generally infertile, and may have high levels of calcium, sodium, or other minerals that make establishing vegetation difficult. Seedbed preparation may be very difficult.

Needs

- Information on critical area planting and seeding techniques and species
- Information on bioengineering practices for disturbed land
- Information on chemical and fertilizer soil amendments
- Information on special stabilization techniques to allow establishment of vegetation such as fiber mats, mulches, etc.

VIII. PLANTS RELEASED BY ABERDEEN PLANT MATERIALS CENTER - 2010

Aberdeen Selection Laurel willow, a long-lived, naturalized, tall shrub used primarily in windbreak and ornamental plantings. Released in 1997.

Alkali bulrush - Bear Lake, Bear River, Fort Boise, and Stillwater Selections, a long-lived, native, perennial, aggressively sod-forming grass-like plant that often forms large colonies in wet marshy or shoreline areas. Released in 1997 for MLRAs B and D.

Anatone Selection bluebunch wheatgrass, a long-lived, native, drought tolerant, bunchgrass used in rangeland and other natural area plantings. Released in 2004.

'Appar' blue flax, a short-lived, naturalized, perennial, naturally reseeding forb used on rangeland, mine spoil, highway right-of-way, and ornamental plantings. Released in 1980.

Baltic rush - Railroad Valley, Roswell, Sterling and Stillwater Selections, a long-lived, native, perennial, wiry, aggressively sod-forming grass-like plant that often forms large colonies in semi-wet meadow and saturated areas. Released in 1997 and 1998 for MLRAs B and D.

'Bannock' thickspike wheatgrass, a long-lived, native, very drought tolerant, weakly sod-forming grass used in rangeland and other natural area plantings. Released in 1995.

Clearwater Selection Venus penstemon, a long-lived, native, showy, perennial forb used in rangeland, mine spoil, highway-right-of-way, and ornamental plantings. Released in 1994.

Common threesquare - Fort Boise, Malheur, Market Lake, and Wayne Kirch Selections, a long-lived, native, perennial, aggressively sod-forming grass-like plant that often forms large colonies in semi-wet meadow and saturated areas. Released in 1997 and 1998 for MLRAs B and D.

Creeping spikerush - CJ Strike, Malheur, Mud Lake, and Ruby Lake Selections, a long-lived, native, sod-forming grass-like plant that can be singular or in large colonies in very wet meadows to shallow water areas. Released in 1997 for MLRAs B and D.

'Delar' small burnet; a long-lived, evergreen, perennial forb used primarily in rangeland, disturbed areas, and wildlife plantings. Released in 1981.

'Ephraim' crested wheatgrass, a long-lived, introduced, somewhat drought tolerant, bunchgrass used in critical area plantings for stabilization and erosion control. Released in 1983.

'Goldar' bluebunch wheatgrass, a long-lived, native, somewhat drought tolerant, bunchgrass used in rangeland and other natural area plantings. Released in 1989.

Hardstem bulrush - Camas, Hagerman, Ogden Bay, and Stillwater Selections, a long-lived, native, very tall, aggressively sod-forming grass-like plant that often forms large colonies in very wet shallow water areas. Released in 1997 for MLRAs B and D.

'Magnar' basin wildrye, a long-lived, native, drought tolerant, very large bunchgrass used in herbaceous windbreak, rangeland, and other natural area plantings. Released in 1979.

Maple Grove Selection Lewis flax, a short-lived, native, perennial, naturally reseeding forb used on rangeland, mine spoil, highway right-of-way, and ornamental plantings. Released in 2004.

Nebraska sedge - Centennial, Modoc, Ruby Lake, and Sterling Selections, a long-lived, native, perennial, highly palatable, densely sod-forming grass-like plant found in wet to semi-wet areas. Released in 1997 for MLRAs B and D.

‘Nezpar’ Indian ricegrass, a long-lived, native, very drought tolerant bunchgrass used for sandy soil stabilization and as winter forage for livestock and wildlife. Released in 1978.

Northern Cold Desert Selection winterfat, a long-lived, low growing, drought and cold tolerant native shrub used in rangeland and other natural area plantings in northern climates. Released in 2001.

‘ Paiute’ orchardgrass, a long-lived, introduced, high producing, highly palatable bunchgrass used primarily in non-irrigated or irrigated pasture plantings above 16 inches rainfall. Released in 1983.

‘Recovery’ western wheatgrass, a long lived, native, drought tolerant rhizomatous grass used primarily on rangeland and for critical area plantings. Released in 2009.

‘Regar’ meadow bromegrass, a long-lived, introduced, high vigor, rapid regrowth, highly palatable, mildly sod-forming grass use primarily in non-irrigated or irrigated pasture plantings above 14 inches rainfall. Released in 1966.

Richfield Selection firecracker penstemon, a long-lived, native, drought tolerant, very showy, perennial forb used in rangeland, mine spoil, highway-right-of-way, and ornamental plantings. Released in 1994.

‘Rush’ intermediate wheatgrass, a long-lived, introduced, high seedling vigor, rapidly growing, high producing, highly palatable, mildly sod-forming grass use in rangeland, non-irrigated, and irrigated plantings above 11 inches rainfall. Released in 1994.

Snake River Plains Selection fourwing saltbush, a long-lived, mid-sized, drought and cold tolerant native shrub used in rangeland and other natural area plantings in northern climates. Released in 2001.

‘Sodar’ streambank wheatgrass, a long-lived, native, very drought tolerant, sod-forming grass used in critical area, erosion control, rangeland and other natural area plantings. Released in 1954.

‘Tegmar’ dwarf intermediate wheatgrass, a long-lived, introduced, late maturing, sod-forming grass used in critical area and erosion control plantings. Released in 1968.

‘Vavilov II’ Siberian wheatgrass, a long-lived introduced, very drought tolerant bunchgrass used primarily on rangeland seedings. Released in 2008.

Discontinued Aberdeen PMC Releases

‘P27’ Siberian wheatgrass – released in 1953 and discontinued in 2009.

‘Pomar’ dwarf orchardgrass – released in 1966 and discontinued in 1994.

‘Topar’ pubescent wheatgrass – released in 1953 and discontinued in 2001.

IX. PMC Business Plan