

540.51 Example of a PMC Long Range Plan

PLANT MATERIALS CENTER LONG RANGE PLAN

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

The PMC Long Range Plan (LRP) identifies, guides, and directs PMC operation toward solving high-priority resource problems identified in the state(s) Plant Materials LRP. Plant Materials Centers may be directed by one or more state LRPs depending on the number of states served by the Center. The PMC LRP is consistent with goals and objectives identified in the NRCS Strategic Plan.

II. Long Range Plan Development

This LRP is in accordance with the revised National Plant Materials Manual, Part 540.2(C)(1). This plan is to act as a guide for directing Plant Materials Center activities within the state(s) served. The PM Technical Committee(s) is responsible for identifying customers, resources, and program needs. The PM Technical Committee consists of representatives from NRCS and other federal and state agencies, private industry, and universities. Advisory members may have an interest due to financial contributions made to the Center.

Needs are categorized by the NRCS Goals and Objectives as listed in the revised National Plant Materials Manual, See exhibit in Section 539.20 (NRCS Goals and Objectives) and Plant Materials Strategic Plan.

The PM Technical Committee and/or State Plant Materials Committee recommends studies needed at the Center to meet identified concerns. Specific study areas and special concerns are defined by the PM Technical Committee and reviewed by the State Conservationist Advisory Committee. Projects budgeted are incorporated into the Center's Plan of Operation Annual Business Plan.

General Description of the Service Area

Climate - USDA Plant Hardiness Zones 4, 5, 6 are within the area serviced. The climate is continental, changes rapidly with altitude, 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.

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 Service Area. MLRAs include the following:

B - Northwestern Wheat and Range Region

- B10 Upper Snake River Lava Plains and Hills (Idaho)*
- B10A Big and Little Wood River Footslopes and Plains (Idaho)
- B11 Snake River Plains (Idaho and Oregon)*
- B11A Central Snake River Plains (Idaho)
- B11B Upper Snake River Plains (Idaho)
- 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)*
- D25 Owyhee High Plateau (Nevada, Idaho, Oregon, Utah)*
- D28A Great Salt Lake Area (Idaho, Utah, Nevada)*

E - Rocky Mountain Range and Forest Region

- E43B Central Idaho Rocky Mountains (Idaho, Utah, and Wyoming)*
- E43C West Central Idaho Rocky Mountains (Idaho)*
- E47 Wasatch and Uinta Mountains (Idaho, Utah and Wyoming)*

*** Indicates overlap with other PMC's area of responsibility**

A detailed description of MLRAs, land use, and climate may be found in the reference "Land Resource regions and Major Land Resource Areas of The United States," Agricultural Handbook 296.

III. NRCS Objectives, Needs, Recommended Actions

The priority plant material needs of the Plant Materials Center fall into four goals according to the PM Technical Committee:

NRCS Mission Goal: High Quality, Productive Soils

NRCS Mission Goal: Clean and Abundant Water

NRCS Mission Goal: Healthy Plant and Animal Communities

NRCS Mission Goal: Clean Air

The plant material needs of the PMC Service Area fall into nine major priorities and are in accordance with the national program objectives. The highest priorities include: plant releases and seed and plant production; rangeland in poor ecological condition; riparian and wetland degradation; clean air; 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 and low 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. Written materials may be developed to assist with the medium and low priority needs identified.

A. Plant Releases, Seed and Plant Production**Priority Ranking: High**

A major responsibility of the PMC is the maintenance of Breeder seed and production of foundation quality seed of the plant releases from the Center. Foundation seed is made available to the University Agricultural Experiment Station, Crop Improvement Associations, other Plant Materials Centers and cooperating agencies. Allocation and exchange or other written agreements distributing seed will be documented. Foundation seed of recent releases may be provided to soil conservation districts for Registered or Certified seed production under the District Seed Increase Program. Seed for field plantings is also made available to cooperators through soil and water conservation districts in order to determine proper uses, adaptation, proper technology, and to promote and demonstrate the values of recent releases.

Actions

1. Maintain Breeder and Foundation seed of released materials
2. Maintain genetic superiority and characteristics of released materials
3. Release new plant materials
4. Develop techniques for facilitation of commercial production

B. Rangeland in Poor Ecological Condition**Priority Ranking: High***Problems*

Large areas of rangeland are in unsatisfactory condition and are producing well below potential. Many sites are infested with cheatgrass, medusahead rye, and other weeds. These areas provide poor diversity of vegetation for wildlife, generally have poor cover, and commonly erode at excessive rates. Wildfires consume large acreages each year because of their flash fuel characteristics. Reseeding large areas is costly with current methods and available plant materials. Threatened and endangered species are destroyed, weeds are allowed to invade, water quality is degraded due to erosion, and watershed values are adversely affected. Critical wildlife winter habitat is affected.

Needs

- Native plants and establishment techniques
- Facilitate commercial seed production of native plants
- Strategies for invasive weed management including chemical control, integrated pest management, revegetation strategies
- Greenstrips to reduce wildfire hazard
- Establishment of woody shrubs from seed
- Development of native forbs to improve vegetation diversity for wildlife

Actions

1. Develop native, performance-tested rangeland grasses, forbs, and shrubs
2. Develop Integrated Pest Management strategies for invasive plants such as cheatgrass, medusahead rye, yellow starthistle, rush skeletonweed, etc.
3. Continue cooperative relationships with other plant development and land management agencies
4. Equipment and technology development for plant establishment on rangelands

C. Riparian and Wetland Degradation**Priority Ranking: High***Problems*

Concentrated runoff water causes gully, perennial and intermittent stream erosion. Floods cause streambank and gully erosion on cropland, rangeland, pastureland, and meadows. Desirable streamside vegetation is degraded, and it is difficult to prepare a seedbed and protect such sites during establishment. Created wetlands can help improve water quality. There is a lack of commercially available seed or plants for riparian and wetland areas.

Needs

- Riparian and wetland species and restoration techniques
- Riparian and wetland habitat management
- Streambank stabilization with trees and shrubs
- Urban development stormwater collection
- Low growing, aggressive, stiff, sod-forming species for concentrated flow erosion
- Filter and buffer strips

Actions

1. Identify native riparian-wetland plants with high potential for use in restoring plant communities
2. Develop bioengineering techniques for establishment and management of trees, shrubs, grasses, and grass-like plants for degraded and intermittent riparian zones
3. Design criteria and adapted plant and management techniques for constructed wetland systems to treat non-point source pollution
4. Continue cooperative relationships with other plant development and land management agencies

D. Clean Air (Agroforestry)**Priority Ranking: High***Problems*

Many tree and shrub species have been tested and their effectiveness is known for agroforestry applications. Design criteria and management for windbreaks is also 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. There is a continuing problem with air quality and how windbreaks can be used to mitigate odors and sediment. This information also needs to be transferred to land users.

Needs

- Develop design criteria for using windbreaks to mitigate odors and sediment from livestock and poultry operations
- Communicate benefits of agroforestry to landowners
- Demonstration/installation of agroforestry practices
- Information on species for buffer strips including windbreaks and field borders

Actions

1. Develop design strategy and install sample field windbreaks to test placement for odor mitigation
2. Develop list of species that work best in mitigating odor and wind carried particles
3. Maintain PMC windbreak plots for display and training purposes
4. Maintain testing of poplar species for plantation applications
5. Maintain testing activities off-center
6. Demonstrate installation of agroforestry practices
7. Continue cooperative relationships with research and extension people involved in agroforestry

E. Wildlife Habitat

Priority Ranking: - High

Problems

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

Needs

- Information on adapted species and cultural methods for establishment
- Native forbs for rangeland areas
- Enhance areas with interseeding technology and burning
- Reduce loss of critical habitat to urbanization
- Establishment of woody shrubs from seed
- Information on buffer strips, including windbreaks and greenstrips
- Information on pest management

Actions

Develop list of plants and management techniques that address species of concern.

F. Equipment, Facilities and Personnel

Priority Ranking: High

Problems

In order for the PMC to function effectively and efficiently, equipment and facilities must be maintained and upgraded as new technology becomes available. Farm machinery, greenhouse and research equipment, as well as computer hardware, software and buildings, 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

1. Continue cooperative working relationship with Soil Conservation District, University, and Department of Fish and Game
2. Maintain facilities and equipment
3. Review needs and make purchases as funds allow
4. Obtain training to keep employees informed and educated in new technology
5. Promote funding

G. Categories Identified as Medium or Low Priority

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

1. Low Quality Pastureland **Priority Ranking: Medium**

Problems

Pastureland is producing below potential on sites with 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. Sheet and Rill Erosion on Cropland **Priority Ranking: Medium**

Problem

High intensity rains, rain-on-snow, spring thaw, and runoff cause erosion of open cropland fields. The season of greatest erosion is during spring and with summer thunderstorms. Low residue crops, downslope farming, and highly erodible soils contribute to the erosion problem. There is 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 create improved rotations
- Information on cover and green manure crops
- Information on buffer practices including windbreaks, field borders, filter strips, riparian buffers, and grassed waterways

3. Wind Erosion on Cropland

Priority Ranking: Medium

Problems

High winds cause erosion of open fields, usually in the spring. Low residue crops and highly erodible soils contribute to the problem. There is a lack of 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

4. Critical Area Treatment

Priority Ranking: Medium

Problems

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.

5. Irrigation Induced Erosion on Cropland

Priority Ranking: Low

Problems

Thousands of acres of irrigated cropland have excessive erosion caused by poor irrigation systems and irrigation water management. Irrigation-induced erosion is most common on surface irrigated fields, but some sprinkler irrigation systems cause problems as well.

Needs

- Information on filter strips
- Information on PAM
- Information on irrigation systems and irrigation water management