

## **540.50 Example of State Plant Materials Long Range Plan**

### **STATE PLANT MATERIALS LONG RANGE PLAN**

**2005-2010**

#### **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: 1) assemble, test, and release plant materials for conservation use, 2) determine techniques for successful use and management of conservation species, 3) facilitate the commercial increase of conservation species, 4) provide for the timely development and transfer of effective state-of-the-art applied science technology to solve conservation problems, and 5) promote the use of plant science technology to meet the goals and objectives of the NRCS Strategic Plan.

The state Plant Materials LRP identifies and prioritizes customer, resource, and program needs. The LRP presents proposed action items to address identified needs.

#### **II. Long Range Plan Development**

This LRP was developed in accordance with the revised National Plant Materials Manual, Part 540.1. This plan is intended to be used as a guide for directing plant materials activities within the state. This plan will be used along with the respective plans of the other states within the service area to develop the Plant Materials Center LRP. This plan may also serve as a reference to develop specific action items which will be incorporated into the state's annual Business Plan.

The listing of identified customer, resource, and program needs were developed by the State Plant Materials Committee. The Plant Materials Committee is comprised of both NRCS employees and non-NRCS partners who have an interest in plant materials work. See Appendix A for a listing of committee members. Along with the input provided by the committee members, additional references were used to help identify and prioritize problems and needs. These are listed in Appendix B. Needs were categorized by the NRCS Goals and Objectives as listed in the National Plant Materials Manual, See exhibit in Section 539.20 (NRCS Goals and Objectives).

#### **III. NRCS Objectives, Needs, Recommended Actions**

A summary of problems, needs, and recommended actions are provided in Table 1. Details are provided in the following text.

**NRCS Objective: High Quality, Productive Soils**

- (1) Degradation in the quality of intensively used soils has occurred through the production of an abundant food supply. The primary areas of concern are located within MLRA's 76 and 106 and cover approximately 1,347,000 acres. The soils in these areas are typically deep, moderately well drained and are gently sloping to steeply sloping. The soils have been formed from loess and glacial till. Increasing soil condition and soil carbon can be improved by minimum tillage and cover crops. Information on these practices is found in the FOTG. In 2003, 60 percent of cropland was farmed under systems that maintained or increased soil condition or soil carbon. Adequate plant materials and technology are currently available to carry out appropriate practices necessary to address the problem. The need exists to transfer current plant materials and technology information to identified customers.

Recommended Action: Summarize existing information on suitable plant materials and accompanying technology needed in implementing the appropriate conservation practice. Transfer this information to identified customers.

Priority Ranking: High

**NRCS Objective: Clean and Abundant Water**

- (1) Degradation of water quality has occurred through excessive sedimentation from unstable streambanks and shorelines. The areas of concern are along stream corridors and reservoirs located through the state in all MLRA's. Current and past agricultural practices have resulted in the loss of riparian vegetation necessary to stabilize the stream course resulting in unstable conditions and excessive sedimentation. It has been estimated that 85 percent of the riparian areas within Kansas are in need of improvement. Creation of reservoirs with accompanying drastic changes in water level has resulted in shorelines exposed to severe erosion. Information pertaining to the stabilization of streambanks and shorelines are found in the FOTG and the Engineering Field Handbook Chapter 16, Streambank and Shoreline Protection. The need exists to identify locally available plant materials that may be used in carrying out those practices as outlined in the above references. In addition, establishment techniques for the identified species need to be investigated.

Recommended Action: Locally available and suitable plant materials for use in streambank and shoreline protection need to be identified and evaluated.

Establishment techniques need to be determined for the identified plant materials.

Priority Ranking: Medium

- (2) Degradation of water quality has occurred through nonpoint source contaminants from untreated and unconfined waste materials. Animal waste from feedlots has been identified as a major contributor to both surface and groundwater water quality problems, particularly nitrogen, throughout the state. Plants may play a major role in removing excess nutrients in agricultural waste filter systems, constructed wetlands, and in waste disposal areas. Conservation practices such as riparian forest buffers, contour buffer strips, field borders, and filter strips may remove not only sediment, but also organic matter, various pesticides and nutrients such as nitrogen and phosphorous. Adequate plant materials and technology are currently available to carryout appropriate conservation practices

necessary to address the problem. The need exists to transfer current plant materials and technology information to identified customers.

Recommended Action: Summarize existing information on suitable plant materials and technology needed to implement the appropriate conservation practices necessary to address the identified need, and transfer this information to the identified customer.

Priority Ranking: High

- (3) Degradation of water quality has occurred through point source contaminants and excessive soil erosion from saline, alkaline, and other mineralized soils. The majority of affected sites have resulted from past oil field activity. The affected sites are characterized by high soil salinity levels, excessive soil erosion, little soil structure or tilth, and lack of vegetation. While the majority of affected sites are less than 5 acres in size, collectively it is estimated that 100,000 affected acres exist statewide. The State Department of Health and Environment has identified these type sites as contributors to the non-point problem within the state. The need exists to identify plant materials and establishment techniques which will provide for the revegetation of these affected sites.

Recommended Action: Identify plant materials and establishment techniques that will provide for the revegetation of these affected sites.

Priority Ranking: Medium

- (4) Drought conditions have required irrigation to lands to maintain plant cover. This added water use is impacting stream and aquifer levels in the western part of the state. Adequate plant materials and technology are not currently available to carry out appropriate conservation practices necessary to address the problem. The need exists to collect, test, and release materials to satisfy this need.

Recommended Action: Collect, test, and release seed to provide drought tolerant plants.

Priority Ranking: High

### **NRCS Objective: Healthy Plant and Animal Communities**

- (1) Grassland: There is a lack of productive adaptive cool season perennial grasses that provide quality livestock forage as well as providing for erosion control within MLRA's 72, 73, 77, 78, and 79. Cool season perennial grass species are needed to extend the grazing season. The use of cool season grasses will allow grazing deferment of the native range and subsequent improvement of range health. Approximately 44 percent of the rangeland or 6,900,000 acres are in poor or fair ecological condition. The need exists to provide adaptive and productive cool season perennial grass species and establishment and maintenance information. Currently the FOTG lists only two cool season grass species that are approved for use in the above MLRA's. There are numerous cool season perennial grass species currently available that may address the need. However, adaptability and performance for many of these species have not been evaluated for the listed MLRA's.

Recommended Action: Evaluate and select cool season perennial grass species for adaptability, forage quality and quantity with respect to livestock grazing with MLRA's 72, 73, 77, 78, and 79.

Ranking Priority: High

- (2) **Wildlife Habitat:** Lack of diversity exists within rangeland seedings in terms of adapted native forbs, legumes, and shrubs. With the increased public interest in native species, federal program requirements for the use of native forbs, legumes, and shrubs (Conservation Reserve Program (CRP), Wildlife Habitat Incentive Program (WHIP), Environmental Quality Incentives Program (EQIP), Wetlands Reserve Program (WRP), and state and federal native species highway revegetation requirements, the demand for these adapted native forbs, legumes, and shrubs has greatly exceeded the supply. The need exists to provide additional sources of native forbs, legumes, and shrubs and the necessary information for propagation, establishment, and maintenance.

Recommended Action: Identify, collect, and evaluate suitable native forbs, legumes, and shrubs. Investigate propagation techniques, establishment methods, and maintenance requirements,

Priority Ranking: Medium

- (3) **Wetlands:** The creation, enhancement, and restoration of wetlands have gained much interest in light of legislation regarding wetlands and recent federal programs aimed at promoting wetlands conservation. There is a general lack of both plant materials and technology necessary for wetland enhancement, restoration, and creation to meet both regulatory and NRCS program requirements. The need exists to provide wetland species and accompanying technology regarding establishment and survival for those wetland species.

Recommended Action: Identify and select locally adapted wetland species for potential use in wetland restoration, enhancement and creation. Evaluate those selected plants in terms of propagation techniques, establishment methods, and maintenance requirements.

Priority Ranking: High

#### **NRCS Objective: Healthy Air Quality**

- (1) Odors, particles, and greenhouse gas emissions generated through agricultural activities such as the use of nitrogen fertilizers and on-farm fuels, as well as animal waste management, degrade air quality. As urbanization encroaches on agricultural lands, communities at the rural/urban interface are becoming more sensitive to these issues.

Recommended Action: Identify and implement low-cost opportunities to reduce odor-laden particles, and greenhouse emissions from agricultural sources.

Priority Ranking: Medium

#### **NRCS Objective: An Adequate Energy Supply**

- (1) The recent increases in energy prices faced by producers throughout the country emphasize the need to find new ways to improve the energy efficiency of U.S. agriculture. In the future, the challenge will be to improve energy efficiency in ways that maintain the productive capacity of the land while benefiting the environment. Development of more efficient machinery and selection of new plant varieties can improve energy efficiency. While bio-energy and bio-products can help replace fossil fuels, the challenge is to overcome the barriers to economic feasibility and ensure that the production of energy raw materials is environmentally beneficial at the farm level. There are opportunities to increase

the use of conservation plants and plant residues in the conversion to various forms of energy and bio-products.

Recommended Action: Collaborate with external agencies to develop bio-energy technology and determine the feasibility of using existing conservation plants for biofuels.

Priority Ranking: Medium

### **NRCS Objective: A Diverse and Well-Served Customer Base**

- (1) An important part of the NRCS Strategic Management Plan is addressing the civil rights issue. As part of this plan, the Plant Materials Program needs to be reviewed on a regular basis to determine if any systematic barriers exist that may result in disparate treatment of minority or small scale and limited resource groups. These groups should be identified and steps taken to assure that no barrier exists and to determine what steps need to be taken to reach these groups to ensure they are aware of the services provided by the Program.

Recommended Action: Develop a Native American Limited Resource Farmer outreach strategy that will promote awareness and utilization of the Plant Materials Program for the purpose of addressing identified cultural resource needs.

Ranking Priority: High

- (2) Many NRCS employees hired since 1985 have had limited exposure to the Plant Materials Program. Their understanding of the program and the services available is severely limited, especially in those states that do not have a Plant Materials Center. This lack of understanding hinders the effectiveness of the program in meeting employee, resource, and program needs. The need exists to provide awareness training to NRCS and other non NRCS partners regarding the purpose and function of the Program.

Recommended Action: Develop an outreach training effort to provide awareness training of the Plant Materials Program to NRCS employees and non NRCS partners.

Ranking Priority: High

### **Appendix A. Listing of State Committee Members**

- State NRCS Resource Conservationist
- State NRCS Range Management Specialist
- State NRCS Biologist
- State NRCS Agronomist
- State NRCS Forester
- District Conservationist
- Soil Conservationist
- Soil Conservation Technician
- Area Conservationist Team Leader
- State Wildlife and Parks Representative
- State Foundation Seed Organization Representative
- State Highway Department Representative
- Nature Conservancy Representative

- USDA ARS Representative
- USF&W Representative
- USDA-FS Representative
- Commercial Seed Industry Representative
- State Native Plant Organization Representative
- State Forestry Service Representative
- Plant Materials Specialist (Advisor)
- Plant Materials Center Manager (Advisor)

#### **Appendix B. Listing of References**

- USDA-NRCS Strategic Plan
- State Natural Resources Inventory Data (NRI) 1992
- EQIP Priority Area Resource Inventory Data
- State Soil Surveys
- GLCI State Summary Data for Range Health Report
- State Nonpoint Source Inventory and Assessment Report
- State NRCS Field Office Technical Guide
- State Watershed Study Report for Riparian Health

<b>Table 1 Summary of Needs and Action Taken</b>					
				<b>Action Planned</b>	
<b>Problem</b>	<b>Plant Materials Needs</b>	<b>Ranking Priority</b>	<b>Evaluate Existing Technology</b>	<b>Transfer Existing Technology</b>	<b>Develop New Technology</b>
<b>NRCS Objective: High Quality, Productive Soils</b>					
Degradation of soil quality due to sedimentation and non-point source contaminants from cropland	Summarize and transfer existing plant materials and technology information	High	x	x	
<b>NRCS Objective: Clean and Abundant Water</b>					
Degradation of water quality due to sedimentation from unstable streambanks and shoreline erosion	Identify and evaluate locally adapted plant materials for use in streambank and shoreline protection (investigate). Develop establishment techniques for the selected material	Medium			x
Degradation of water quality due to nonpoint source contaminants from nitrogen and phosphorus runoff	Summarize and transfer existing plant materials and technology information	High	x	x	
Degradation of water quality due to point source contaminants and sedimentation from saline, alkaline, and other mineralized sites	Identify and evaluate locally adapted plant materials and establishment techniques for the reclamation of the affected sites	Medium			

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				<b>Action Planned</b>	
<b>Problem</b>	<b>Plant Materials Needs</b>	<b>Ranking Priority</b>	<b>Evaluate Existing Technology</b>	<b>Transfer Existing Technology</b>	<b>Develop New Technology</b>
Degradation of water quantity due to increased irrigation from drought	Identify and evaluate locally adapted plant materials and establishment techniques for drought tolerant plants	High			x
<b>NRCS Objective: Healthy Plant and Animal Communities</b>					
Lack of adapted and productive cool season perennial grasses for extending the grazing period	Investigate and evaluate existing cool season grass species for adaptability and performance	High	x		x
Lack of locally adapted native forbs, legumes, and shrubs for use in range and wildlife plantings and information pertaining to the propagation, establishment, and maintenance of those species	Identify and evaluate locally adapted native forbs, legumes, and shrubs and investigate propagation, establishment, and maintenance requirements for those species	Medium			x
Lack of locally adapted wetland species and propagation, establishment, and maintenance information for use in restoring enhancing, or creating wetlands	Identify and select locally adapted wetland species for use in wetland restoration, enhancement or creation of wetlands. Propagation, establishment, and maintenance information is needed for these species	High			x

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				<b>Action Planned</b>	
<b>Problem</b>	<b>Plant Materials Needs</b>	<b>Ranking Priority</b>	<b>Evaluate Existing Technology</b>	<b>Transfer Existing Technology</b>	<b>Develop New Technology</b>
<b>NRCS Objective: Healthy Air Quality</b>					
Lack of low cost options to reduce odor laden particles	Identify and select locally adapted species to serve as windbreaks or buffers to collect dust particles	High			x
<b>NRCS Objective: Adequate Energy Supply</b>					
Lack of knowledge of conservation plants and plant residues in the conversion to various forms of energy and bio-products	Collaborate with other agencies and identify and evaluate new species to use as biofuel	Med	x	x	x
<b>NRCS Objective: A Diverse and well served Customer Base</b>					
Potential for disparate treatment of minority or small scale and limited resource groups	Develop an outreach strategy to minority groups to promote awareness of the program and identify needs which may be addressed by the program.	High		x	
Lack of understanding of the program by NRCS and non NRCS partners	Develop outreach training efforts to provide awareness of the program to NRCS and non NRCS partners	High		x	