

# **Wyoming Weed Management Strategic Plan**

**Prepared by**

**The Wyoming State Weed Team**

**June 2003**

# Forward

**The Wyoming Weed Management Strategic Plan was developed by the Wyoming State Weed Team as a response to the threat of noxious and invasive plants from outside and within the borders of the State of Wyoming.**

**The Team was composed of representatives from a number for local, state and federal agencies, the educational institutions, agriculture non-governmental organizations, conservation organizations and individuals. A tremendous amount of work and effort was put into this planning effort and a great deal of appreciation is given to the numerous individuals involved in this project.**

# Wyoming Weed Management Strategic Plan

## **Mission Statement: Maintain Healthy Ecosystems.**

The Wyoming Weed Management Strategic Plan is designed to assist and encourage the people of Wyoming to maintain healthy ecosystems with desirable, sustainable vegetation consistent with the land management goals of affected agencies, organizations, and individuals.

Three strategies have been developed to attain the mission statement of this document. The first is cooperation among the many diverse agencies, organizations and individuals. The second strategy is the development and implementation of integrated weed management programs. The third strategy is program assessment.

## **Background**

Noxious and invasive weeds inhabit about 1.3 million acres in Wyoming. They pose a significant threat to Wyoming's crop lands, rangelands and natural areas. Wyoming has long recognized the importance of managing noxious weeds, with its first noxious weed law legislated in 1913.

Wyoming's weed and pest control districts are the cornerstones of the weed and pest program in Wyoming. They will continue to be the primary weed management focus of this plan. Continuing to develop programs that include the private sector, other local entities and agencies, tribes and, state and federal agencies will maintain or improve the efficiency of their programs, and offer the best chance to protect our natural resources.

Weeds can impact Wyoming in many ways. A recent study from Cornell University indicates that noxious weeds cost the US economy \$40 billion a year. The upper Great Plains states of Montana, North Dakota, South Dakota, and Wyoming lose an estimated \$129.5 million each year to Leafy spurge infestations in our rangelands and wildlands, which represents the loss of 1,433 jobs. Weeds have the potential to occupy many millions of acres in Wyoming and substantially increase economic impacts within the state.

Other impacts from weeds that are just starting to be understood, but not yet quantified, can also have serious impacts in Wyoming. Water quality, quantity, and long-term production can be reduced by weeds such as spotted knapweed and diffuse knapweed invading watersheds. In western Montana, surface runoff was increased by 56% and sediment yield was 192% higher in spotted knapweed infested sites compared to those sites dominated by native bunch grass. In addition to modified hydrologic cycles, weeds can alter fire cycles, sedimentation and erosion rates, and change nutrient cycles and soil properties.

As many as 49% of all threatened and endangered species to some degree are adversely impacted by nonnative invasive species, including noxious weeds. Noxious weeds, such as Canada thistle, can place increasing adverse impacts on Wyoming's rare species such as Ute ladies' tress. Both species prefer similar habitats.

**The plan is organized into three areas.**

**Cooperation** is our first strategy in this plan to bring a wide diversity of agencies, groups and individuals together to work toward focused programs that bring numerous resources into the management of weeds.

**Developing Integrated weed management programs** is the second strategy of the plan. Weed and pest districts are encouraged to take the lead in developing these programs with cooperators in their districts. They are encouraged to make prevention a high priority, and include eradication, containment, and reduction of infestation. Education and awareness are the keys to accomplishing these goals. Research and technology transfer are also extremely important to develop effective plans.

**Evaluation** is the last but equally important part of this plan. Plan effectiveness needs to be evaluated as well as local programs, weed management areas, legislation, designated weed lists, and other areas of weed management. Without evaluation, the effectiveness of the programs or the plan cannot be determined.

**Strategy A. Cooperation.** Many individuals, agencies and groups working together and sharing resources is the most efficient way to manage noxious weeds. We encourage these entities to form partnerships and enter into cooperative agreements to accomplish the goals of this plan.

*Goal 1. Develop cooperative relationships and agreements.*

**Objective 1:** Foster an atmosphere for all agencies, the tribes, private landowners, business interests, industry and the public to cooperatively work together to manage invasive plants.

**Action:** The State Weed Team will develop a cooperative MOU with federal and state agencies, the tribes and interested organizations.

**Objective 2:** Improve our ability to use cooperative agreements and resource sharing between federal, state and local agencies and other participants using the Coordinated Resource Management model as a process to develop cooperation and set the goals and direction of the Weed Management Area..

**Action:** The State Weed Team will encourage the training of the various participants in the use of the Coordinated Resource Management (CRM) model.

**Strategy B. Develop and Implement Integrated Weed Management Programs.**

Integrated Weed Management is a system for planning and implementing selected methods of management for preventing, containing or controlling undesirable plant species or groups of species, using all available strategies and techniques (Plant Protection Act).

***Goal 1: Remove barriers to managing noxious weeds between agency jurisdictions and private lands.***

**Objective 1:** Manage noxious weeds in an efficient, economic and ecologically sound manner.

**Action:** Wyoming Weed and Pest Control Districts should take the lead in encouraging the development of Weed Management Areas to combat noxious weeds.

**Action:** Participants should develop Integrated Weed Management Areas on logical parcels of land such as watersheds or other similar units.

**Action:** Invasive plant species respect no boundaries and therefore partnerships are critical to integrated invasive plant management. Means should be created for all land managers, including private, tribal, and local, state and federal agencies, to share resources for integrated weed management. Resource sharing and area-wide management will lead to more rapid, effective and long-lasting control.

***Goal 2: Prevent the introduction and reintroduction of noxious weeds into Wyoming.***

**Objective 1:** Implement a program for prevention, early detection and rapid response to the introduction, spread and reintroduction of noxious weeds.

The State Weed Team will work with local, tribal, state and federal agencies, Wyoming Weed and Pest Council, UW, private landowners, business interests, industry and the public to:

**Action:** Develop a prevention program to include consideration of the following elements.

- a. Forage and mulch certification
- b. Seed law/Nursery law
- c. Public education and awareness
- d. Regulatory action
- e. Contaminated equipment washing/cleaning
- f. Revegetation and reseeding
- g. Off road/recreational vehicles
- h. Management practices
  - \* Irrigation
  - \* Grazing
  - \* Other

i. Communication with surrounding states.

**Action:** Develop an Early Detection System.

**Action:** Develop and annually review a “Watch List.”

**Action:** Develop a Rapid Response template or action model to locate and confine new species to relatively small areas while eradication plans are developed and analyzed. High hazard areas such as roadsides, trail-heads, and campgrounds should be actively surveyed.

**Action:** Develop a Reporting and Alert System.

**Action:** The State Weed Team will identify the current local, tribal, state and federal preventive programs in Wyoming and identify the needs, gaps and deficiencies in those programs.

**Goal 3:** *Reduce the threat of a new weed species becoming an ecological or economic liability on the state resources.*

**Objective 1:** Eradicate new infestations where feasible.

**Action:** The State Weed Team will work with local, tribal, state and federal agencies private landowners, business interests, industry and the public, Wyoming Weed and Pest Council and UW to develop an eradication template or action model that contains a checklist of activities needed for an effective eradication program, which includes criteria for evaluating new species.

**Objective 2:** Contain infestations where feasible to limit their spread for various management goals and objectives.

**Action:** The State Weed Team will work with local, tribal, state and federal agencies, private landowners, business interests, industry and the public, Wyoming Weed and Pest Council and UW to develop a containment template or action model that contains a checklist of activities needed for an effective containment program.

**Goal 4:** *Mitigate the detrimental effects of established weed species on the ecological or economic values of the state. These species are not eradicable but their effects can be limited.*

**Objective 1:** Develop a coordinated cooperative weed management program.

**Action:** Weed Management Area participants should Establish a Weed Management area using the “Guidelines for Coordinated Management of Noxious Weeds: Development of Weed Management Areas.”

**Objective 2:** Implementation of Integrated Weed Management Plan.

**Action:** Weed Management Area participants will begin the actions required for management of that Area.

**Objective 3:** Monitor and evaluate program effectiveness.

**Action:** Weed Management Area participants will use monitoring systems based on sound science.

***Goal 5: Improve Education and Awareness programs that provide training and educational opportunities for professional weed managers and land owners/managers.***

**Objective 1:** Improve public understanding of weed management and encourage acceptance and participation in weed management programs and activities.

The State Weed Team will work with local, tribal, state and federal agencies, private landowners, business interests, industry, Wyoming Stockgrowers, Wyoming Farm Bureau, and Wyoming Woolgrowers, and the public, Wyoming Weed and Pest Council and UW to:

**Action:** Identify gaps in current educational materials used for the general public and school curriculum.

**Action:** Develop a Public Awareness program.

**Action:** Identify gaps and deficiencies with current educational materials for the media and current situation of agency/media relations.

**Action:** Develop a Media Education and Involvement Program.

**Objective 2:** Maintain and improve landowner and land manager training opportunities.

The State Weed Team will work with local, tribal, state and federal agencies, private landowners, business interests, industry, Wyoming Stockgrowers, Wyoming Farm Bureau, and Wyoming Woolgrowers, and the public, Wyoming Weed and Pest Council and UW to:

**Action:** Identify gaps in the current training programs and educational materials for land owners and land managers.

**Action:** Improve the understanding of the ecological and economic benefits of weed management programs.

**Action:** Promote involvement in weed management programs

**Action:** Promote technology transfer to land owners and managers.

**Action:** Develop education programs for land investment in real estate for Realtors and absentee land owners.

**Objective 3:** Maintain and improve professional training opportunities.

The State Weed Team will work with local, tribal, state and federal agencies, Wyoming Weed and Pest Council and UW and other interested individuals and businesses to:

**Action:** Identify gaps in the current educational materials and training programs for professional weed managers.

**Action:** Improve educational opportunities for professional weed managers to include:

- a. pesticide certification
- b. IPM training, i.e., pesticides, biological controls, grazing, competitive grasses, ranch management, etc.
- c. weed identification, biology, economics, and ecology
- d. legal considerations - local, state and federal
- e. Weed Management Area concepts
- f. facilitation and mediation skills.
- g. weed and pest district operations/local knowledge transfer.

***Goal 6: Improve Resources State-wide for weed management programs.***

**Objective 1:** Acquire stable funding sources for weed management programs.

The State Weed Team will work with local, tribal, state and federal agencies, private landowners, business interests, industry, Wyoming Stockgrowers, Wyoming Farm Bureau, and Wyoming Woolgrowers, Non Governmental Organizations (NGOs) and the public, Wyoming Weed and Pest Council and UW to:

**Action:** Identify funding needs, weaknesses and gaps in the following areas:

- a. education and awareness
- b. prevention
- c. early detection
- d. rapid response
- e. restoration and reclamation
- f. eradication, containment and management
- g. research and technology transfer
- h. inventory and mapping
- i. monitoring and evaluation
- j. state and federal legislation.

**Action:** Identify sources for funding including:

- a. local governments
- b. state agencies
- c. federal agencies
- d. conservation and environmental organizations
- e. foundations
- f. weed management industry

- g. disturbance industry
- h. landowner groups

**Objective 2:** Increase volunteer participation in weed management programs.

The State Weed Team will work with local, tribal, state and federal agencies, private landowners, business interests, industry, Wyoming Stockgrowers, Wyoming Farm Bureau, and Wyoming Woolgrowers, and the public, Wyoming Weed and Pest Council and UW to:

**Action:** Identify volunteer groups and individuals.

**Action:** Develop programs for volunteer use.

**Goal 7:** *Have the best research about weed management issues available for professional weed manager, land owners, and land managers and facilitate the smooth transfer of technology from the scientific community to these end users and the general public.*

**Objective 1:** Identify research and technology currently available.

**Action:** The State Weed Team will work with local, tribal, state and federal agencies, chemical industry, USDA-ARS, USDA-APHIS, Wyoming Weed and Pest Council, UW and others to review current technology.

**Objective 2:** Identify the needs, deficiencies or gaps in technology to maintain desirable sustainable ecosystems.

The State Weed Team will work with local, tribal, state and federal agencies, chemical industry, USDA-ARS, USDA-APHIS, Wyoming Weed and Pest Council, UW and others to:

**Action:** Develop a survey of local, tribal, state and federal agencies, and weed managers to determine what research needs are not being met.

**Action:** Target publications to cooperators, land owners and land managers.

The State Weed Team will work with local, tribal, state and federal agencies, Wyoming Weed and Pest Council, UW, chemical industry, USDA-ARS, USDA-APHIS, and other industry, and private land owners and land managers to:

**Action:** Develop effective demonstrations showing technological advances.

**Action:** Develop research programs to address recognized needs, deficiencies and gaps in technology and technology transfer systems.

### **Strategy C. Program Assessment.**

Program assessment and evaluation is probably the most valuable and least used tool available to weed managers. It is used to determine if the weed management program accomplishes the objectives of the

program, and if the program is still desirable and realistic. Evaluation requires analyzing information gained through monitoring, including benefit verses cost, comparing it with the cost/benefit of other alternatives including a comparison with the cost projections of no action. Evaluation should answer a number of questions that are essential to the weed management program to help the manager make the necessary changes to the program to keep it effective and environmentally sound.

***Goal 1: Develop a system to evaluate program impacts.***

**Objective 1:** Develop an internal review program, at the local level, for the Weed Management Area or program by the participants of the program.

The State Weed Team will work with local, tribal, state and federal agencies, Wyoming Weed and Pest Council, UW, Industry, NGOs and interested public to:

**Action:** Provide a template to local programs outlining the practices and procedures to examine for an internal review.

**Action:** Encourage an annual internal review of all weed management areas and programs.

**Objective 2:** Develop an external review program, at the local level, for the weed management area or program by Wyoming Department of Agriculture and other State/Federal agencies.

The State Weed Team will work with local, tribal, state and federal agencies, Wyoming Weed and Pest Council, UW, Industry, NGOs and interested public to:

**Action:** Provide a template to local programs outlining the practices and procedures to examine in the external review.

**Action:** Encourage an external review of all weed management areas and programs.

**Objective 3:** Develop a procedure for a biennial review of State Weed Plan.

The State Weed Team will work with local, tribal, state and federal agencies, Wyoming Weed and Pest Council, UW, Industry, NGOs and interested public to:

**Action:** Provide a template for evaluating the effectiveness of the State Weed Plan.

**Action:** Design, distribute and evaluate a survey to collect information from weed management areas and programs to help in the evaluation of the effectiveness of the state weed plan.

**Action:** The State Weed Team will conduct a biennial review of the state weed plan.

**Objective 4:** Develop a procedure for a biennial review of the compliance, enforcement, and effectiveness of state and federal noxious weed laws on a State-wide basis.

**Action:** The State Weed Team will work with local, tribal, state and federal agencies, industry, private landowners, and interested public, Wyoming Weed and Pest Council and UW to create a template for evaluating compliance and enforcement of state and federal noxious weed laws for use by the state weed team.

**Action:** The State Weed Team will conduct a biennial review of the effectiveness of state and federal laws, and offer suggestion of possible changes needed to make these laws more effective.