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The Utah Strategic Plan For Managing Noxious and Invasive Weeds

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The Utah Strategic Plan For Managing Noxious and Invasive Weeds

Revised 2024

Revised and updated by the Utah Weed Control Association Board with thanks to the 2004 Planning and Development Committee

Preface

How this plan came about . . .

At the request of the Commissioner of Agriculture and Food, the Utah Weed Control Association (UWCA) accepted the task of developing a statewide strategic plan for managing noxious and invasive weeds. A Weed Summit was held in Provo, Utah in an effort to bring together interested and diverse people, organizations, and agencies that have an interest in weed management and control. Over the past several years, the UWCA invested time, energy, and resources to update this plan.

The updated plan is the product of many individuals and organizations that contributed time and thought to develop a framework for cooperative and coordinated weed management efforts across Utah's landscape of public and private lands. During the course of updating the plan many suggestions and ideas were presented from many different organizations and an effort has been made to incorporate those recommendations in this updated strategic plan.

The UWCA would like to extend special thanks to the states of Idaho, Montana, and Nevada for their cooperation and assistance in updating the Utah Strategic Plan. We acknowledge that many of the problems related to management of invasive weed species are similar among the Intermountain States and look forward to expanding our activities with our neighboring states.

Although Utah is not severely infested with all of the noxious weed species that are found in the western United States, the development of a collaborative and cooperative effort involving all agencies and organizations in the state will increase our ability to help stop the introduction and spread of invasive species on public and private land.

Traditionally weed management has been an issue related to agriculture and agricultural production. Introduced and aggressive weed species crowd out native vegetation, increase problems with erosion, decrease forage production on land that is used by domestic and wild animals and negatively impact the public in many ways. Noxious and invasive weeds are not just a problem for agriculture, they are everyone's problem.

Contents

Executive Summary

The purpose of the Utah Strategic Plan for Managing Noxious and Invasive Weeds is to strengthen, support, and coordinate private, county, state, and federal weed management efforts in Utah. The strategic plan is designed to promote the implementation of comprehensive, economical, and ecologically-based integrated weed management programs. The objective is to create a plan with the magnitude, complexity, and thoughtfulness of a comprehensive strategy with reasonable and achievable objectives. These objectives:

1 Provide guidelines for private, county, state, municipality, and federal land managers to develop goals and plans consistent with state and national strategies.

2. Provide a method of prioritizing management strategies and allocating limited resources based upon prioritized objectives.

3. Prioritize noxious weed funding based on compatibility and compliance with the state plan.

This plan is a dynamic document and should be evaluated and revised as needed, at least on a biennial basis.

Utah State Capitol

I. Introduction

A. Background and Impact

Utah is the twelfth largest state in the United States with a land area of approximately 82,144 square miles. Approximately 65 percent of the land in Utah is federally owned and managed. The primary land managers are the United States Department of the Interior Bureau of Land Management and the United States Department of Agriculture Forest Service. Most of the federal land is non-cultivated forest and rangeland, although a large portion is dedicated to National Parks and National Monuments. Utah also owns and manages about 16 percent of the land in Utah, which is forest, rangeland, and state parks. Of the remaining privately held land, much is involved in agriculture, commercial property, and individual residences.

A weed is simply a plant out of place. A plant is usually considered a weed when it interferes with beneficial uses of land or water, displaces desirable or native plants, or affects human and animal health. Weeds aggressively compete for moisture, nutrients, space, and sunlight with surrounding desirable plants. Most troublesome weeds are exotics or non-native species that exhibit aggressive invasive behavior, are highly adaptive, have high reproductive abilities, and are persistent. They typically invade where human activities have caused disturbances such as road construction, non-intensive farming, poorly managed grazing or logging, urban development and high impact recreation. However, large natural disturbances such as drought, fires, and floods may also play a role in the spread of invasive plants.

Cutleaf vipergrass in alfalfa.

Noxious weeds are designated by state law (Utah Code 4-17) or county ordinance because they cause, or can cause, extraordinary negative economic and ecological impacts. Control is usually difficult and expensive, so emphasis is on education, prevention, and keeping populations and infestations at manageable levels.

Weeds are typically spread by dispersal of seeds or plant parts in a variety of ways. Wind, water, animals, machinery and people carry seed and plant parts from one location to another. Many weeds produce abundant seeds with barbs, hooks or other attaching devices that facilitate easy adherence to people, animals, or equipment. Because society has become increasingly mobile, weed seeds can and do travel great distances quickly. Weeds usually become established and advance along highways, roads, trails and river corridors. Some noxious weeds, such as purple loosestrife, have been spread through ill-advised horticultural and home garden plantings. Others have been inadvertently introduced through planting of contaminated crop seeds, the feeding of weed seed contaminated forage to livestock, or on vehicles, boats or other machinery.

Noxious weeds are spreading at an alarming rate across the Western United States and Utah is no excep tion. Although the exact acreage is unknown, 100 percent of Utah's counties (29 of 29) are severely infested by at least one of the 54 state-designated noxious weeds (R68-9). In Utah, squarrose knapweed was first noticed in limited amounts in 1954 and grew to nearly 150,000 acres by 2005. Unchecked, noxious weeds can spread at average rates of from 3 to 60 percent per year (Smith et al. 1999). In addition, new weeds are

Dyer's Woad along road and railway.

regularly being found throughout the state. It is also likely that some potentially damaging weeds have, so far, escaped detection.

The negative impacts of weeds are well known and profound. Noxious weeds can create monocultures that eliminate diverse plant communities. Watersheds dominated by noxious weeds tend to be less efficient in absorbing and storing water, causing increased soil erosion.

Noxious weeds can diminish forage production for all classes of herbivores and reduce habitat for small birds and animals. In addition, many noxious weeds are poisonous or injurious to animals. Aquatic weeds can obstruct irrigation systems, clog machinery, destroy fish habitat, contribute to flooding, and reduce recreational use.

Musk thistle, scotch thistle, yellow starthistle, and several other Utah noxious weeds can cause physical discomfort or irritation to humans due to barbs, spines, and prickles. Puncturevine, a common weed of urban roads and trails, can puncture bicycle tires and result in substantial repair or replacement costs.

Medusahead and downy brome (cheatgrass) have had profound impacts on wildland ecosystems and have altered fire frequencies and intensities in the sagebrush biome of the Intermountain West. Historically, fires occurred once every 60-110 years; now fires burn once every 3-5 years, not allowing the native shrubs and other vegetation to recover and become well established (Pimentel et al. 1999).

B. Costs

Weeds compete with crops and reduce the quality of food, feed, and fiber. During the 1950s, agricultural producers lost about $5.1 billion per year to reduced crop yield and quality and to the cost of weed control; this value doubled by 1979 (Westbrooks 1998). During the 1980's, farmers spent over $3 billion annually for chemical weed control and about $2.6 billion for cultural, ecological, and biological methods of control (Westbrooks 1998). During this time, about 17 percent of crop value was being lost because of weed interference and the cost of weed control (Westbrooks 1998).

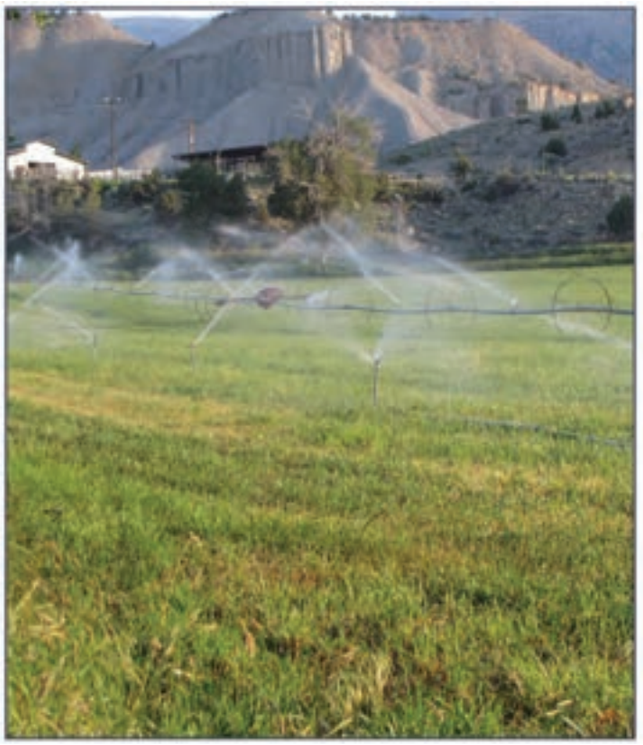
More recently, in the United States agricultural sector, losses and control costs associated with weeds in crops, pasture, hay, and range, were estimated to be approximately $33 billion per year (Pimentel et al. 2005). In non-crop sectors, including golf, turf and ornamentals, losses and control costs totaled about $1.5 billion per year (Pimentel et al. 2005).

The importance of herbicides in modern weed management is underscored by estimates that losses in the agricultural sector would increase about 500 percent without the use of herbicides. (Westbrooks 1998).

For most crops, it is critical that fields are kept weed-free during the first four to six weeks after planting to prevent serious yield losses. Weeds compete with crops for moisture, nutrients, sunlight and space, resulting in significant crop losses. Natural weed populations in most fields are high enough to cause devastating yield losses if not controlled. Loss figures of 50 percent to 90 percent are common for crops grown in natural unmanaged weed infestations. Weeds are different from other pests that pose problems in crop production because they are relatively constant while outbreaks of insects and disease pathogens are sporadic.

In Utah, the value of yield losses in crops due to weeds varies annually as the price of the commodity fluctuates. The impact of noxious weeds is not restricted to cropland. Weeds also impact rangeland, making it less productive.

Applying herbicide in weed infested crops



Weeds are everyone's problem. They impact crops, human health, rights-of-way, wildlands, other plants, wildlife, livestock, and recreation.

Photos (upper left to center right are courtesy of the USDA Forest Service and Utah Division of Wildlife Resources.

II. Organization and Leadership

A. History and Legal Authority

In 1971, the Utah Legislature passed the Utah Noxious Weed Act, Title 4, Chapter 17 into law. After enactment of the law, the Department of Agriculture adopted rules and regulations (R68) to guide implementation of this law.

State responsibility and authority:

The noxious weed law is administered by the Utah Department of Agriculture and Food (UDAF). The enforcement of the law is basically the responsibility of the individual counties, county weed boards and county weed supervisors.

The Commissioner of Agriculture and Food has the following powers and duties:

1. Investigate and designate noxious weeds on a statewide basis.
2. Annually update and publish a list of statewide noxious weeds.
3. Assist in inter-county noxious weed enforcement activities.
4. Ensure county compliance with the state noxious weed law.
5. Assist counties that fail to comply in successfully implementing provisions in the noxious weed law.
6. Provide educational and information material to the public concerning prevention and control of weeds.
7. Compile and publish a list of contamination sources and weed vectors and designate treatments to prevent noxious weed and seed dissemination.
8. Regulate the flow of contaminated items into the state and between counties in order to prevent dissemination of noxious weeds or seeds.

The day-to-day duties of the department are carried out by the Division of Plant Industry staff.

Utah Department of Agriculture and Food offices in Salt Lake City.

The current law establishes a State Weed Committee composed of eight members representing the Department of Agriculture and Food, Department of Natural Resources, the Agricultural Experiment Station, Extension Service, Association of Counties, private agricultural industry, the Utah Weed Supervisors, and the Utah Weed Control Association. Responsibilities of the committee are: (1) confer and advise on matters pertaining to the planning, implementation, and administration of the state noxious weed program; (2) recommend names for membership on the committee; and (3) serve as members of the executive committee of the Utah Weed Control Association.

County responsibility and authority:

The law provides authority to local county officials to conduct a complete weed control program in each county. It gives the counties authority to enforce the control of noxious weeds infesting lands within the state and to prevent the spread of noxious weeds by regulating the movement of articles contaminated with noxious weeds.

Each county is to establish a county weed control board with three to five appointed members. If the county has a county council, a county commissioner or a county executive is also appointed to the board. This representative shall act as a coordinator between the county and the weed board.

Two members of the board shall be farmers or ranchers whose primary source of income is derived from production agriculture. Members are appointed to a four-year term and can be removed for cause.

County Weed Supervisors at their annual spring training.

The county extension agent, the UDAF compliance specialist, and the county weed supervisor serve as ex-officio members of the board. Others may also be invited to be ex-officio members of the board.

The county weed control board is responsible for the formulation and implementation of a county-wide coordinated noxious weed control program designed to prevent and control noxious weeds within its county. The county weed control board also has the following responsibilities: (1) to cooperate with other county weed control boards, (2) direct the work of the county weed supervisor, (3) post a general notice of noxious weeds within the county by May 1 of each year, (4) serve notice to landowners requiring prompt attention to control noxious weeds or have their property declared a public nuisance, and (5) conduct noxious weed hearings.

County weed control supervisors are employed by the county to detect and treat noxious weeds and to direct the weed control program for the county weed board. Other responsibilities include: (1) examine all land under the jurisdiction of the county weed control board to determine compliance with the law, (2) compile data on infested areas, (3) consult and advise on matters pertaining to methods of weed control

and prevention, (4) render assistance and direction for control and prevention, (5) investigate violations and enforce noxious weed controls, and (6) to perform any other duties required by the county.

B. Funding

Finances are almost always a limiting resource. Finding new funding sources or redirecting existing funds should be a high priority for weed management organizations. Invasive plant infestations in Utah have reached critical levels on public and private lands. Preventing and controlling infestations of this magnitude are difficult tasks for most landowners and land managers. The cost of managing weed infestations increases annually. As weed infestations increase and spread across the landscape, the funding appropriated/allocated each year in government programs is often barely enough to cover base salaries. There is little money for program advancement to address the growing threat from invasive plant infestations. In 2012 the legislature authorized the yearly dedicated appropriation of $1 million in Invasive Species Mitigation (ISM) funds for on the ground treatments of invasive species as directed by the UDAF. In 2013 these funds were increased to $2 million annually to be managed by UDAF through cooperative contracts with Cooperative Weed Management Areas (CWMA), Federal, State, County, and local governments, and private land owners Since 2017, the ISM program has averaged 65 applications annually, with total requests exceeding $3.5 million. The annual acres under treatment average around 90,000 acres statewide.

Beyond legislative appropriations, each county and state agency has budgetary allocations for invasive species treatment. Additional funds are also provided annually by federal agencies and private landowners. Identifying and obtaining new funding sources or reallocating existing funds should be a high priority for weed management organizations. Strengthening partnerships with federal, state, and local agencies, as well as private landowners, to enhance resource sharing and collaborative management efforts should remain a high priority. Supporting research initiatives through partnerships with institutions like Utah State University to develop innovative solutions for invasive species management will make these limited resources achieve more. Since 2017 partners have provided a 2:1 match for state funded projects. Projects have varied in scope, focus and methods of control.

County weed departments gather for cooperative spray day.

C. Various Methods of Control

Aerial spraying in Cache County to control ventenata.

Backpack spraying

Riding into Book Cliffs WSA

Spraying with ATV-trailer tank

III. Management Approach

Weeds are here, more are coming. Handling the issue of invasive plants in Utah is an ongoing effort. Non-native plants will be part of the landscape throughout our future.

However, there are strategies and tools that can be implemented to reduce the susceptibility of land to new invasions and empower individuals and agencies to reduce the effects of weeds. The development of an invasive species program can be based on the application of Dr. Steve Dewey's Biological Wildfire Model (Dewey, 1995) as applied to weeds. The key elements are:

1. Prevention
2. Early detection and rapid response
3. Management of established populations
   a. Identify the perimeter
   b. Eradicate satellite populations
   c. Contain and suppress main population
4. Revegetation or rehabilitation
5. Protect defensible spaces

Hickman restoration project shows hoary cress infestation, soil preparation for seeding, rehabilitated land.

IV. Utah Priorities

Mission: Responsibly manage noxious and invasive weeds in Utah.

Overview

The reality of weed management is that budgets and resources limit the ability of weed managers to tackle the problem. This requires land managers to set priorities and explore creative ways of improving effectiveness. These key Utah priority items are:

A. Education and Research
B. Mapping and Monitoring
C. Prevention, Early Detection, and Rapid Response
D. Control – Integrated Weed Management
E. Revegetation or Rehabilitation
F. Regulation and Enforcement
G. Funding

Weed Supervisors visit farm on annual spring training tour.

A. Education and Research

The public is generally unaware of the economic and environmental impacts of noxious weeds. When people become aware of noxious and invasive weeds, and then learn to identify weeds and report infestations, they can provide great assistance in the effort to manage noxious weeds. By becoming educated about noxious weeds and management, people can help stop the spread of these invasive species. Prevention to preserve and protect lands not presently infested, is the first line of defense against aggressive noxious weeds. Prevention requires awareness and action by land managers as well as the general public to recognize, report, and control new infestations before they have a chance to expand and spread.

Weed control is one of the most expensive aspects of land management. When both public and private landowners contribute to controlling weeds on their lands, these costs can be greatly reduced over time and lands impacted by noxious weeds can recover.

An educated community can be a part of the solution as people become aware of the existence of noxious weeds on their property and public lands. Weed managers in Utah have a responsibility to help educate the public about noxious weeds, the economic and environmental damage they cause and appropriate methods of control.

B. Inventory, Mapping, and Monitoring

The objective of weed surveying and mapping is to:

- Identify and record locations of noxious and invasive weeds in Utah.
- Accurately calculate the total number of acres for priority weeds.
- Determine how fast noxious weeds are spreading by comparing weed inventories over time.
- Identify boundaries of newly invading species.

Surveys provide information on weed biology and ecology, and can be used for predictive modeling of high risk sites for invasion. Surveys can also raise public awareness. This information is critical to identify boundaries of newly invading species, develop effective integrated management plans with specific control actions, assess economic and social impacts of weeds, evaluate progress, and track the status of weed management efforts across the state and over time.

The need for an updated weed inventory does not preclude treatment while the inventory is being conducted. Mapping and inventory will be used as tools to help prioritize treatment sites where funding is limited.

Currently the weed inventory collected by the state weed supervisors is being stored on-line at www.eddmaps.org and is accessible for viewing or download.

To facilitate data sharing, the UWCA membership recommends adopting NAISMA standards for mapping, monitoring, and reporting data. These standards are available on the clearing house website: www.naisma.org.

Weed supervisors learn about Malta starthistle, a new invader, first found in Washington County...

C. Prevention, Early Detection, and Rapid Response

A key item that was repeatedly emphasized in UWCA weed summit breakout sessions was the need to improve early detection rapid response capabilities within the state. Economic analysis and historical examples clearly demonstrate that prevention and early action pays off.

The ability to detect and document early invasions is dependent upon improving the way organizations collect and disseminate information about newly invading plants in Utah. The development of cooperative weed management areas and a statewide mapping and inventory effort will improve the ability to communicate across boundaries about new invaders in addition to ongoing control efforts of other priority weeds. This includes identifying vectors or pathways for invasive species, understanding which invasive species pose the greatest threat and which warrant the most focused attention. Using the pooled strength of partnerships to cooperatively eradicate and monitor invasions could increase successful outcomes. Setting aside a time at the annual UWCA meeting for discussion of new invaders and concerns, and developing action plans as necessary for particular species could help organizations become more effective in early detection and rapid response to new invading species.

D. Control – Integrated Weed Management

This statewide strategic plan promotes an integrated approach, where prevention is the best method of weed management. Integrated Weed Management is composed of mechanical, cultural, chemical, and biologic tactics. Weed management personnel should consider each of the following factors and resources when developing an integrated weed management plan.

1. Weed reproduction and dispersal
2. Weed ecology
3. Plant competition
4. Biological weed control
5. Chemical weed control
6. Preventive weed control
7. Mechanical (physical) weed control
8. Integrated pest management
9. Books
10. Websites
11. People

(Clockwise) Pond infested with parrot feather, parrot feather underwater, Eurasian watermilfoil

E. Revegetation/Rehabilitation/Restoration

After invasion by an aggressive weed species and subsequent successful control/management activities, the objective is to return the site to a desirable species composition when possible.
The goal of the vegetation manager is to explore and understand the underlying order of the vegetation in the target site. Without paying attention to revegetation or rehabilitation, the weed manager runs the risk of perpetuating a cycle of weed treatment, followed by the opening of spaces where weeds can reestablish followed by more weed treatment, etc.
To determine the best course of action weed managers must assess the treatment site with these questions:

- Will the site recover naturally?
- Is natural vegetation capable of outcompeting the weed?
- Are the soil and conditions favorable for establishing more favorable vegetation?
- Can the soil be amended or are species available that are adapted to the soil?

Site preparation and seeding methods must be adapted to the site characteristics if establishing more favorable vegetation is to be successful. Revegetation can be accomplished by returning vegetation to a site with little emphasis on amending ecological function. Rehabilitation returns a site to a functioning state, but not necessarily its original state and does not require native species. Restoration, which is most difficult of the three, returns a site to its original, functional state using native species.

V. Action Plan

Goal: Promote the implementation of comprehensive, economical and ecologically based, integrated weed management programs.

A. Education and Research

Raising public awareness through education may be the most important activity in the effort to stop the spread and introduction of noxious weed species. There are numerous ways weed managers can raise awareness and educate the people in their communities regarding noxious and invasive weed species. Weed control programs can become far more successful if weed managers use the best methods available to them for increasing public education and weed awareness.

Action Items:

1. Engage government and elected officials
   a. Conduct weed tours for officials.
   b. Support state and county resource management plans.
2. Work with landowners and managers
   a. Organize weed tours.
   b. Develop a process to work with the railroad companies.
   c. Develop a process to encourage involvement of tribal lands.
3. Educate recreational users
   a. Include information in hunting and fishing proclamations.
   b. Utilize dedicated hunter programs.
   c. Install trail signs.
   d. Educate trail users.
   e. Educate naturalists at federal parks about the impact of invasive species.

4. Involve school K-12
   a. Develop a weed curriculum.
   b. Engage National Science Teachers.
   c. Include weed education in Junior Master Gardener program.
   d. Sponsor weed awareness days.
5. Raise awareness among the general public using:
   a. Publications.
   b. Social media.
   c. Radio and television.
   d. Billboards.
   e. Create a model weed display for state and county fairs.
   f. Include weed information/brochures with licenses and permits (e.g. building permits).

g. Develop and maintain a user-friendly information-based website
h. Identify critical management needs and initiate research to identify new invaders and understand impacts and develop effective weed management approaches.

B. Mapping, Monitoring, and Inventory

Great strides have been made in the area of mapping, monitoring, and inventory within Utah. Adoption of the NAISMA standards for mapping and the use of EDDMapS has provided a standardized repository for invasive species distribution data. Partnerships with agencies have allowed the uploading of agency data to EDDMapS as well. Inventory efforts are continuously encouraged as grant funding opportunities now utilize invasive weed distribution data within proposed treatment areas. EDDMapS data now shows where treatments have been made or where invasive weeds are no longer present. UDAF-ISM grants also require monitoring as part of the proposed management effort, allowing treatment efficacy to be documented. The development of the UDAF "Utah Noxious Weed Dashboard" allows public access to invasive weed species distribution, treatment, eradication, biocontrol release, and monitoring data.

Action Items:

1. Promote the continued adoption of standardized mapping, monitoring, and inventory approaches by weed managers in Utah.
2. Encourage updating of data in EDDMaps to document treated plants, eradicated populations, or other weed population changes.
3. Support further development of online resources to support documentation of weed distribution, treatment status, and management effectiveness.

C. Prevention, Early Detection, and Rapid Response

Prevention—The key to prevention is raising public awareness through education. This may both stop importation and use of noxious species as well as increasing the public's ability to identify noxious species, and report to local agencies or weed management groups for immediate action.

Action Items:

1. Track invasive species in neighboring counties and states and share information via partnerships and county weed supervisor networks
2. Develop guidelines, educational materials (public, highway and construction companies, nurseries, railroads, etc.)
3. Regulate known pathways for invasive species, e.g. federal agencies requiring rinsing of equipment, requirements for rinsing boats/

watercraft when transporting between water bodies, weed-free seed and forage programs

4. Encourage development of weed invasion risk analysis in federal and statewide planning efforts. Influence our project and land planning teams to include analysis of what potential new invaders are likely to occur and identify where, based on ecological conditions, the most susceptible areas for future invaders are. (e.g. SAGEMAP project includes this sort of risk assessment.) This information can be shared to help focus CWMA activities and help counties and partners set priorities.

Early Detection—Preventative actions – addressing new invaders early before they become significant ecosystem-altering or economically devastating issues – is the cheapest first line of defense.

Action Items:

1. Encourage routine and systematic surveys as part of all weed programs.
2. Map invasive species and high risk areas.
3. Provide resources to land managers for proper identification.
4. Develop communication network to notify county weed supervisors of new, unique infestations.

Rapid Response—Rapid response towards newly discovered invasives will require action on plants not yet on the State Noxious Weed list. Although a plant not being on the State Noxious Weed list does not preclude this kind of action, it does make setting priorities somewhat more complicated.

Action Items:

1. Utilize EDDMapS and a rapid response protocol for facilitating action against new invaders.
2. Assist county weed boards, CWMAs, or other partner groups in setting priorities through a coordinated decision support system.
3. Distribute Weed Alerts through communication networks, mailings, and websites.
4. Allocate resources to new invaders.

African Rue

D. Control – Integrated Weed Management

Integrated weed management is the foundation of an effective weed control program. Weed control managers face diverse landscapes, species, climates, and cultures. Using the varied methods of weed control included in an integrated weed management program, managers are likely to find an effective method for the unique conditions they face. When weed managers involve community members and organizations in integrated weed programs, they provide individuals and groups with greater chances for success as they work on weed control projects.

Action items:

1. Encourage and incentivize counties, CWMAs, land managers, and agencies to develop Integrated Weed Management Plans.
2. Provide assistance to individuals and weed management groups as they use methods of weed management beyond traditional herbicides.
3. Continue to provide a biocontrol specialist to assist counties and CWMAs in the use of biocontrol agents to manage specific weeds.
4. Provide information and training to farmers and ranchers about the various methods of weed management.

E. Revegetation/Rehabilitation/Restoration

Once weeds are eradicated, weed managers must decide the best course of action to return the site to a functioning healthy landscape. Sometimes natural vegetation will fill the open spaces. If the weed is a vigorous competitor, weed managers must decide if other beneficial plants will be more successfully established. Occasionally weed managers use such sites for research and trial plantings. Their conclusions help other weed managers as they work to revegetate, rehabilatate and restore management sites.

Action Items:

1. Obtain a knowledge of the management site.
2. Properly identify the problem weed.
3. Plant replacement species with the end result in mind.
4. Develop a plan for each situation.
5. Evaluate yearly success.

F. Regulation and Enforcement

During the 2004 UWCA Weed Summit, several issues and action items were identified with regard to regulation and enforcement. The goal is to increase compliance with the Utah Noxious Weed Law so that it is consistant from property to property and across land management areas.

Action Items:

1. Utilize county weed boards to adminster the weed law.
2. Foster actions of CWMA's to communicate and equally implement the Noxious Weed Law from county to county.
3. Representatives of UWCA, UDAF, UWSA, and USU Extension Service will review the Utah Noxious Weed Law and other related policies and laws, i.e. (1) Seed Law; (2) Nursery Law; and (3) Weed Free Feed and Forage.
4. Insure policies and laws are (1) current and up-to-date; (2)enforceable; (3) supportive and equal; (4) correctly categorize weed species; and (5) show avenues of funding equal to counties' cost for enforcement.
5. Educate County Weed Boards and managers through Cooperative Weed Management Area programs of their responsibilities under the existing State and Federal Laws. Compliance will be primarily sought through education and awareness.

G. Funding

As weed infestations increase and spread across the landscape, the funding appropriated/allocated each year in government programs is often barely enough to cover base salaries, with little room for program advancement to address the growing threat from invasive plant infestations.

Action Items:

1. Seek funding from all sources to support weed management activities.
2. Increase applications from CWMAs and counties where high priority weeds are present.
3. Assist weed managers in applying for funds, implementing grant-funded projects, and providing timely, accurate, complete reports.
4. Maintain and increase funding through documenting management success.

Appendix

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(801) 444-2230

DUCHESNE
P.O. Box 1081
Duchesne, UT 84021-0281
(435) 738-2745

EMERY
P.O. Box 629
Castle Dale, UT 84513
(435) 381-2933

GARFIELD
P.O. Box 806
Panguitch, UT 84759
(435) 676-8190

GRAND
125 E. Center St.
Moab, UT 84532
(435) 259-1369

IRON
P.O. Box 1006
Cedar City, UT 84720
(435) 559-1408

JUAB
160 N. Main
Nephi, UT 84648
(435) 681-0428

KANE
76 N. Main
Kanab, UT 84741
(435) 644-5312

MILLARD
50 S. Main
Fillmore UT 84631
(435) 979-2774

MORGAN
P.O. Box 886Morgan, UT 84050
(801) 845-4047

PIUTE
550 N. Main
Junction, UT 84750
(435) 231-9041

RICH
600 W. Big Creek Rd.
Randolph UT 84064
(435) 793-5575

SALT LAKE
2001 S State St., S2-600
Salt Lake City, Utah 84190
(385) 468-4087

SAN JUAN
P.O. Box 9
Monticello, UT 84535
(435) 459-1813

SANPETE
160 N. Main
Manti, UT 84642
(435) 979-9321

SEVIER
250 N Main Richfield, UT
84701
(435) 896-6636

SUMMIT
1755 South Hoytsville Rd.
Coalville, UT 84017
(435) 336-3970

TOOELE
47 S. Main
Tooele, UT 84074
(435) 843-3459

UINTAH
364 S. 1500 E.Vernal, UT 84078
(435) 789-1073

UTAH
2885 S. State
Provo, UT 84601
(801) 851-8638

WASHINGTON
197 E. Tabernacle
St. George, UT 84770
(435) 634-5702

WASATCH
1891 W. 3000 S. Heber City, UT
84032
(435) 657-3282

WAYNE
18 South Main Street Loa, UT
84747
(435) 836-2682

WEBER
2222 S. 1900 W.
Ogden, UT 84401
(801) 399-8356

Utah Noxious Weed List

Class 1A: Early Detection Rapid Response (EDRR) Watch List. These weeds are not native to Utah; not known to exist in the state; a serious threat to the state; and a very high priority if identified in the state.

Common crupina – *Crupina vulgaris*
Mediterranean sage – *Salvia aethiopis*
Plumeless thistle – *Carduus acanthoides*
Small Bugloss – *Anchusa arvensis*
Spring millet – *Milium vernale*
Syrian beancaper – *Zygophyllum fabago*

Class 1B: Early Detection Rapid Response (EDRR). These weeds are declared not native to Utah, known to exist in the state in very limited populations and are a serious threat to the state and a very high priority.

African Mustard – *Brassica tournefortii*
African rue – *Peganum harmala*
Blueweed (Vipers bugloss) – *Echium vulgare*
Camelthorn – *Alhagi maurorum*
Common St. Johnswort – *Hypericum perforatum*
Cutleaf vipergrass – *Scorzonera laciniata*
Elongated mustard – *Brassica elongata*
Eurasian watermilfoil – *Myriophyllum spicatum L.*
Garlic mustard – *Alliaria petiolata*
Giant reed – *Arundo donax*
Goatsrue – *Galega officinalis*
Japanese knotweed – *Polygonum cuspidatum*
Malta starthistle – *Centaurea melitensis*
Oxeye daisy – *Leucanthemum vulgare*
Parrot feather – *Myriophyllum aquaticum*
Purple starthistle – *Centaurea calcitrapa*
Ventenata (North Africa grass) – *Ventenata dubia*

Class 2: Control. These noxious and invasive weeds are declared not native to Utah, are a threat to the state and a high priority for control. Weeds listed in the control list are known to exist in varying populations throughout the state. The concentration of these weeds is at a level where control or eradication may be possible.

Black henbane – *Hyoscyamus niger*
Dalmation toadflax – *Linaria dalmatica*
Diffuse knapweed – *Centaurea diffusa*
Dyers woad – *Isatis tinctoria*
Leafy spurge – *Euphorbia esula*
Medusahead – *Taeniatherum caput-medusae*
Purple loosestrife – *Lythrum salicaria*
Rush skeletonweed – *Chondrilla juncea*
Spotted knapweed – *Centaurea stoebe*
Squarrose knapweed – *Centaurea virgata*
Yellow starthistle – *Centaurea solstitialis*
Yellow toadflax – *Linaria vulgaris*

Class 3: Containment. These weeds are declared to be noxious and invasive weeds not native to the State of Utah and widely spread. Weeds listed in the containment noxious weeds list are known to exist in various populations throughout the state. Weed control efforts may be directed at reducing or eliminating new or expanding weed populations. A county weed control board may determine known and established weed populations and manage them according to any approved weed control methodology. Class 3 weeds threaten the agricultural industry and agricultural products.

Bermudagrass* – *Cynodon dactylon*
Canada thistle – *Cirsium arvense*
Field bindweed (Wild Morning-glory) – *Convolvulus spp.*
Hoary cress (globe-podded)– *Lepidium draba (Cardaria draba)*
Hoary cress (heart-podded) - *Lepidium chalepense (Cardaria chalapensis)*
Hoary cress (lens-podded) - *Lepidium appelianum (Cardaria pubescens)*
Houndstongue – *Cynoglossum officianale*
Jointed goatgrass – *Aegilops cylindrica*
Musk thistle – *Carduus nutans*
Perennial pepperweed (Tall whitetop) – *Lepidium latifolium*
Perennial sorghum spp.: Johnsongrass and Columbus grass (*Sorghum halepense*) and (*Sorghum almum*)
Phragmites (Common reed) – *Phragmites australis ssp.*
Poison hemlock – *Conium maculatum*
Puncturevine (Goathead) – *Tribulus terrestris*
Quackgrass – *Elymus repens*
Russian knapweed – *Acroptilon repens*
Scotch thistle (Cotton thistle) – *Onopordum acanthium*
Tamarisk (Saltcedar) – T*amarix ramosissima*

*Bermudagrass (*Cynodon dactylon*) may not be a noxious weed in Washington County. Triploid Hybrid Bermudagrass purchased from a producer certified with the Utah Crop Improvement Association and the Nursery Inspection program is allowed for commercial and private uses throughout Utah.

Class 4: Prohibited for sale or propagation. These weeds are declared to be not native to Utah, a threat to the state through the retail sales or propagation in the nursery and greenhouse industry. The department designates annual, biennial, or perennial plants that have the potential or are known to be detrimental to human or animal health, the environment, public roads, crops, or other property as prohibited noxious weeds.

Cogongrass (Japanese blood grass) – *Imperata cylindrica*
Damesrocket – *Hesperis matronalis*
Myrtle spurge – *Euphorbia myrsinites*
Russian olive – *Elaeagnus angustifolia*
Scotch broom – *Cytisus scoparius*

Each county in Utah may have different priorities regarding specific state designated noxious weeds and may reprioritize these weeds for the county weed list..

Acknowledgements

State Planning Committee:

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