Musselshell River Cooperative Weed Management Area

STRATEGIC & INTEGRATED WEED MANAGEMENT PLAN

Strategy for Integrated Weed Management in the Musselshell River Cooperative Weed Management Area

Musselshell Watershed Coalition

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This Strategic and Integrated Weed Management Plan provides a framework for the Musselshell River Cooperative Weed Management Area. It introduces and sets a purpose for creating a Cooperative Weed Management Area along the Musselshell River. It creates goals, boundaries, and a steering committee. It also describes what Integrated Weed Management means and suggests recommendations based on Integrated Weed Management for cooperators.

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STRATEGIC PLAN (INTEGRATED WEED MANAGEMENT PLAN)

Strategy for Integrated Weed Management in the
Musselshell River Cooperative Weed Management Area

(November 12, 2019)

MCC Crews treating Saltcedar along the Musselshell River near Melstone

I. INTRODUCTION

A common operating approach to the management of noxious weeds and other invasive plants is to focus strictly on specific sites. Weeds are treated, but the relationship of the treatment to the entire weed problem in an area is not addressed. In addition, individual landowners and managers in a given area attempt to manage weeds based on narrowly defined objectives, independent of each other.

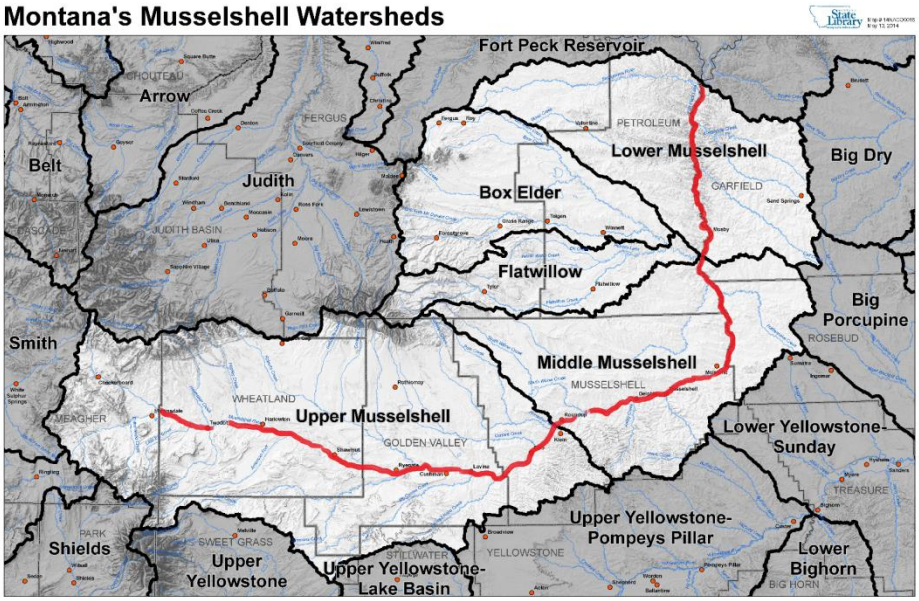
Treatment of specific weeds and sites remains a critical component of an effective strategy. However, long-term solutions to the problem of noxious weeds and other invasive plants must include a broad-scale approach to weed management. A weed management area is a broad-scale approach to managing invasive exotic plants. The landscape view places specific weeds and treatment sites in context with geographic distribution of invasive plants, susceptible habitats and management feasibility. The weed management area focus is finding solutions to invasive weeds across a landscape, rather than strictly focusing on treatments on specific land ownerships. The following plan outlines a landscape approach to the weed problem in the Musselshell River CWMA.

II. PURPOSE

The MRCWMA (Musselshell River CWMA) is intended to bring together those responsible for weed management within the MRCWMA, to develop common management objectives, set realistic management priorities, facilitate effective treatment, and coordinate efforts along logical geographic boundaries with similar land types, use patterns, and problem species.

III. CWMA BOUNDARIES

The MRCWMA is in the geographic area of the Musselshell Watershed (HUC Number 100402). It begins in the middle of the river corridor and extends to the boundary of the 100-year flood plain. It follows the length of the Musselshell River from the headwaters in Wheatland County to the confluence at the Missouri at the Charles M. Russel National Wildlife Refuge.



IV. COOPERATIVE WEED MANAGEMENT AREA GOALS, STRATEGIES, AND OBJECTIVES

MRCWMA has four central GOALS as stated. 1.) Prevent the introduction, reproduction, and spread of designated noxious weeds and invasive exotic plants into and within the MRCWMA. 2.) Reduce the extent and density of established noxious weeds to a point that natural resource damage is within acceptable limits. 3.) Put into action the most economical and effective control methods for the target weeds. 4.) Implement an integrated management system using all appropriate available methods or a combination of methods.

The MRCWMA will achieve these overarching goals through the following STRATEGIES and OBJECTIVES:

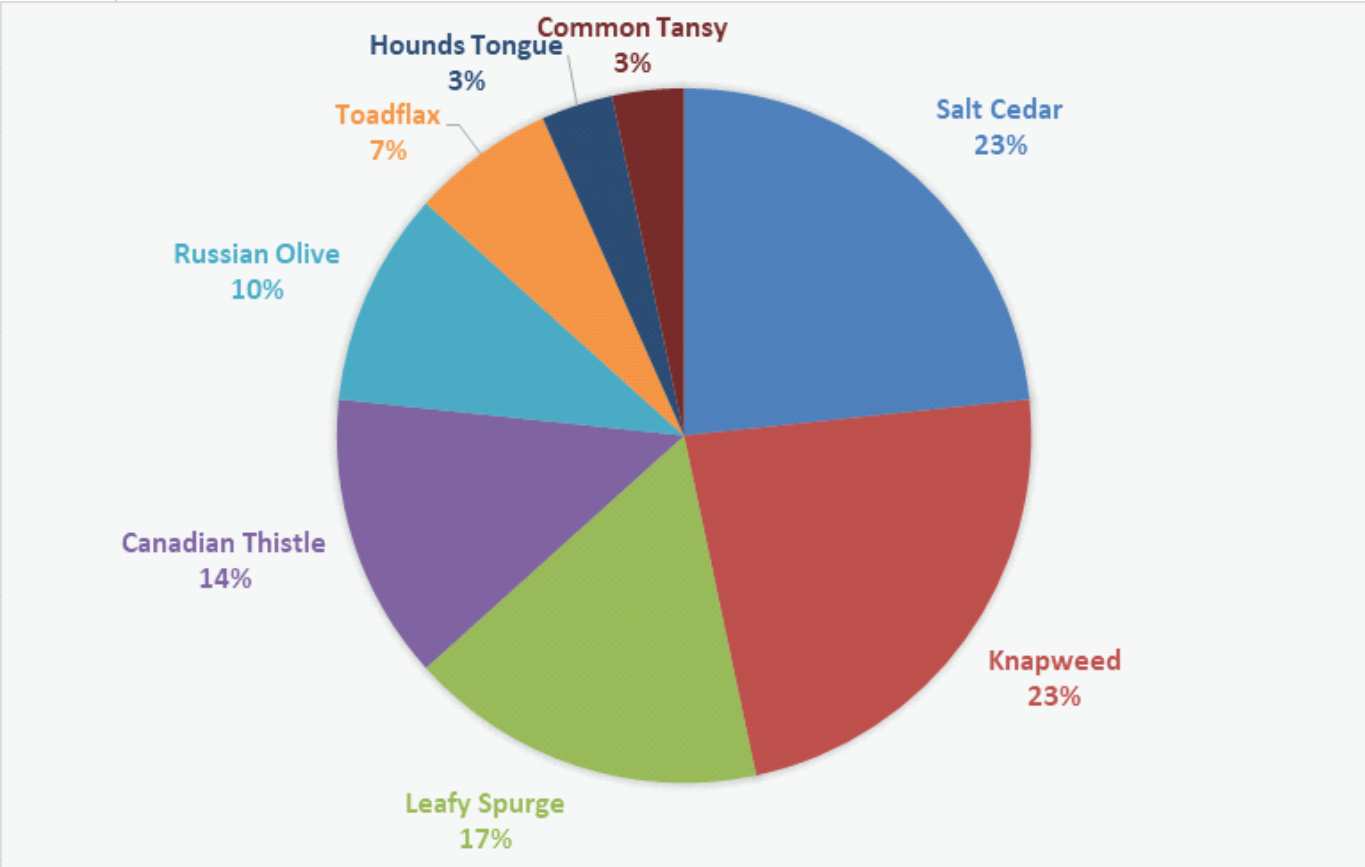
1. Leveraging funding for partner projects.
    a. Coordination of joint partner projects,
    b. Utilize the Musselshell Watershed Coalition for coordination of projects,
    c. Compile funding sources,
    d. Sponsor joint grant applications,
    e. Provide letters of support for partner projects.
2. Improve communication about invasive species projects among partners.
    a. Hold biannual CWMA meetings,
    b. Share quarterly updates via email,
    c. Provide a biannual newsletter with partner updates,
    d. Develop educational materials to be shared among partners for wide use and distribution to the general public,
    e. Share funding opportunities among partners.

V. PRIORITY and APPROACH

The Musselshell River CWMA partners identified priority species for treatment. The partners within the CWMA will continue to target all noxious weeds and invasive species, however, the species listed below will be the priority for collaborative projects.

The strategy for many weed districts and partners working on invasive species treatments has been to keep invasive species confined to the river corridor and keep them from spreading to the uplands. This approach has kept much of the invasive species problem to the river corridor. The new CWMA recognizes the efficiency of this approach and will selectively prioritize projects that will target species within the river corridor without diminishing the efforts to keep invasive species from spreading in the uplands. In some cases, it will be appropriate for CWMA partners to work outside the boundary on upland projects in order to keep species from invading the river corridor or to keep species confined to the river corridor.

A note on Russian Olive trees: This CWMA is the Musselshell River corridor. Several landowners in this corridor have already attempted to eliminate Russian Olives through removal of the trees. In some situations, the removal of the trees has caused bank instability. The trees had previously acted as bank armor and in their absence, the banks eroded away



V. STEERING COMMITTEE

Cooperators of the weed management area include private landowners, county government, university, state and federal land management agencies, and interested organizations and individuals. A steering committee has been organized from interested cooperators to jointly:

- Develop and maintain an integrated inventory
- Develop area-wide informational, educational, and public awareness material
- Coordinate the use of resources and manpower to treat designated weed infestations
- Manage designated weeds in an integrated approach

VI. INTEGRATED MANAGEMENT SYSTEM

Integrated weed management "… is a system for the planning and implementation of selected methods of management for preventing, containing, or controlling undesirable plant species or group of species using all available strategies and techniques." [1] Together these strategies and techniques are economically and environmentally more effective than any single option. All control methods are available and are prescribed on a species/infestation specific basis. Elements of Integrated Management included in this plan are:

Education/Awareness, Prevention/Early Detection, Inventory, Treatment (including physical, biological, cultural and chemical methods), and Monitoring.

[1] Definition from Federal Noxious Weed Law

A. Education/Awareness

Education and awareness programs foster public understanding of the threat invasive exotic plants pose to the natural resources of the MRCWMA, the techniques used to manage the weeds, and the role humans play in the dispersal and establishment of invasive weeds. Awareness also provides an important first step in the detection of new invaders. Education includes the training of weed district and agency personnel, private landowners and general public in weed identification, new management techniques, monitoring protocols and other skills needed for the management of noxious and other invasive weeds.

B. Prevention/Early Detection

Prevention measures are management practices that reduce the potential for the introduction, establishment or spread of weeds. Prevention is a high priority in the management of noxious weeds. In the long term, it is more cost effective to prevent weeds from establishing than to initiate post-infestation treatment. The following list of land management activities requires consideration and evaluation of prevention measures, including, but not limited to:

- Range management activities
- Farm management
- Road construction/reconstruction and maintenance
- Construction and use of rock pits
- Mining activities
- Wildlife enhancement projects and management
- Fire suppression and rehabilitation
- Timber management
- Recreational activities (including construction and maintenance of rec. sites, and areas of concentrated use such as campsites, trailheads and trails, and off-road vehicle use)

C. Inventory

An inventory is the collection, documentation, and storage of information on the extent and location of invasive weeds within the MRCWMA. A critical part of integrated management is a current inventory of infestations occurring within the CWMA. An inventory provides necessary information for establishing site-specific priorities and management objectives, and for prescribing treatment methods. Inventories and treatments should be done congruently when possible.

D. Treatment Methods

Under the integrated approach, all control methods are available. The use of all available options in combination will result in the most successful weed management program. Specific treatment is determined by plant species, site characteristics, and management objectives. The following management techniques of noxious weed control will be considered on a site-specific and plant species basis:

Physical/Mechanical: The use of physical or mechanical methods for weed control can be effective on small infestations of annual or biennial species. Hand grubbing, mowing, tilling, and burning are commonly used to physically destroy weeds or interfere with their reproduction. To be most effective, treatment should take place before seed production. Plants that have flowered should be removed from the site and destroyed. Repeated mowing or tilling during the growing season is required with most weed species.

Biological: Biological weed control involves the deliberate introduction and establishment of natural enemies to reduce the target plant's competitive or reproductive capacities. Insects are the most common agent released against noxious weeds. Plant pathogens, such as fungi, are increasing in use. Prescriptive grazing has also been effective in reducing densities and limiting spread of specific weed species. Biological control can be a slow process, often requiring 10 to 20 years to be effective. Its purpose is not eradication but a reduction in densities and rate of weed spread to an acceptable level. Bio Control is most effective on dense weed infestations over large areas and in locations where other control methods are impractical.

Chemical: Herbicides are a common tool for the control of noxious weeds. Herbicide application and rates are dependent upon specific site characteristics, target plant, location, non-target vegetation and land use. Herbicides are an important method of treatment when control or eradication is the management objective. Environmental concerns make it critical to follow all label instructions, site directions, and safety precautions when using any herbicide.

Cultural/Land Use: Cultural practices are activities that purposefully enhance and maintain the growth of desired vegetation. Practices that retain, enhance, or introduce desirable plant species that out-compete or dominate exotic plant species can serve as prevention, control and/or follow-up. Examples that are applicable to the management area are seeding, planting, fertilizing, and retaining brush and tree canopy cover. Grazing prescriptions that are designed to maintain or enhance perennial vegetation in a healthy state or maintain soil cover is an important practice in slowing the spread of invasive plants. Minimizing the extent and duration of exposed soil during management actions can also reduce the risk of weed establishment.

E. Monitoring

Monitoring is the collection of information to determine the effectiveness of management actions in meeting the prescribed objectives. Noxious weed management focuses upon density and rate of spread of invasive exotic plant species and the effect these aggressive plants have on the natural resources. The cooperators are also interested in the effectiveness of prescribed actions on the target plant and the response of desirable vegetation. Monitoring will help determine if our prescriptions and activities are accomplishing the goals and objectives established by MRCWMA partners.

The effects of a Saltcedar Removal project with MCC and Musselshell Weed District thanks to a NFWF Grant

VII. MANAGEMENT RECCOMENDATIONS

The following management and treatment recommendations are presented to help provide direction and to coordinate management efforts of the MRCWMA cooperators. These recommendations can help to focus resources where they are the most effective in managing weeds across CWMA.

This Plan does not directly affect or alter weed management programs outside the MRCWMA.

Management Objective Definitions:
Eradicate: Elimination of a noxious weed based on absence as determined by a visual inspection by the control authority during the current growing season.
Control: Means any of the following: prevention, rehabilitation, eradication or modified treatments.
Containment: Weeds are geographically contained and are not increasing beyond the perimeter of the infestation.
Prevention: Reduce conditions that favor the presence of noxious weeds through management of habitat disturbance and weed dispersal, and the improvement of vegetation condition.

General Management Recommendations for the Musselshell River Cooperative Weed Management Area:

1. Prevent the establishment of listed noxious weed species (Appendix A).
2. Eradicate listed noxious weed species.
3. Reduce the density or slow the spread of widespread established listed noxious weed species.
4. Treat transportation corridors and areas of concentrated activities, such as roads, trails, campgrounds, trailheads, parking lots and/or treat satellite infestations of listed noxious weed species.

Specific Management Recommendations for the Musselshell River Cooperative Weed Management Area:

A. Education/Awareness

Education and Awareness is a critical element in the long-term management of noxious weeds in the MRCWMA. Creating awareness of the threat to the Musselshell River's natural resources and the need to manage weeds will provide the foundation for active treatments, early alert programs, and prevention practices. Continued education of practitioners may ensure that effective strategies and new technologies will be incorporated into management actions. The following Education/Awareness practices are recommended to MRCWMA cooperators for managing noxious weeds:

1. Conduct annual weed fairs/seminars and tours.
2. Develop and maintain a weed management display for public gatherings such as fairs, expos, conventions, and shows.
3. Develop interpretive signs to alert the general public of the threat of weeds and the efforts in the CWMA.
4. Posting weed identification signs at specific trailheads, road turnouts and other public places.
5. Develop an Adopt-A-Weed program at specific fishing spots, campgrounds, trailheads and boat launches. Possible groups include garden clubs, Boy Scouts and recreation clubs.
6. Provide presentations to classrooms and special interest groups such as horse council, Off-Highway Vehicles (OHV) groups, powerboat/rafting groups, etc.
7. Develop and implement training programs to familiarize agency personnel with noxious weeds.
8. Develop brochures and pamphlets specific to the CWMA. Examples include noxious weed-free feeds, early alert posters and local overview of existing weeds.
9. Facilitate communication and coordination of cooperators and partners in the CWMA.
10. Develop demonstration plots for treatment and management techniques.
11. Develop and maintain a newsletter for the CWMA.
12. Work with cooperative agencies in developing qualification guidelines for weed management personnel.

B. Recommended Prevention Strategies

Cooperators can strive to integrate appropriate prevention measures into management activities and promote the use of practices that reduce rates of weed spread throughout the MRCWMA. Cooperators should strive to work with agencies, organizations, and individuals in the development and implementation of prevention practices that could be effective in reducing dispersal and establishment. The following Prevention practices are recommended to MRCWMA cooperators for managing noxious weeds:

1. To the extent possible, minimize disturbance in areas or habitats highly susceptible to weed invasion.
2. Revegetate disturbed sites as soon as possible after disturbance.
3. Encourage the use of high-quality seed that is free of noxious weeds. Consider having the seed tested for "all states noxious weeds," prior to planting.
4. Promote and support the use of certified noxious weed seed-free, and/or noxious weed-free feeds.
5. Clean equipment and vehicles by washing or compressed air when transporting between sites (including both on and off road equipment).
6. Manage high human use areas, such as campgrounds, trailheads, turnouts, parking lots, equipment yards, fishing spots, and boat launches, in a weed-free state.
7. Maintain existing weed-free areas.
8. Maintain rangeland and open forest sites in healthy vigorous condition.
9. Where practicable, maintain native tree and brush cover.
10. Where feasible, limit access through heavily infested areas.
11. Do not drive vehicles (ORV, trucks, etc.) through infestations.
12. Where shoulders or drainage ditches are covered by desirable herbaceous cover, to the extent possible, the vegetation should be left in place rather than blading it off, if such practice can be done without causing excessive damage to the road surface or significant public safety hazard.
13. Road maintenance should incorporate practices to prevent the spread of noxious weeds.
14. Avoid the use of noxious weed-infested sites as staging areas for large projects, such as fires, construction, landings, etc.
15. Provide noxious weed identification training and discuss the connection between weed spread and human activities.
16. The following practices are intended to reduce the risk of transporting noxious weed seed by livestock:
    - Where practical, do not herd or trail livestock through weed infestations.
    - Graze livestock in weed infested areas when weeds are not flowering or producing seeds.
17. Use the following practices to reduce the risk of spreading weeds by pack and saddle stock.
    - Pack and saddle stock should be fed noxious weed-free feed for two to three days prior to traveling in the backcountry.
    - Pack and saddle stock should be brushed to remove any weed seed.
    - Exclude pack and saddle stock from dense weed sites, where the risks are high and the animals could spread the weeds off-site.
18. Maintain an early alert program where cooperators and interested public report the location of new weeds or new locations of existing weed infestations.

C. Inventory and surveys

A coordinated weed inventory should be maintained for the entire management area. Submitting information to the inventory helps other cooperators in their management efforts. Treatment measures should be carried out alongside inventories to ensure best use of funds and man power whenever possible. During a survey of a specific area the data that is collected should include but is not limited to depending on the type of inventory/survey: Date, size of infestation, name of target plant, density, and location. The creation of maps through GIS can help to facilitate the sharing of noxious weed locations, infestation sizes, and treatments. The following Inventory practices and resources are recommended to MRCWMA cooperators for managing noxious weeds:

1. Exploratory surveys should be used when little is known about location or species. Exploratory surveys cover large areas over shorter periods of time with low cost and gather basic information. Helps to understand species present, abundance, and distribution.
2. Reconnaissance surveys gather data on the abundance and distribution of species already known to exist within the survey area. They should occur periodically to keep records updated on abundance and distribution. Reconnaissance surveys gather more precise information and define boundaries on large and small infestations.
3. Extensive surveys occur after an exploratory or reconnaissance survey and are used to gather finer details, delineations, and resolutions. Builds upon previous surveys and gathers data on environmental factors and conditions.
4. Intensive surveys gather as much information as possible at higher accuracies and detail to support scientific research. Include detailed information on plant species and the surrounding environment. Usually over smaller areas.
5. Exploratory and reconnaissance surveys should be prioritized
6. Recommended surveys methods are in structured grids or line transects
7. Recommended resources for storing and accessing data:
    - EDDMAPS West
    - Montana Natural Heritage Program
    - Weed district files
8. Cooperators should strive, at their comfort, to share data to these services and to other cooperators in the CWMA
9. Agreement on a single source for storing and accessing inventory data among all cooperators is recommended
10. Trainings on resources and methods are highly recommended
11. Inventories and surveys can be conducted during the treatment process, not only of target species but of other possible noxious weed species

D. Monitoring/Evaluation

Monitoring and evaluation should focus on four general questions:

- Is the plan being implemented?
- Are the objectives and priorities realistic and achievable?
- Are the treatments effective in meeting the planned objectives?
- Are the weeds continuing to spread beyond our control actions?

Monitoring should take into account the treatment type, cover, weed species, and goal for the site. This information can be evaluated to answer the four resource questions stated above. Considerations of general weed spread, herbicide treatments, and bio-control agents, are listed:

1. Long-Term Spread of Weeds
   Monitoring of weed spread and/or suppression can be accomplished through existing databases and GIS layers.

2. Herbicide Treatment
   Herbicide treatments can be monitored following two general intensity levels.
   - Visual Assessments: Personnel conduct visual reconnaissance of the treated area after chemical application to determine the presence or absence of target plants, and/or desirable vegetation.
   - Systematic sample: Within selected infestations sample plots are be established to document changes in target plant densities, species composition, and cover of desirable vegetation.

3. Biocontrol Agents
   Coordination and monitoring are essential for biocontrol. Coordinating releases can help to ensure success and prevent wasting release attempts for agents that are already established. Monitoring can determine insect establishment success, insect population trends, insect impact on target plants, and the effect of insect populations on weed population density and spread. General visual reconnaissance should periodically be completed for target organisms that have been targeted towards specific weeds. In some cases it may be ideal to use a net, and standard procedure for the given insect, to better quantify population densities.