Montana Correctional Enterprises Ranch
Noxious Weed Management Plan
And Agreement with Powell County Weed Board
FY 2023 and FY 2024

Pursuant to MCA 7-22-2151, following is the biennial Noxious Weed Management Plan (hereinafter referred to as Plan) for the Montana Department of Corrections, Montana Correctional Enterprises (hereinafter referred to as MCE) Ranch. Each biennial plan will be approved by the Powell County Weed Board.

Vision Statement

It is the vision of MCE Management, specifically the Division Administrator, Agriculture Director and Ranch Manager to identify and eradicate all noxious weeds on the MCE owned and leased ranch lands.

Goal Statement

It is the goal of MCE Management to control the spread of noxious weeds on MCE ranch lands and eradicate the weeds where eradication is a viable goal. To achieve this goal, the following will be necessary:

- Identify infestations and address them at the earliest time frame to stop the spread of newly identified weeds and those that are a persistent problem.
- Work closely with neighboring landowners to control the spread of noxious weeds from their lands to MCE ranch lands.
- Erect signage on roads with public access to request the land users to assist in the stopping the spread of weeds by staying on posted roads.
- Continually update and evaluate the Plan to address additional needs as they arise.

MCE Responsibilities

It is the sole responsibility of MCE to provide weed control measures on all owned and leased properties. It is also the responsibility of MCE to comply with all aspects of MCA 7-22-2151.

The MCE Agriculture Director will ensure that the annual report, documenting all noxious weed actions and the cost of those actions, is submitted to the County Weed Coordinator or the State Coordinator by the due date.

In addition, the MCE Agriculture Director will concentrate on the early detection and containment of new weed species and containment of current noxious weeds.

Powell County Weed Board Responsibilities

Pursuant to MCA 7-22-2151, the Powell County Weed Coordinator will submit the biennial performance report to the Department of Agriculture's State Weed Coordinator regarding the success of the MCE Noxious Weed Management plan.

Other MCE Responsibilities

It will be critical for MCE Management to ensure that all ranch employees involved with the application of pesticides are licensed through the Department of Agriculture pesticide program and that all pertinent training and education that is received is documented.

Control of weed chemicals is critical in all ranch and farm operations but becomes additionally critical in the environment of a correctional facility. The Ranch Manager will ensure that weed control chemicals are appropriately marked, stored and controlled from unauthorized use by inmates or staff. Monitoring of the use and storage of weed control chemicals is critical to the safety and orderly operation of the MCE ranch and Montana State Prison facility.

The Agriculture Director will complete an annual evaluation of weed management efforts and review and update the biennial plan to consider the efforts and outcomes of the current year's activities.

Budget

The annual budget for weed control of MCE ranch lands is set at $40,000. This amount will be reviewed annually to ensure that the budget is adequate to address the persistent weed problems. If additional budget is required, adjustments will be made as necessary. Powell County Weed Board grant funding will also be utilized as available to assist in addressing the identified noxious weed issues.

Ranch Land Description

The ranch is approximately 37,895 acres, of which 33,288 are owned by the Montana Department of Corrections and 4,606 are leased school trust lands. The leased property is scattered amongst the deeded property.

The ranch land sections are contiguous and located in Powell County, Montana. (See Appendix A.) The ranch lies between the Clark Fork River to the East and the Flint Creek Range to the West, which at the maximum is six miles wide and between the Gold Creek area to the North and Dempsey creek area to the South, which at the maximum is sixteen miles long. In some areas of the ranch, the property is only one section (one mile) wide.

The county roads that cross the ranch, along with a major high-voltage power corridor running the length of the ranch, are the major problems. It is obvious that the pattern of weed infestations has started at these points and has moved outward, primarily down the canyons, coulees, draws, and waterways.

The ranch includes a wide variety of soil types from gravelly glacial moraines to moderately deep loams. These wide variations sometimes occur within short distances and complicate weed control planning and application.

The Montana State Prison complex lies in the center of the ranch and brings some other complications to noxious weed control. These complications include effective application of weed control chemicals and their residual effect.

History

Although there is not an accurate historical document that identifies weed infestation on the ranch, it is logical to assume that some noxious weeds have existed since the time that the state assumed ownership of the property.

Identified Problem Areas, Primary and Secondary Infestations

- Roadsides, hunting parking lots and construction areas near the Montana State Prison facility – Spotted knapweed
- Glacial moraine areas in the Conley Lake, Tin Cup Lake Reservoir and Mud Lake areas – Spotted knapweed, leafy spurge, thistle and white top.
- Road to Powell Reservoir – Spotted knapweed, leafy spurge and hound's tongue.
- Boundary fence with Verlanic Ranch, at the southeast corner of hayfield – Kochia and white top.
- Hillside above Ranch 2 – Spotted knapweed and leafy spurge.
- Ranch 2, Elk Ridge and Job Corps roads – Spotted knapweed and leafy spurge.
- Power line corridor from the south boundary to Powell creed – Spotted knapweed, thistle and black henbane.
- Section pasture – Spotted knapweed.
- Mullen and Taylor drainages - Spotted knapweed, sulfur cinquefoil and leafy spurge.
- Lower Morrison drainage – Leafy spurge.
- South end of the ranch – Leafy spurge.
- Pastures west of the dairy – reoccurrence of small outbreaks of leafy spurge.
- Ditches along neighboring ranch lands in areas of Ranch 2, Morrison ditch and west side canal - Spotted knapweed and sporadic leafy spurge.
- Ranch 7 (surrounding hayfields) – Leafy spurge, yellow toadflax, thistle and black henbane.

Short Term Goals

1. Develop cooperative agreements with neighbors, other state and county agencies and other parties that could mutually benefit from noxious weed control on MCE Ranch and adjoining lands.
2. Cooperate with Department of Agriculture's State Weed Coordinator and the County Weed Coordinator to ensure that all reports are filed timely and accurately.
3. Maintain legislative spending authority for the necessary expenditures through the budget process.
    a. Earmark funds for noxious weed control purposes ($36,000 in FY 21-22).

4. Identify problem areas and the primary and secondary infestations.
5. Recognize endangered plant or animal species within the weed control areas and provide for their protection, if necessary.
6. Identify all effective preventive measures, such as chemical, biological, crop rotation, composting, restricted vehicle usage and cooperative agreements.
7. Identify best means of eradication such as spray trucks, backpack prayers or aerial application.
8. Develop strategies for prevention of spread to lands that remain unaffected by noxious weeds through a systematic prevention program.
9. Ensure that all ranch staff involved in weed application have current applicator's licenses.
    a. Ensure that inmate crews that work with the weed control activities are trained and supervised to ensure compliance with all laws and policies.
10. Maintain the good working relationship with Powell County Weed Board.
11. Explore cooperation with Bonneville Power and USFS for weed control on power line right of ways and USFS property and access roads.
12. Inventory, map, monitor and evaluate – Map the current weed infestations, inventory weed types, determine the extent of the infestation and the plan of action for eradication. Complete an annual evaluation of weed management efforts and review and update the plan to consider the efforts and outcomes of the current year's activities.
13. Concentrate on the early detection and containment of new weed species and containment of current noxious weeds.

Fiscal Year 2023 Plan of Action

- Aerial spray 2000 acres in Sections 26, 27, 28 and 29 of 7N 10W.
- Spot spray logging roads to help native grass.
- Continue monitoring of irrigation ditches especially in late fall.
- Mow roadsides in the fall.

Fiscal Year 2022 Monitoring Completed

- ✓ Cash flow prevented spraying due to high costs and low prices.
- ✓ Improvement in Mud Lake area with bio control.
- ✓ Hand rogued along Big Field and Ranch 2 sumps.

Fiscal Year 2023 Plan of Action

- Spray Upper Ranch 2 Spring Wheat Field.
- Bio control of leafy spurge, spotted knapweed and possibly toadflax.
- Spot spray small infestations.
- Mow roadsides in the fall.
- Print and issue MCE Ranch maps for all Supervisors.

Fiscal Year 2023 Monitoring Completed

- ✓ Cash flow prevented aerial spraying.
- ✓ MSP Maintenance was able to spray perimeter and compound.
- ✓ Bio control of leafy spurge and knapweed continues to improve.
- ✓ Success on perimeters of Ranch 7.

- ✓ $4,157.76 of MCE funds spent on weed control for Upper Ranch 2.

Fiscal Year 2024 Plan of Action

- Increase amount of dollars spent and number of acres controlled.
- Aerial Spray 2000 acres in Sections 26, 27 and 28 of 7N10W and North ½ of Section 16 of 8N10W.
- Continue working with Powell County Weed District with bio control options.
- Issue MCE Ranch map to all supervisors for weed identification and monitoring.
- Increase number of areas spot sprayed.

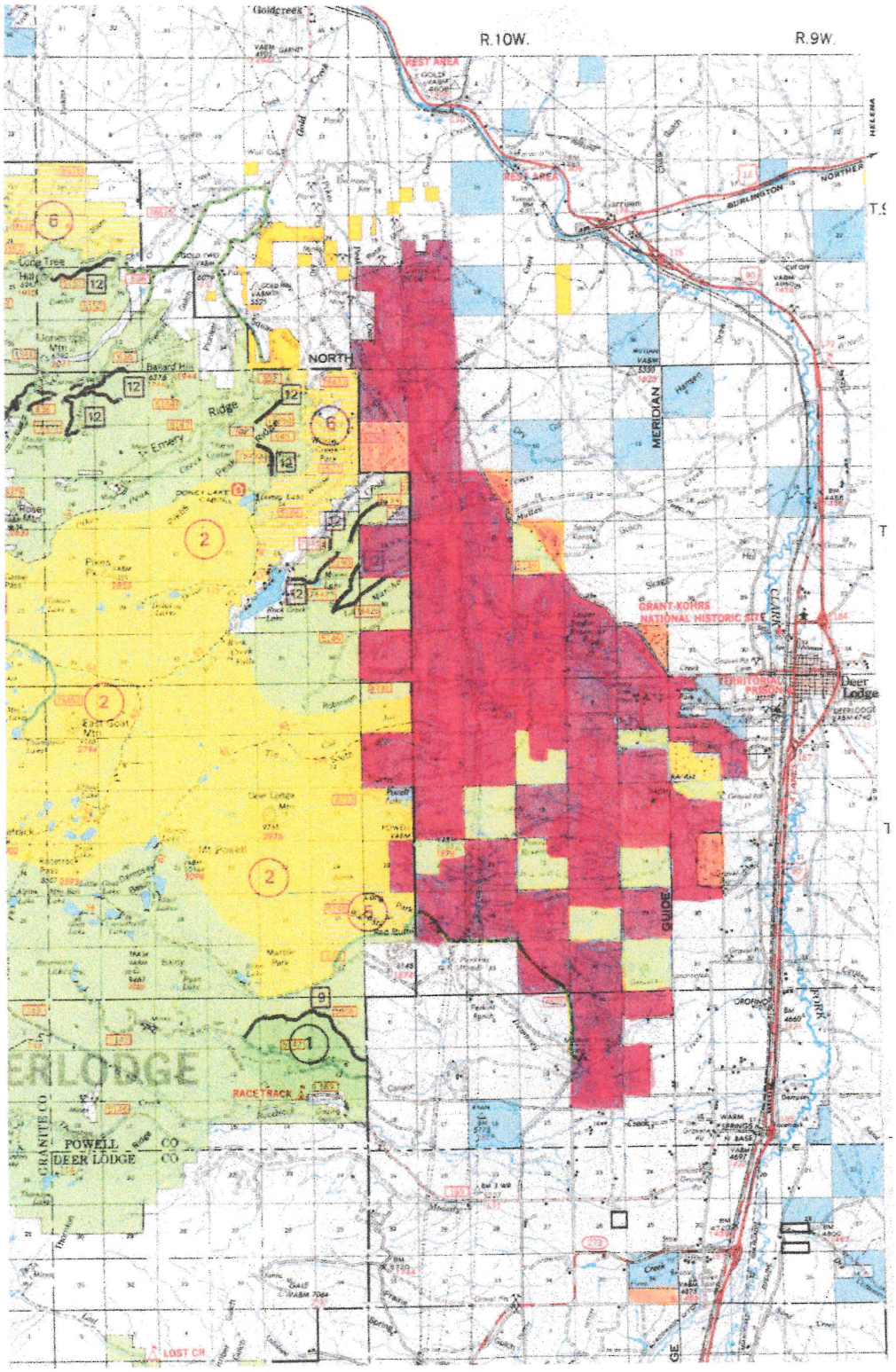
This Noxious Weed Management Plan has been reviewed and approved by the following parties:

Gayle Butler, MCE Administrator — 5/30/2023 Date

Ross Wagner, MCE Agriculture Director — 5-30-23 Date

Karen Laitala, Powell County Weed Coordinator — 05.24.2023 Date

APPENDIX A
MCE RANCH LAND MAP



APPENDIX B
MCE WEED TYPE INFORMATION

Spotted Knapweed (*Centaurea maculosa)*

- is a biennial or short-lived perennial
- currently infests more than 4.5 million acres in Montana
- stem height varies from two feet to four feet. Slender stems are many branched and bear single, pinkish-purple flowers at the tips.
- flowers are purple to pink, rarely white, with 25 to 35 flowers per head
- flowers bloom from June to October
- seeds germinate in the fall and early spring when moisture and temperature are suitable
- site conditions and precipitation during the growing season have the greatest effect on the number of seeds produced each year. More seeds are produced during wet years.
- seeds remain viable in the soil for at least seven years
- populations are largely extended through peripheral enlargement of existing stands
- causes loss of wildlife and livestock forage, increases moisture runoff, soil erosion and stream sedimentation
- is controlled through the use of Tordon, Stinger, 2 4-D and Banvel will control spotted knapweed on rangeland. The Ranch utilizes Tordon in its weed control efforts at a rate of 1 pint per acre.

Leafy Spurge (Euphorbia esula)

- is a deep rooted perennial forb that spreads by seeds and roots
- stems are hairless and pale green or blue-green. They grow 16 to 32 inches in dense patches. The narrow, hairless leaves are alternate on the stem. Stems and leaves contain a milky latex. The small flowers are green and inconspicuous, but are surrounded by a pair of yellow-green, heart-shaped leaves that are often mistaken for flowers.
- currently infests more than 600,000 acres in Montana
- overruns and destroys grazing lands for cattle and horses, decreases rangeland plant diversity, threatens native plants and reduces land values.
- is very difficult to control once it becomes established. Intensive, long-term, integrated management is necessary to reduce leafy spurge infestations.

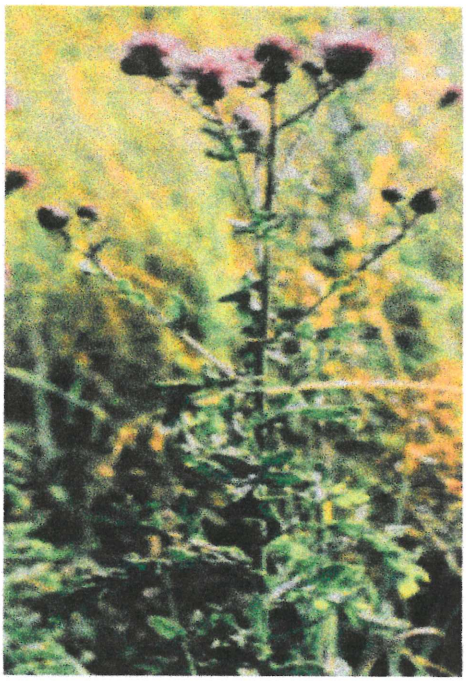
- new infestations originate from seeds or vegetative buds on root pieces which can be brought into uninfested areas by activities such as outdoor recreation, agriculture and construction.
- five methods are used to manage leafy spurge: prevention, plant competition, physical control, biological control and chemical control
- chemical control consists of Tordon, and 2 4-D
- The Ranch utilizes Tordon in its weed control efforts at a rate of 4 pints per acre.

Knapweed (Centaurea repens)

- is a perennial, forming dense colonies by adventitious shoots from widely spreading black roots
- stems are erect, openly branched, 18 to 36 inches taller. Lower leaves are deeply lobed, 2 to 4 inches long; upper leaves entire or serrate, narrow to a sessile base. Cone-shaped flowering heads are ¼ to ½ inch in diameter, solitary at the tip of leafy branchlets. Flowers are pink to lavender
- is a deep rooted, rhizomatous, perennial forb which may penetrate to a depth of over 8 feet.
- flowering occurs in June to September
- grows about two feet tall. Stems are thin, stiff and covered with soft, short hairs. The rosette leaves are narrow at the base and widen toward the top. Stem leaves are grayish-white and have irregular shaped lobes that are divided about on-half of the way to the mid-rib. The flowers are pink to purple
- currently infests more than 47,000 acres in Montana
- can cause nervous disorders if consumed by horses
- populations are largely extended through peripheral enlargement of existing stands
- causes loss of wildlife and livestock forage, increases moisture runoff, soil erosion and stream sedimentation
- is controlled through the use of Tordon, Stinger, 2 4-D and Banvel will control spotted knapweed on rangeland. MCE Ranch utilizes Tordon in its weed control efforts at a rate of 2 to 3 pints per acre.

Canadian Thistle (Cirsium arvense)

- is a perennial forb reproducing seed and creeping root stocks
- has purple flower heads with male and female flowers on separate plants
- has several varieties that are distinguished mainly by leaf shape, size and abundance of leaf spines
- stems are 1 to 4 feet tall, ridged, branching above. Leaves are alternate, lacking petioles, oblong or lance-shaped, dived into spiny-tipped irregular lobes. Flowers are unisexual, on separate plants; flowers purple (occasionally white) in heads ½ to ¾ inch in diameter. Fruits are about 1/8 inch long, somewhat flattened, brownish, with a tuft of hairs at the top
- flowering occurs during July and August
- is an aggressive weed that is difficult to control
- can produce up to 20,000 seeds per year per plant
- currently infests more than 1.8 million acres in Montana
- is controlled through the use of Curtail at the application rate of 4 pints per acre



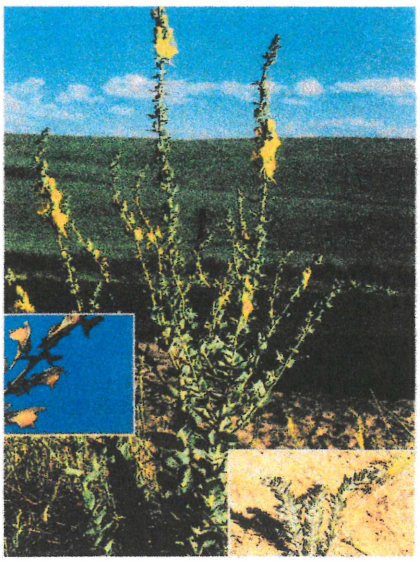
Sulfur Cinquefoil (Potentilla recta)

- is a long-lived perennial with a woody rootstock
- can produce several erect stems which can reach one to three feet in height.
- stands 1 to 1 ½ feet tall, with well-developed rootstocks
- has numerous stem leaves and few basal leaves
- has long hairs growing at right angles to the leafstalk and stem
- The flat-topped inforescences are three to six inches across, and each flower has five light yellow petals surrounding a dark yellow center. The fruits are achenes, which are dark brown, with lighter, prominent, branched ridges, and narrow, winged margins
- reproduces by seed, but it can be spread by roots if they are moved by tillage or on soil-moving equipment
- is often found in disturbed areas such as roadsides and pastures
- flowering occurs in May to July
- regenerates annually via new shoots emerging from the edges of the root mass
- is well adapted to dry open range and pasture areas
- currently infests over 50,000 acres in Montana
- is controlled through Tordon and 2 4-D provide effective control without harming grasses.

Whitetop (Cardaria chalepensis)

- is a deep-rooted perennial forb that spreads by seeds and root fragments
- the flor shave four petals and six stamens. Individual white flowers are borne on slender stalks about a half inch long. Dense blooming stands look very much like a late-melting patch of snow. The plants normally grow from 10 to 24 inches tall. All leaves have a covering of soft white hairs.
- currently infests more than 56,000 acres in Montana
- emerges very early in April to May and sets seed by mid summer
- affects on rangeland and pasture is similar to leafy spurge. Reduces bio-diversity forage production and displaces native plant communities in affected areas. They will also invade cropland, especially alfalfa.
- weeds are well adapted to moist habitats, especially sub-irrigated pastures, hay fields, rangeland, roadsides and ditch banks.
- Root system is similar to leafy spurge
- five methods are used to mange this weed: prevention, mechanical control, cultural control, biological control and chemical control
- chemical control includes Tordon, 2 4-D, and Escort. The Ranch uses Escort at the rate of 1 ounce to a acre. Treatment of this weed is long-term.

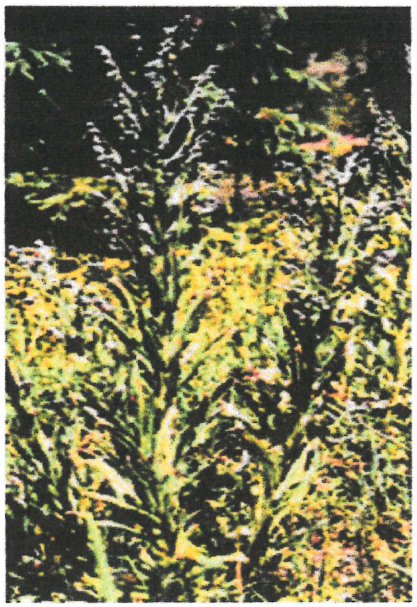
Yellow Toadflax (*Linaria dalmatica*)



- is a perennial plant, reproducing by seed and roots
- stems grow 2 to 3 feet or taller. Both leaves and stems are waxy with a whitish or bluish cast. Leaves are usually heart-shaped.
- has bright yellow snap-dragon-like flowers with a long spur
- often found in well-drained, relatively coarse-textured soils varying from coarse gravels to sandy loams, but are sometimes found in heavier soils
- displaces existing plant communities and associated animal life. Results in a loss of forage for domestic livestock and big game animals
- currently infests more than 96,000 acres in Montana
- is very difficult to control once it becomes established

- single plant can produce up to 500,000 seeds beginning in late June to early July and continuing until October
- six methods are used to mange this weed: prevention, mechanical control, cultural control, grazing, biological control and chemical control
- use of herbicides to manage toadflax is highly variable partly because of the plants' high genetic variability.
- chemical control includes Tordon, 2 4-D

Houndstongue (*Cynoglossum officinale*)



- is a biennial growing 1 to 4 feet tall and reproducing by seed
- leaves are alternative, 1 to 12 inches to long, 1 to 3 inches wide, rough, hairy and lacking teeth or lobes
- flowers are reddish-purple and terminal
- the grout is composed of 4 prickly nutlets each about 1/3 inch long
- leaves are rough and resemble a hound's tongue
- is found in pastures, along roadsides and in disturbed habitats.
- Is toxic containing pyrrolizidine alkaloids, causing liver cells to stop reproducing. Sheep are more resistant to houndestongue poisoning than are cattle or horses.
- chemical control includes Tordon, 2 4-D and Escort. The Ranch uses Escort at the rate of 1 ounce to a acre