Montana Invasive Species Council

Meeting Materials Packet for April 12, 2023

Contents

MONTANA INVASIVE SPECIES COUNCIL

AGENDA

Note: Agenda is subject to change and times are approximate. Actual times may vary by up to one hour.

Hauser Dam near Helena, MT. Hybrid meeting.

WEDNESDAY, April 12, 2023

9:00 a.m. – 9:10 a.m.	**INTRODUCTIONS** Chair Bryce Christiaens Welcome and roll call
9:10 a.m. – 9:30 a.m.	**ADMINISTRATIVE BUSINESS** *ACTION: December 13, 2022 meeting minutes FY23 Budget FY23 AIS Grants
9:30 a.m. – 9:50 a.m.	**eDNA & META BARCODING INFORMATION NEEDS** Chair Bryce Christiaens
9:50 a.m. – 10:00 a.m.	**LEGISLATIVE UPDATES** All
10:00 a.m. - 10:15 a.m.	**BREAK**
10:15 a.m. – 11:15 a.m.	**MISC WORKPLAN REIVEW** Chair Bryce Christiaens Workplan - 1-page Workplan - full document draft Top Invasive Species - 1 page Top Invasives Fact Sheet draft Story map draft
11:15 a.m. - 11:30 a.m.	**SCIENCE ADVISORY PANEL TOPIC** Chair Bryce Christiaens
11:30 a.m. - 12:00 p.m.	**WORKPLAN ACTIVITIES** Communication Strategies Woody Invasives Best Practices
12:00 p.m. – 1:00 p.m.	**LUNCH**
1:00 p.m. – 1:30 p.m.	**FERAL SWINE UPDATES** Liz Lodman Dahlin Tidwell, USDA APHIS-WS (invited)
1:30 p.m. – 2:00 p.m.	**MISC APPOINTMENT TERMS** Chair Bryce Christiaens
2:00 p.m. – 2:30 p.m.	**WRAP UP AND ADJOURN** Location of June meeting Final discussion *Public Comment
2:30 pm - 4:30 pm	**Guided Tour of Hauser Dam** Andy Welch, NorthWestern Energy

This meeting is open to the public. The most current meeting information including meeting materials are available on the MISC website at: https://invasivespecies.mt.gov/misc/meetings-schedule. Persons who wish to attend the meeting in person or via zoom must **register by noon on April 11** at the following link: https://www.surveymonkey.com/r/AprilMISCMeeting. If you have trouble registering using the link, please email Anna.Connerton@mt.gov with your name and a request by noon the day before the meeting.

*Public comment will be available during times the Council acts on items as indicated on the agenda and during the end of the meeting. To provide public comment, participants may "raise their hand" and participate after being recognized by the presiding officer or Zoom manager. Comments will be taken in order. Written public comment may be sent via email in advance of the meeting to Anna.Connerton@mt.gov and will be provided to council members.

Any oral or written public comment provided to the committee is a public record that is recorded and archived.

The Montana Department of Natural Resources and Conservation will make reasonable accommodations for persons with disabilities who wish to participate in this public meeting. For questions about accessibility or to request accommodations, please contact Anna Connerton at 406-444-2613 or Anna.Connerton@mt.gov as soon as possible before the meeting date.

MEETING MINUTES

These abbreviated summary minutes will become the official adopted minutes at the next Montana Invasive SpeciesCouncil meeting when they will be approved. Until then, they are considered a draft.

Meeting/ Project Name:	**Montana Invasive Species Council**		
Date of Meeting:	December 13th, 2022	**Time:**	9:00 AM
Minutes Prepared By:	Anna Connerton	**Location:**	Montana Capitol, Room 137 and virtual via Zoom

Attendees

MISC Voting Members:
Bryce Christiaens (Chair), Tom Woolf (Vice-Chair), Steve Wanderaas (Vice-Chair), Steve Tyrrel, Martin Charlo, Jan Stoddard, Amy Gannon, Mike Bias, Dennis Longknife, Andy Welch, Jasmine Chaffee, Jason Allen

Liz Lodman, Anna Connerton, Mindy Wilkinson

Other Attendees: Amy Seaman (Montana Audubon), Brent Smith (CEMIST), Jill Allen (Jefferson County Weed District), Karen Laitala (Powell County), Kelsey Miller (Executive Director of Weed MT), Pam Schwend (Carbon County), Cassidy Bender (UC3), Michelle Cox, Wendy Velman, Jacob Bradford, Sue Mills, Michelle Cox.

Agenda and Notes, Decisions, Issues

Topic	Discussion
Welcome & Roll call	**Bryce opened the meeting at 9:00 am, conducted roll call and confirmed quorum.**
Administrative Business	**Action Item: Approval of September 7th, 2022, Meeting Minutes** Motion: Steve Wanderaas to approve the September 7th, meeting minutes. Second: Jasmine Chaffee Discussion:

	Steve Wanderaas: A change on page one at the very bottom. Where it says Steve attended the PNWER conference in 2019 – this is incorrect, he attended the Feral Hog Symposium at the University of Saskatchewan in Saskatoon. Public comment: None Action on motion: Motion passed unanimously.
Summit Review	**Liz Lodman – Council Administrator** Trivia: What record-breaking invader nicknamed "Carrot" was recently captured in France? Answer: A goldfish in a pond in France. Who participated in the Summit? Attendance = 106 - 10 Counties - 6 State Agencies (Ag, DNRC, FWP, Livestock, MDT & MNHP) - 7 Federal Agencies (APHIS, BLM, BOR, FS, NPS & NRCS) - 2 Tribal Nations (Blackfeet and Salish Kootenai) - 3 College/Universities (U of M, MSU & Salish Kootenai College) - 6 Industry - 15 NGO's - 6 Neighbors (Alberta, British Columbia, Colorado, Idaho, North Dakota & Wyoming) - 1 Retired Teacher - 5 Legislators The program, the attendees, and the PowerPoints on the MISC website under News + Events → Summit **Discussion:** None
MISC Work Plan	**Mindy Wilkinson** **Top 10: These are the 10 species that highlight the pathways and impacts of invasive species in Montana.** **Discussion:** Mindy Wilkinson: Do you all feel like this reflects the species you want to use to reflect the above statement? Are there any that are left out? Any that are problematic that you would like to consider removing? Steve Wanderaas: Saltcedar: There are some other species that fall in the same

category. Maybe where Saltcedar is it should be Woody Invasives.

Wendy Velman: Agreed.

Steve Tyrrel: Agreed as well. The idea of adding the riparian aspect to it as well, I don't know if that's the right classification.

Bryce Christiaens: I don't know about necessary adding it into the name but within the statement underneath it which were talking about the impacts to water availability and access to Montana's waters.

Mike Bias: What is the purpose of this list? If you mention Saltcedar or Annual Grasses that could lead you into Woody Invasive Riparian. For example, Walleye, that catches your attention but there are different Aquatic Invasive Fish that are important also. Saltcedar gets your attention, gets you going through the list. Point being: How do you get on this list, why is the list here, and what is the purpose of it?

Bryce Christiaens: That is an excellent point going back to your original question. Promoting the work that they do and raising awareness around an individual species, what you're saying makes sense as far as having an ambassador within each of those groups that is more eye catching and then the statement below that incorporates something like all woody invasives or all annual grasses, but potentially rather than annual grasses its Ventenata.

Mindy Wilkinson: So, what I'm hearing is all except for annual grasses, try to pick one of the species that might be more well known but then pick a spoke species.

Wendy Velman: I was kind of going the opposite direction but now I understand what he is saying. I also think that we need to have good explanation, if we use a showcase species that it is a representation for a group of species. Like the annual grasses, right now were only dealing with two but who knows what we will be dealing with later. Were trying to figure out if there are similar ways to treat these and suggest management for them. I do agree that using a showcase species will be better when talking to the non-professional groups.

Bryce Christiaens: Agreed. Along those same lines, going back to the purpose, its not necessarily to provide the most up to date management recommendations but to raise awareness for visitors of Montana and the people of Montana. For the purpose of this conversation, its what is the species that's going to garner the most attention or that we want to bring the most attention to.

Tom Woolf: Agreed. Focusing on one species but also each category would have more within the statement since it is an educational document. My other question is, is Walleye be the appropriate one for that section and who would be prepared to explain that to a legislative committee?

Andy Welch: Obviously the grasshoppers are problematic and a nuisance, but they are a native species. Do they fit on the invasive species top?

Steve Wanderaas: As far as grasshoppers, the amount of damage they do is devastating. It makes me wonder if we have done enough about them in general and I think therefore they made the list.

Bryce Christiaens: I don't think we can discount the environmental impact of the grasshoppers, but I do think Andy is correct in the definition that we have for invasive species in Montana, grasshoppers being a native species don't fit. This could be something we look at later with native species and their impacts.

Jasmine: Are we going to keep this as 10? We could keep the ones at the bottom that get knocked out as "also species of concern" or something to that degree to keep them there but not on the top 10.

Bryce Christiaens: Agreed.

Mindy Wilkinson: As you move through the list I would like to identify one or more council members to call or email to help with the description under each of the section.

Top 10 Invasive Species to Watch

and why?

- Zebra Mussels **[Tom W.]**
  These species will have major impacts on the ecology of Montana's waters, damage infrastructure, and are a top regional priority.
- Ventenata **[Jasmine C., Jane M.]**
  These species will have major impacts on the ecology of Montana's rangelands and grasslands.
- Emerald Ash Borer **[Amy G., Leigh G.]**
  Firewood transport creates a pathway, and this species will impose heavy costs on urban areas.
- Feral Hogs **[Liz L., Tahnee S.]**
  This species will impact livestock producers through predation and as a disease reservoir.
- Eastern Heath Snail **[Gary A.]**

While this is a pest of agriculture, it highlights how programs targeting plant insect pests and diseases have made it difficult to make other species national priorities.

- Saltcedar **[Steve W., Jasmine C.]**
  The impacts of this species to water availability and access to Montana's rivers creates an ongoing impact.
- Flowering rush **[Tom W.]**
  The spread of aquatic invasive plants highlights the need to protect shoreline areas and improve detection programs across waterways.
- Northern pike **[Mike B., Tom W.]**
  The spread of gamefish is beneficial to a small group of advocates who promote this species but negatively impact biodiversity and other fisheries.
- Rush Skeleton weed **[Jasmine C., Jane M.]**
  Persistent flower stems are so tough they can hamper harvest machinery and the weed causes lost production in wheat fields.
- Bullfrog **[Tom W., Kristina S.]**
  While native to portions of North America they are not native in western Montana. Snapping turtles are also not native in western Montana but have been found and removed in waters west of the divide.

Quantifying the Impacts:

Quantify the Impacts of Invasive Species

Question: What invasive species issues would benefit from clearly quantifying the impacts?

- Analysis of the "Top 10 Invasive Species to Watch" list for the cumulative impacts to Montana's economy, natural resources, and public health.
  - Develop a 1-page review for each example species.
  - Use the literature review as an opportunity identify species and issues that would benefit from research on their biology, control, impacts, or pathways.
- Update the numbers for the zebra mussel summary completed in 2016 and develop a 1 page summary of the Eastern Heath Snail work.

Science Advisory Panel:

Science Advisory Panels.

Question: What topics would benefit from a Science Advisory Panel review?

- How should new invasive species be prioritized?

The future impacts of new invasive species are difficult to predict. For emerging issues, shifting management from current priorities to new targets requires quantifying their likely impacts. Increasing the capacity to quickly produce impact analyses for feral hogs, invasive praying mantises, fire regimes under new invasive annual grasses, and other emerging issues will improve response planning.

Other topics will be identified through a process of reviewing the priority invasive species list.

To do: Identify a Council member as lead.

Focused Efforts:

Focused Efforts to Improve Programs and Increase Capacity

Question: What invasive species issues or initiatives should the Council support with focused effort including trainings, jurisdictional review, workshops, tabletop exercises, or outreach?

Spring 2023

Woody Invasive Species: Meeting and planning

Co-host a joint meeting on woody invasive species. Highlight regional lessons learned about salt cedar control, Russian olive, and other woody invasive plants that are impacting riparian areas. Support coordinated efforts and messages.

Fall 2023

Education and Communication: Workshop

[Council sub-committee: Jan B., Cassidy B., CEMIST]

- Targeted communication
  - Audiences: targeted efforts for specific groups including landowners
  - Focus: use the tools we have in-state to improve contact with the right audience.
- Community-based social marketing
  - Messages that are positive give people a reason to get involved.
  - Develop modules for youth groups like scouts and 4-H
- Tools that change with the times
  - Social media's role in communication
  - Break the scientific language barrier
- Constant messaging
  - Promote consistent language
  - Share pre-packaged presentations across agencies

Spring 2024

Compliance: Workshop

- Why are the current laws not fully enforced?
- Is there an opportunity to modernize reporting?
- What is the best approach to achieve invasive species control goals?
- Work with county attorneys

Fall 2024

Climate change: Workshop or MISC Summit special focus

- Current invasive species will change their behavior and native species' distributions may change. How do we plan for control and revegetation in a changing environment?

Legislative Outlook	**Whole Council:** **Bryce Christiaens: This is an opportunity to touch base on priorities and see if there is any discussion around that.** Steve Wanderaas: There could be something related to woody invasives coming from the Saltcedar team. Liz Lodman: Removing the requirement to do an EA on grant submissions because it's redundant in many ways. Jasmine Chaffee: We are through the red tape initiative; we are doing away with our forge council and putting those responsibilities on our management council that we already have. Were putting a certified materials person on our trust fund voting council and probably two advisory members. Our AIS act was asking for it to be moved out of Department 80 (Dept. Ag) and moved to FWP or DNRC. The working group decided last Friday that they would like to take the cap off the noxious weed trust fund and put some of the state surplus funding into that to raise what we get off interest to give out to counties and projects which would help fund all those river projects. Tom Woolf: There is a bill to combine the Flathead Basin Commission and the Upper Columbia Conservation Commission. Bryce Christiaens: The only other two that I was aware of is, the exempting lifetime fishing licenses for blind folks from the AIS prevention pass. This popped up in the current list of bills. There is some work to increase support for Department of Ags pesticide waste disposal and pesticide containers. This may impact a lot of weed districts or mosquito districts.
Legislative Events	Important Dates / Events around the upcoming Legislative Session • January 24th, 2023: Montana Association of Conservation Districts meet and greet and rotunda day. • February 6th – 9th, 2023: MWCA is doing Capitol tours and is trying to get rotunda during the week of their annual meeting. • February 22nd, 2023: Rotunda Invasive Species Day • March 10th, 2023: Flathead Basin Commission is doing a water quality rotunda event.
2023 Council Meeting Planning	Rough Meeting Schedule for the upcoming year: • Helena: February/March – plan to do a hydro tour with Andy Welch at Hauser Dam. • Sidney: June • Fort Belknap/Havre: September – maybe do a weed tour while there. • Missoula: December, the new butterfly house at the fairgrounds.

Wrap-up Adjourn	Location for next meeting will be at Hauser Dam in Helena, MT on April 12, 2023

	Discussion/ Final Discussion: Steve Wanderaas: Just a follow up on the TTX that we did. How are we coming on our tasks that came out of that? Liz Lodman: We haven't made any progress on that. The latest feral swine thing was attending the Stockgrowers meeting. The other thing that has come up is we've had a county extension agent in Plentywood offer to help with feral swine public meetings. Steve Wanderaas: Maybe we can get together with Tahnee and start outreach along our northern counties. **Public Comment:** None Motion: Steve Wanderaas Second: Martin Charlo Discussion: None Public Comment: None Action on motion: Motion passed unanimously Meeting adjourned: 1:51 pm

Rank	Average Score	Applicant	Project Name	Request	MISC Recommend	Project Description	Notes	TYPE
1	98.3	Yaak Valley Forest Council	AIS Early Detection and Education	$ 18,097	$ 18,097	YVFC will continue to protect the Yaak and Kootenai River watersheds from AIS. Applicant will (1) conduct 2 rounds of invasive mussel monitoring at 16 priority lakes and sample sites, (2) sample for invasive aquatic plants, (3) conduct E/O in Lincoln County to include schools, local businesses, festivals, and newspaper ads.	Committee supports full funding. YVFC worked with other partners to determine monitoring and educational needs/gaps. Utilizes Big Sky Watershed Corps member resulting in hands-on training for incoming work force.	On-the-Ground
2	97.3	Sanders County	Invasive Milfoil Management	$ 40,000	$ 40,000	Sanders County will treat Eurasian watermilfoil at public access sites and high traffic areas in the Noxon and Cabinet Gorge reservoirs treating up to 65 acres. Applicants goal is to contain, control and reduce existing EWM and prevent new introductions.	Committee supports full funding of this on-going control project. Project is guided by Science Advisory Panel who uses adaptive management. FWP provides project monitoring. Avista provides >50% funding.	On-the-Ground
3	96.8	MT Conservation Corps	CSKT/FWP/MCC - A Collaborative Approach to Mitigating Non-Native Turtle and Frogs in the Flathead Valley	$ 49,722	$ 49,722	MCC will hire four AmeriCorps members to detect and remove snapping turtles and bullfrogs on priority areas in the Mission Valley/Flathead Reservation. MCC will utilize two BSWC members to lead education and outreach activities. Applicant will (1) trap and remove invasive frogs and turtles, (2) map areas impacted, and (3) conduct community outreach at 5 locations.	Committee support full funding. Continuation of project started in 2021. Partnership with CSKT and FWP. Address multiple AIS. Hands-on training for incoming workforce.	On-the-Ground
4	94.8	Gallatin Invasive Species Alliance	Clean.Drain.Dry in the Upper Gallatin	$ 14,263	$ 13,863	GISA will conduct AIS outreach in the upper Gallatin and Madison watershed to reach residents and an increaseing number of out of state visitors with the "Clean.Drain.Dry." message.	Applicant adjusted their proposed budget to $13,863. Committee supports funding. Previous applicant in good standing. Demonstrates coordination on previous project with FWP and local entities. High value for low cost.	E&O
5	92.8	Missoula County	AIS Education and Outreach Materials	$ 17,523	$ 17,523	Missoula County will (1) create 22 AIS fact sheets that can be shared on their website, and (2) create and print a foldable waterproof AIS field guide for distribution to inspection station, quatic recreation sites and partners.	Committee supports full funding. Missoula County will work with FWP to determine species featured on fact sheets and field guide.	E&O
6	91.5	Flathead Lake Biological Station	Standardization and repeatability of tow-net eDNA sampling for early detection of AIS: Comparison of qPCR vs metabarcoding for detecting Dressenids and multile other invasive taxa	$ 49,225	$ -	FLBS will (1) collaborate with other agencies to collect tow-net eDNA water samples in Montana and Minnesota to determine repeatability and sensitivity of collection method, (2) design qPCR assays and test for 6 AIS species, (3) test samples using metabarcoding for 6 AIS species, and (4) compare sensitivity between qPCR and metabarcoding for final report.	**Committee does not support funding at this time**. Several organizations are conducting this type of research. More information is needed about qPCR vs. metabarcoding for eDNA sampling. The applicant and other organizations will be invited to answer questions from MISC members about this research.	Research
7	84.8	Flathead Lake Biological Station	Holistic AIS Prevetion Approaches in a Hight Risk Water Basin	$ 34,907	$ 21,170	FLBS will conduct monitoring with an outreach compontent in the Flathead Lake and surrounding waterbodies. Applicant will (1) conduct and eDNA/ all taxa training event, (2) conduct a risk assessment of out-of-state activity at water access points, (3) use mussel sniffing dogs at outreach events, (4) collect 12 tow-net samples for microscopy and eDNA analysis, (5) conduct outreach events with CSKT, BSWC members and lake association volunteers, and (6) deploy substrates at 20 sites using lake association volunteers to monitor for mussels.	Committee supports partial funding to accomplish these activites: 1) conduct an eDNA/all taxa training event, 2) collect 12 tow-net samples for microscopy and eDNA analysis, and 3) deploy substrates at 20 sites using lake association volunteers to monitor for mussels.	On-the-Ground
8	84.3	Missoula County	Flowering Rush Bilogical Control	$ 20,000	$ 20,000	Missoula County will continue to coordinate with CABI to fund research for Flowering Rush biocontrol agents including (1) Bagous nodulosus weevils, (2) agromyzid fly, and (3) white smut. Flowering rush is an aquatic invasive plant infesting Flathead Lake, lower Flathead River and Clark Fork River.	Committee supports full funding. The weevil is approved for release in Canada and is expected to be approved in the US by early 2024. A 2022 AIS grant is funding prerelease monitoring at locations on Flathead to provide baseline data.	Research
9	82.5	Beaverhead Conservation District	AIS Night Inspections	$ 38,241	$ 37,299	Beaverhead CD will conduct boat inspection from 9 to midnight on weekends at their inspection station south of Dillon on I-15. This is a pilot project to determine extent of boat traffic occuring after their normal operating hours.	Committee supports partial funding this first time applicant. Applicant will slightly reduce days of operation during the grant period.	On-the-Ground

10	75.8	MT Natural Heritage Program	AIS Data Centralization and Exchange to Support Education Outreach, Early Detection, Prevention, and Planning and Permitting Processes	$ 18,830	$ 18,830	MTNHP provides a centralized location for observations and surveys of AIS species. Information is used by federal, state, and local agencies; tribes; and private citizens when creating management plans, completing MEPA and NEPA, and evaluating environmental permit applications. Information is exchanged with regional/national databases (FWP Mapper, EDDMaps, USGS). They also provide range maps, invasion risk models, and update Field Guide information.	Committee supports full funding. This is Montana's primary respository of invasive species data. MTNHP has no other fundng sources to accomplish this work. MDA provides a grant to fund terrestrial invasive weeds.	E&O
11		Clearwater Resource Council	AIS Monitoring in the Clearwater Valley	$ 15,818	$ 14,218	CRC will monitor for AIS on 6 waterbodies in the Clearwater Valley including 5 rounds of invasive mussels water samples on 5 lakes and 2 rounds on one lake. Applicant partners with FWP and Missoula County Weed District to coordinate monitoring efforts.	Committee supports partial funding. Long standing monitoring project of high use waterbodies in heavily used tourist area. Good cooperation between applicant and FWP.	On-the-Ground
12	62.3	Invasive Species Action Network	Idenifying Montana Pet Rehoming Needs and Abilities	$ 5,390	$ -	ISAN would conduct a suvey of pet ownership in Montana; query rehoming capacity of pet stores, animal shelters and veterinarians; and create a summary report that would be used to determine the feasability of a pilot rehoming event.	**Committee does not support funding at this time.** Applicant will be encouraged to reapply with more details about the survey methods and outcomes of this proposal.	E&O
				$ 322,016	$ 250,722			

MONTANA INVASIVE SPECIES COUNCIL

2023-2026 Work Plan

The governor's office established the Montana Invasive Species Council (MISC) in 2015. The Council is a diverse group of scientists and resource managers charged with developing **"a science-based, comprehensive program to identify, prevent, eliminate, reduce, and mitigate the impacts of invasive species in Montana."**

The Montana Invasive Species Council has addressed urgent management needs by drawing together agencies and partners from across jurisdictions. Responses to high priority species including zebra mussels and feral swine have been supported by the Council.

Looking ahead, the invasive species concerns of Montana's stakeholders were used to create the 2023-26 Work Plan to focus the efforts of staff and the Council on the issues and species causing impact now.

SCIENCE ADVISORY PANELS

These panels "inform Montana's efforts based on the current status, trends, and emerging technology as they relate to invasive species management in Montana." Past panels included recommendations for using eDNA to detect invasive mussels, biological control of houndstongue, the spread of eastern heath snail into pulse and wheat production counties, and actions to reduce the risk of firewood as a vector for the spread of invasive forest pests.

NEXT SCIENCE ADVISORY PANEL

To develop a process to assess the potential invasiveness of a species by effectively quantifying its impact to Montana's economy and environment.

BUILDING CAPACITY AND IDENTIFYING NEW THREATS

OVER THE NEXT TWO YEARS MISC WILL:

- Work with vested stakeholders to develop long-term, on-the-ground solutions to salt cedar, Russian olive and other woody invasive species impacting riparian areas in Central and Eastern Montana.
- Provide land management professionals with the tools necessary to effectively communicate the importance of invasive species management to new and diverse audiences.
- Continue its work to improve compliance with existing statewide regulations.
- Engage regional experts in a workshop addressing the impact of a changing climate on the spread of invasive species.

IMPACTS OF INVASIVE SPECIES

MISC has collaborated with researchers and economists to determine the economic impact of invasive species in Montana. Past studies include invasive mussel impacts and the increased costs to grain and pulse producers in the Golden Triangle if eastern heath snails become widespread.

NEXT IMPACT STUDY

The "10 Invasive Species to Watch" list developed at the 2022 Montana Invasive Species Summit will be used to identify cumulative impacts and management gaps.

MISC

Work Plan for 2023-2026

Montana Invasive Species Council - MISC

Work Plan Purpose: To have a substantial, multi-party discussion with stakeholders to shape the 2023-2026 Council work plan. The plan will focus the efforts of staff and the Council to implement the Montana Invasive Species Framework.

The Montana Invasive Species Framework was developed in 2016 to lay out the areas where the Council's efforts would have the greatest impact. The Framework was reprinted in 2019 and the objectives remain relevant. Only minor updates to this document were identified during the 2022 review process and prioritized actions consistent with the framework are included in this work plan. The process of identifying priority tasks to include in the Council work plan created an opportunity to reach out to a broader audience of stakeholders for feedback. This document supports the issues stakeholders feel Council should focus on in the short term.

During the June 1, 2022 MISC meeting, Council members were asked to identify constituent groups that they represented or identified as partners. Between June and August, over 110 individuals were contacted via phone, email, and personal visits and asked to participate in the Council's listening sessions in addition to public announcements. A survey form was developed and 8 individuals responded with detailed written comments, 2 of whom also joined the live discussions held on August 25 & 26, 2022 in Helena. In total, 55 individuals participated in one or more listening session over the two days and were from federal, state, and county agencies, tribes, industry, and non-profit groups.

The feedback and suggestions for the Council and MISC staff were discussed and top priorities were selected by attendees at the 2022 Montana Invasive Species Summit held on October 25 & 26, 2022 in Helena, MT. A "1-2-4-All" inclusive decision making method was used. First, all attendees were asked to review the suggestions and or consider important questions for the Council. With guidance from a facilitator, they then discussed their priorities with one other person at their table, coming to an agreement on the themes that were most important to them. This process was repeated with groups of 4 then by the entire table of 8 attendees. The tables reported out their top suggestions or priorities to the room. These priorities were presented to the Council on December 13, 2022, who voted to include the top ranked priorities in their 2023-2026 work plan.

1. 10 Invasive Species to Watch

This list was built from species suggested by stakeholders in August 2022, narrowed to the top 14 suggestions at the October 2022 Invasive Species Summit through a guided discussion, and approved as a list of 10 at the December 2022 MISC meeting.

Bullfrog – *Widespread Consequences*
While native to the Central and Eastern US, bullfrogs are an invasive species in Montana. Bullfrogs are voracious predators of our native wildlife. They can carry the chytrid fungus that affects frogs and amphibians and contribute to the dwindling population of native frogs. A bullfrog removal projects is underway in western Montana.

Eastern Heath Snail – *Accelerating Impacts*
A small land-dwelling snail that feeds on a wide range of crops and will climb vegetation and fenceposts to escape high ground temperatures. It can contaminate hay and crops, clog harvest and processing equipment, and transmit plant and animal diseases. While most agricultural and plant-pests are insects or pathogens/diseases, this mollusk pest highlights the need for additional taxa to be considered for national plant pest priorities. This snail is found in Cascade and Judith Basin counties.

Emerald ash borer - *Preventable*
This beetle threatens ash trees in Montana's urban communities, shelterbelts, and woody draws. The larvae feed on tissue underneath the bark, killing the tree. Emerald ash borer is one of many tree-killing beetles that can travel long distances in firewood. Preventing the transport of firewood from out of state into Montana can slow the spread of this and other tree pests. Emerald ash borer has infested 35 eastern states but was recently discovered in Oregon.

Feral Swine – *Preventable*
This species will impact agriculture producers through damage to crops, predation on livestock, and as a vector to spread diseases. Their destructive behaviors affect wildlife, habitat, and water resources. Feral swine are rampant in southern US states with no chance of eradication and Canadian populations continue to expand unchecked. Stopping the intentional movement of feral swine and responding to sightings are measures that keep this species out of Montana.

Flowering rush – *Widespread Consequences*
Invasive aquatic plants degrade aquatic habitats, impede water-based recreation and obstruct irrigation canals. Flowering rush has infested Flathead Lake and downstream to the Clark Fork River. Preventing the spread of invasive aquatic plants through cleaning watercraft and preventing aquarium and ornamental pond releases is an important part of protecting Montana's waters.

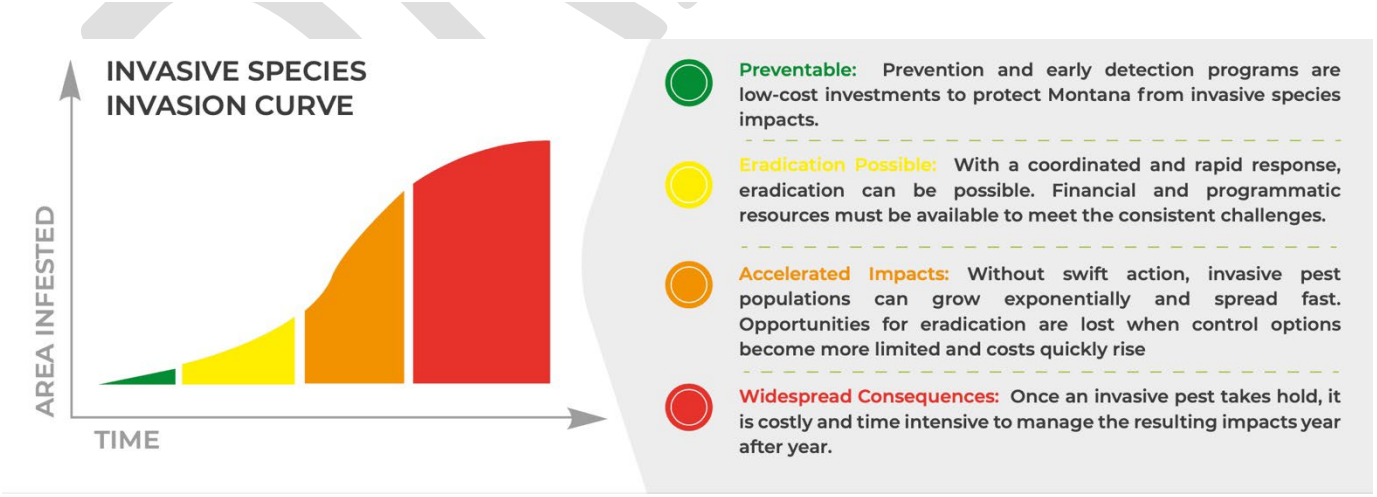
Rush Skeletonweed – *Accelerating Impacts*
A deep-rooted perennial noxious weed that is very drought resistant and can easily spread from rangeland to cropland. Impacts in rangeland include loss of forage and biodiversity. In croplands like cereal grains and potatoes, rush skeletonweed can reduce production, quality, and hamper harvest machinery with sticky latex sap. Rush skeletonweed is very difficult to identify in the field and management can be laborious. It is found mostly in western Montana.

Saltcedar – *Widespread Consequences*
This tall woody shrub establishes in riparian areas and replaces large stands of native cottonwood and willows, reduces wildlife access, increases soil salinity, and has the potential to take up significant amounts of water through a deep tap root. Saltcedar is a drought tolerant species that spreads easily by wildlife and water. When it develops dense stands, it can alter stream channels and floodplains. Saltcedar is found along the Missouri and Yellowstone rivers and tributaries.

Smallmouth Bass – *Accelerating Impacts*
The illegal introduction of a non-native fish species can adversely impact the ecology of a waterbody including predation of native fishes, increased competition for resources and space, introduction of disease, and hybridization. Stopping 'bucket biologists' from releasing fish will save important natural resources and limited agency resources. Smallmouth bass were captured in the Gardner River a tributary of the Yellowstone River and have been illegally introduced in other Montana waters.

Ventenata – *Widespread Consequences*
A noxious winter annual grass which can impact Montana's native landscapes and degrade rangelands, pastures, and crops by decreasing agricultural production and increasing risk of soil erosion. Ventenata has little to no forage value and its diminutive stature makes it difficult to identify. Ventenata is found in west and southwest Montana.

Zebra Mussels – *Preventable*
Invasive mussels can have major impacts on Montana's waters. They disrupt the food chain and impact recreational boating and fishing. Mussels can cause significant damage to infrastructure by clogging pipes used for hydropower, irrigation, and water treatment plants. Zebra mussels are established in the Dakotas and other eastern states. Preventing the spread of invasive mussels by cleaning watercraft and equipment is a top regional priority.



The species that was recommended at the 2022 Summit for freshwater fish was changed from Northern Pike to Smallmouth Bass after discussions with the Council at their December 2022 meeting.

- **Walleye**
  The spread of gamefish is beneficial to a small group of advocates who promote this species but negatively impact biodiversity and other fisheries.

The species that required additional information or discussion and were not included by the Council were:

- **Grasshoppers**
  The species that are responsible for the outbreaks across Montana are native and so are excluded from the official definition of invasive species. The 2020-2022 outbreaks may represent a shift in their abundance and behavior exacerbated by a changing climate.

- **White-nose syndrome**
  This wildlife disease can be spread through visitors to local caves that bring in contaminated soil from areas with outbreaks.

- **Non-native praying mantises**
  These generalist predators would never be considered in a modern bio-control program but are commonly sold as natural pest control.

- **Cats**
  Sometimes the biggest impacts from urbanization have been with us for a long time. The ability of cats to negatively impact songbirds and small reptiles is well known, their spread out from urban areas in Montana is less clear.

- **Starlings**
  Invasive birds have impacts that are concentrated with certain producers but the birds themselves are widespread.

2. Quantify the Impacts of Invasive Species

Since 2016, the Council has contracted researchers to determine the economic impact of invasive species in Montana. The first was in collaboration with the Flathead Lake partners on the impact of zebra or quagga mussel invasion in the region. Results from this work were used to develop a policy brief and focus prevention efforts. The second study was completed with the University of Montana Bureau of Business and Economic Research on the economic impact of Eastern Heath Snails. This effort was suggested by the Eastern Heath Snail Science Advisory Panel. This panel identified that the lack of familiarity with this class of pests in North America limited engagement in management.

During the August 2022 Council listening sessions, stakeholders were asked which invasive species could have a financial impact but required more economic research. At the October 2022 Summit, the question about economic impact was broadened to include other impacts to ecosystems, visitor experience, traditional practices or land use, and cultural harm from invasive species. Examples given by panelists at this session on the impacts of invasive species included:

Flowering rush *Butomus umbellatus* creates a closed water habitat so that trout avoid the near shore areas colonized by this plant but invasive fish like northern pike increased. Algae take advantage of the extra surface area provided by the stems and the increase feeds snails that in turn transmit swimmer's itch.

Preserving Montana's natural beauty and heritage during a time of dramatically expanding development and residents is a challenge. A view of what is possible is provided by the Crail Gardens maintained by the Gallatin Invasive Species Alliance. This relatively small native plant demonstration garden has influenced the landscaping on many more acres in the surrounding area by showing off the beauty of Montana's wildflowers and what is possible with invasive species management.

Angling for trout is worth about $750 million per year or about 20% of all tourism spending in Montana and the number of angler days per year has doubled over the last few years. Conservation management actions are local and when building support for these actions people are more likely to listen to their neighbors than state agency staff.

The power of travel is clear: Montana hosts 12.3 million visitors per year who bring in $5.1 billion dollars to the state and pay $388 million in state and local taxes. The draw for these visitors are the National Parks, open space, lakes and rivers, and winter sports. They take part in scenic drives, day hiking, fishing, birding, wildlife watching, and rafting.

The examples given at the October 2022 Summit led the Council to request a comprehensive review of the list of "10 to Watch" across all classes of impacts:

- *Analysis of the "10 Invasive Species to Watch" list for the cumulative impacts to recreation and biodiversity.*

Invasive species impact topics for future consideration:

- Annual grasses and hogs have impacts beyond their costs to control. What are the changes to fire regimes, property values, and threats to human safety from their spread?

- What are the impacts of aquatic invasive species on recreation? These should be considered as a group and include: threats to fisheries like proliferative kidney disease (PKD), salt cedar, Emerald Ash Borer on riparian corridors, and a new look at how zebra mussels might impact tourism.

- Wildlife diseases like white-nose syndrome and chronic wasting disease have broad impacts to populations of keystone species. Is the capacity to prevent and detect these harmful outbreaks in scope for the potential impacts they cause?

- What is the scope of the impact from rush skeleton weed on Montana agriculture?

- Feral hogs will have complex impacts on Montana. The reduction in populations of ground nesting birds, leaf litter dependent animals like salamanders, and physical disturbance of wetlands are relatively well known based on their behavior elsewhere in North America. What are the impacts to hunting opportunities, cultural adaptation, and management from the spread of feral hogs?

- Emerald ash borer (EAB) will substantially change the size structure and abundance of native ash in eastern Montana woody draws. This will have a cascade of ecological impacts but the spread of EAB will also cause loss of a substantial portion of the urban tree canopy. What are the social impacts of this invasion including indirect impacts like intensifying the heat island effect of urban areas with fewer mature trees, increased energy use to compensate for shading, and water availability?

- The future impacts of new invasive species are difficult to predict. For emerging issues, shifting management from current priorities to new targets requires quantifying their likely impacts. Increasing the capacity to quickly produce impact analyses for feral hogs, invasive praying mantises, fire regimes under new invasive annual grasses, and other emerging issues will improve response planning.

3. Science Advisory Panels

Organizing Scientific Advisory Panels is one of the duties assigned to the Montana Invasive Species Council. The panels, "inform Montana's efforts based on the current status, trends, and emerging technology as they relate to invasive species management in Montana." Panels are organized by a subcommittee of the Council, composed of subject experts most relevant to the topic, meet at a public workshop, and share their results via a report.

Previous Panels:
April 2018 The use of eDNA for Dreissenid Mussel Early Detection
Purpose: To evaluate the use of environmental DNA (eDNA) for dreissenid mussel early detection and provide input and guidance to managers regarding its use.
Many partners are involved in sampling for invasive mussels. The panel defined the need for shared language and clear communication protocols to reduce barriers for using eDNA as a detection method in multiple jurisdictions. The panel recognized the need to create a decision tree for eDNA results along with monitoring results from other methods and the likelihood of invasion, and water body suitability to guide future responses.

April 2019 Scoping the potential for approval of *Mogulones crucifer* for classical biological control of houndstongue in the U.S.
Introducing classical biological control for any weed requires meeting USDA APHIS and USFWS ecological criteria to determine the safety to native and crop plants. The panel identified the research needed prior to releasing *M. crucifer* as a biological control in the U.S. The panel provided input and guidance to managers if the organism is encountered in the field and recommended the development of a petition to release this insect.

December 2020
Topic: Investigation of known information about the eastern heath snail (Mollusca: Geomitridae, *Xerolenta obvia* (Menke) and identification of gaps in information.
The eastern heath snail is known to be established in only two other locations in North America and the limited distribution of this species has both limited a national response and left many open questions about the potential distribution of this species and its impacts. By including experts in the literature related to the snail's native range and the experience of managers tasked with mitigating its impacts in its introduced range the panel recommended that the USDA redevelop and modify the 2012 Environmental Review for *Xerolenta obvia* based on the larger area now occupied, including different treatments recommended for landowners, roadsides and different cropping systems, and the impact of integrated pest management (IPM) measures that include increased till and burning to reduce populations in hay fields.

May 2022 Firewood Science Advisory Panel: A review of firewood management and communicating risk with partners and the public.
The panel identified opportunities for managing out-of-state transport of firewood into Montana as a pathway for invasive tree pest. Partners from forest industries, tourism, research, and management recommended expanding markets for locally produced firewood, developing positive messages focused on protecting Montana's resources, and sharing that message across partners and with visitors.

Science Advisory Panel Process

"When the panel ends, the work begins."
Amy Gannon, Chair for the May 2022 Firewood SAP.

Spring

Start: MISC Council confirms the topic at a council meeting.
- The topic is refined and focused in discussion.
- A lead Council member is identified.
  - The lead identifies a planning team.
    - The planning team identifies the potential participants or areas of expertise that would benefit the discussion.

Summer

S*cope*:
-Discussions with the potential panel participants are used to develop specific questions to focus the discussion.
  - The Council approves the scope and confirms the goal for the SAP. This can include an application for an action like releasing a biological control organism, a best practices document, or other management focused outcome.
    - The questions are developed into a request for written responses from the panelists and sent out.

Logistics:
- Participating panelists are identified and commit to attending. Fall, winter, and early spring panels avoid the field season from April through September.
  - Panelists and the discussion team suggest moderators and the moderator is engaged as part of the planning team.
    - The location is decided and the venue is booked. If there is a substantial international component to the meeting Zoom worked well to reduce travel costs and allow accommodations for shorter meetings over a week-long period to spread out the discussion.
      - An after-hours or informal venue is suggested (this was a popular part of the Firewood SAP).

Fall

Process:
- The panelist's written answers to the questions are compiled anonymously into a background document. The planning team reviews and approves a draft to be sent out to the panel. The team picks a set of questions to focus the live discussion.
  - The agenda is built around the discussion questions.
    - Public meeting notices and invitations are sent.
      - Final logistics: panelist's lodging, catering, meeting supplies.

Outcome:
- Panel meeting: notes and summary drafted and added to the compiled panelist written responses as the basis of the final report.
  - Report drafting, follow up questions with the panelists and planning team.
    - Draft report is presented to MISC for approval.

End: MISC approves the recommendations and distributes them to partners.

Council suggestions for 2023-2036 topics:

Next science advisory panel question: What is the most effective process to assess the potential invasiveness of a species by effectively quantifying its impact to Montana's economy and environment?

Priority questions:

- Invasive annual grass impacts,
  What are the benefits of control, landowner buy-in, impacts to recreation, and preventing secondary invasions?

- Climate Change
  Will the risk for known invasive species change and will native species shift their behavior?

Future topics for further consideration:

- Best practices from integrated weed management through revegetation?
- Noxious weed pathways: identifying the vectors and improving prevention.
- Feral hogs: What is the plan?
- Feral cat impacts from urban areas to rural populations.
- Data sharing and standards.
- Impacts of aquatic invasive plant control with herbicides on aquatic plant communities.
- Effective techniques for vehicle decontamination from terrestrial weeds and pests.
- eDNA technology has evolved, beyond mussels, how can it be used?
- Best practices for roadside vegetation management.
- Balance best practices for weed control with providing pollinator habitat and not attracting herbivores to the road.
- Frontiers in control: What has changed that can improve management?
- Praying mantis biology.

4. Focused Efforts to Improve Programs and Increase Capacity

Four areas were selected by the Council at the December 2022 meeting to receive focused attention. All those working in invasive species recognize that new outbreaks, new technology, and changing resources will create a constantly shifting landscape for managers. The following areas are current priorities and others may be identified by the Council as time goes on.

- *Issue:* Support woody invasive species management and research coordination.
  Practice: Council staff and members, as available and appropriate, to join and compliment the Montana taskforce for woody invasive riparian weeds.

- *Issue:* Education and communication training is a need across many partner programs.
    - Targeted communication about invasive species.
        - Audiences: targeted efforts for specific groups including landowners
        - Focus: use the tools we have in-state to improve audience contact.
    - Community-based social marketing
        - Positive messages give people a reason to get involved.
        - Develop modules for youth groups like scouts and 4-H
    - Tools that change with the times
        - Social media's role in communication
        - Break the scientific language barrier
    - Consistent messaging
        - Promote recognizable, shared language
        - Make pre-packaged presentations available

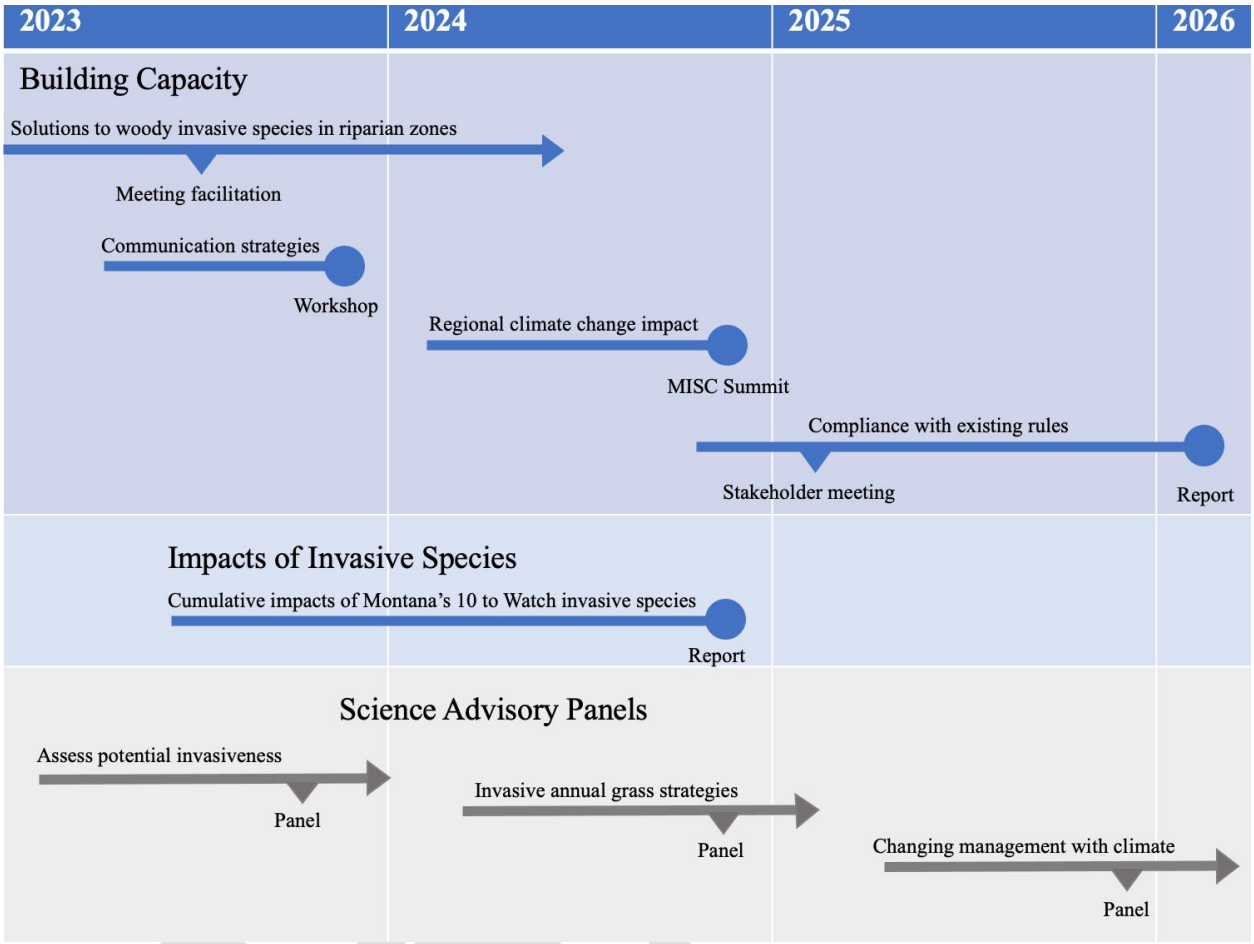
  Practice: The Council will host a workshop with the goal of providing technology transfer to outreach professionals, coordinate invasive species messages across Montana, and guide attendees through the development of an audience specific communication plan.

- *Issue:* Climate change.
  Current invasive species will change their behavior and native species' distributions may change. How do we plan for control and revegetation in a changing environment?
  Practice: The next MISC Summit in 2024 will include speakers, panel sessions, and opportunities for stakeholders to discuss current work on how invasive species management can anticipate and respond effectively to projected changes in average temperatures, earlier spring thaws, and precipitation changes. This will be followed by a Science Advisory Panel tasked with developing a set of recommendations for adapting invasive species management.

- *Issue*: Compliance with current regulations varies by county.
    - Why are the current laws not fully enforced?
    - Is there an opportunity to modernize reporting?
    - What is the best approach to achieve invasive species control goals?
    - Work with county attorneys to develop a meeting or training that meets their needs.

  Practice: A stakeholder meeting will be followed by a working group composed of professionals who will develop recommendations in a report delivered to the Council.

2023-2026 MISC Work Plan Calendar



MONTANA'S INVASIVE SPECIES TO WATCH

Invasive species are plants, animals and diseases that are non-native to Montana and cause harm to our natural, cultural and economic resources. This list is not ranked in any order and does not encompass all the invasive species of concern to Montana.

BULLFROG

Widespread Consequences

While native to the Central and Eastern US, bullfrogs are an invasive species in Montana. Bullfrogs are voracious predators of our native wildlife. They can carry the chytrid fungus that affects frogs and amphibians and contribute to the dwindling population of native frogs. A bullfrog removal project is underway in western Montana.

EASTERN HEATH SNAIL

Accelerating Impacts

A small land-dwelling snail that feeds on a wide range of crops and will climb vegetation and fenceposts to escape high ground temperatures. It can contaminate hay and crops, clog harvest and processing equipment, and transmit plant and animal diseases. While most agricultural and plant-pests are insects or pathogens/diseases, this mollusk pest highlights the need for additional taxa to be considered for national plant pest priorities. This snail is found in Cascade and Judith Basin counties.

Bugwood photo*

EMERALD ASH BORER*

Preventable

This beetle threatens ash trees in Montana's urban communities, shelterbelts, and woody draws. The larvae feed on tissue underneath the bark, killing the tree. Emerald ash borer is one of many tree-killing beetles that can travel long distances in firewood. Preventing the transport of firewood from out of state into Montana can slow the spread of this and other tree pests. Emerald ash borer has infested 35 eastern states but was recently discovered in Oregon.

FERAL SWINE

Preventable

This species will impact agriculture producers through damage to crops, predation on livestock, and as a vector to spread diseases. Their destructive behaviors affect wildlife, habitat, and water resources. Feral swine are rampant in southern US states with no chance of eradication and Canadian populations continue to expand unchecked. Stopping the intentional movement of feral swine and responding to sightings are measures that keep this species out of Montana.

FLOWERING RUSH

Accelerating Impacts

Invasive aquatic plants degrade aquatic habitats, impede water-based recreation and obstruct irrigation canals. Flowering rush has infested Flathead Lake and downstream to the Clark Fork River. Preventing the spread of invasive aquatic plants through cleaning watercraft and preventing aquarium and ornamental pond releases is an important part of protecting Montana's waters.

RUSH SKELETONWEED

Accelerating Impacts

A deep-rooted perennial noxious weed that is very drought resistant and can easily spread from rangeland to cropland. Impacts in rangeland include loss of forage and biodiversity. In croplands like cereal grains and potatoes, rush skeletonweed can reduce production, quality, and hamper harvest machinery with sticky latex sap. Rush skeletonweed is very difficult to identify in the field and management can be laborious. It is found mostly in western Montana.

SALTCEDAR

Accelerating Impacts

This tall woody shrub establishes in riparian areas and replaces large stands of native cottonwood and willows, reduces wildlife access, increases soil salinity, and has the potential to take up significant amounts of water through a deep tap root. Saltcedar is a drought tolerant species that spreads easily by wildlife and water. When it develops dense stands, it can alter stream channels and floodplains. Saltcedar is found along the Missouri and Yellowstone rivers and tributaries.

ZEBRA MUSSELS

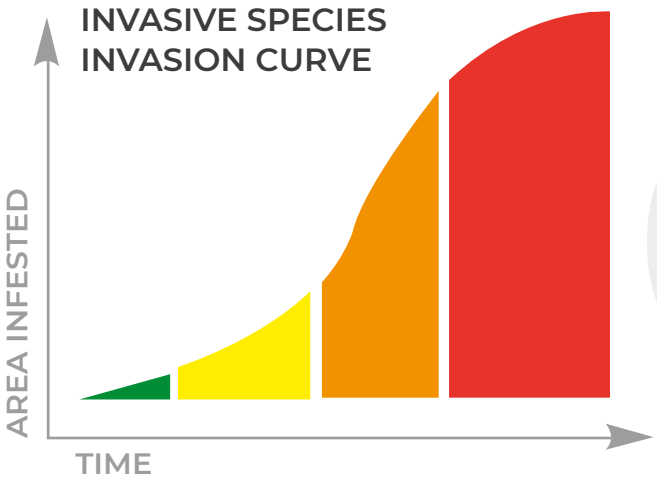
Preventable

Invasive mussels can have major impacts on Montana's waters. They disrupt the food chain and impact recreational boating and fishing. Mussels can cause significant damage to infrastructure by clogging pipes used for hydropower, irrigation, and water treatment plants. Zebra mussels are established in the Dakotas and other eastern states. Preventing the spread of invasive mussels by cleaning watercraft and equipment is a top regional priority.

VENTENATA

Accelerating Impacts

A noxious winter annual grass which can impact Montana's native landscapes and degrade rangelands, pastures, and crops by decreasing agricultural production and increasing the risk of soil erosion. Ventenata has little to no forage value and its diminutive stature makes it difficult to identify. Ventenata is found from northwestern through southcentral and southeastern Montana.



Preventable: Prevention and early detection programs are low-cost investments to protect Montana from invasive species impacts.

Eradication Possible: With a coordinated and rapid response, eradication can be possible. Financial and programmatic resources must be available to meet the consistent challenges.

Accelerated Impacts: Without swift action, invasive pest populations can grow exponentially and spread fast. Opportunities for eradication are lost when control options become more limited and costs quickly rise

Widespread Consequences: Once an invasive pest takes hold, it is costly and time intensive to manage the resulting impacts year after year.

MISC

Feral Swine

[Identification/origin story]
While feral pigs may look similar to domestic pigs, they are much more destructive. Over time, some domestic pigs have escaped or were released intentionally, creating free-ranging feral swine populations. Wild boar has been introduced to create hunting opportunities or have escaped confinement and interbreed with other varieties of pig. Prolific breeders, they can produce four to eight babies per litter. Feral swine are highly adaptable but prefer habitats with an abundant supply of water and dense cover. They are aggressive and pose serious ecological, economic, and health threats.[1]

[Level of infestation in Montana]
Feral swine are not established in Montana. The Montana Department of Livestock (DOL) has been working in partnership with Montana Fish Wildlife and Parks (FWP) and the United States Department of Agriculture Wildlife Services (USDA-WS) to respond to reports of feral swine in Montana.

[Impact – economic (agricultural, recreational) environment/biodiversity]
Because of the invasive and destructive nature of feral swine and the potential for feral swine to carry and spread disease to domestic pigs, other livestock, wildlife, and people, Department of Livestock worked with FWP, USDA-WS, and industry to pass laws prohibiting their presence in Montana. The laws were written recognizing the hunting constituency that rapidly builds after feral swine are established and the difficulty in eradicating populations once established.

[Jurisdictional authority and management network]
Since the prohibition on keeping feral swine was passed by the 2015 Montana Legislature, DOL receives 1-2 reports of possible sightings of feral swine in Montana. These reports include feral swine imported from Texas for hunting purposes, sightings by hunters along river bottoms, and reports from landowners along Montana's highline. A report of feral swine population in north central Montana in January 2018 resulted in 13 ½ flight hours looking for evidence of feral swine in the area. Fortunately, nothing was found.

[Caption]Species like the Russian or European boar were brought to the United States as domestic pigs from Europe and Asia and are considered the traditional species of feral pigs. Both species, as well as hybrids thereof are prohibited species under Administrative Rule of Montana (ARM).

[1] https://animalrangeextension.montana.edu/wildlife/prevention_and_control/squeal-on-pigs.html

Feral swine are aggressive animals that can be extremely destructive to fields, fences, and facilities. Their wallows can affect ponds and wetlands, muddying the water and destroying aquatic vegetation. They can strip a field of crops in one night and post a threat to ground nesting birds and some endangered species. Feral swine also can transmit disease and parasites, such as pseudorabies, brucellosis, and tuberculosis, to livestock and people.

Domestic swine species can also revert to a feral state in just a few generations. Because of this, Montana's laws pertaining defining feral swine do not include a phenotypic or genotypic definition. Instead feral swine in Montana includes any hog, boar, or pig that appears to be untamed, undomesticated, or in a wild state or appears to be contained for commercial hunting or trapping.

[Pathways use Oregon's symbols]
Domestic swine escape from confinement
Intentional transport and release of feral swine or wild boar
Movement of feral swine established in neighboring regions

[Highlighted regional impact]
"They are adapted to very cold temperatures, and can breed in any season, living in pigloos burrowed into the snow. Sexually mature within four-to-eight months, they feed on all common types of farmers' crops, including corn, wheat and canola. They also eat insects, birds, reptiles and small mammals.

"The growing wild pig population is not an ecological disaster waiting to happen—it is already happening," said USask's Ryan Brook, lead researcher for the Canadian Wild Pig Project, a Canada-wide research program."[2]

[Associated species]
The illegal movement of game animals threatens the health of Montana's wild species and livestock.

[What should I do if I see one?]
Report it to the Squeal on Pigs hotline at 406-444-2976. The eradication of feral swine in Montana is restricted to the following groups:

- Employees of the Department of Livestock
- Other state or federal employees designated by the DOL

A private landowner or lessee that encounters feral swine on their land or land under their control when: the animals pose an immediate danger to persons or property, or the animals will expand their range without immediate eradication. In this instance, the individual is responsible for notifying DOL within 24 hours.

[2] https://agbio.usask.ca/news/2019/05/wild-pigs-invade-canadian-provincesan-emerging-crisis-for-agriculture-and-the-environment.php

MISC Members

Last Name	First Name	Board Position	Term Start	Term End
Chaffee	Jasmine	Department of Agriculture Director or Designee	3/13/2020	**5/1/2023**
Christiaens	Bryce	County Weed Districts Representative	8/1/2017	**5/1/2023**
Cloninger	Bob	Department of Transportation Director or Designee	9/13/2019	**5/1/2023**
Cobell	Gerald	Blackfeet Nation Representative	10/16/2020	**5/1/2023**
Gannon	Amy	Department of Natural Resources and Conservation Director or Designee	8/1/2017	**5/1/2023**
Greenwood	Leigh	Conservation Organization Representative	8/1/2017	**5/1/2023**
Mangold	Jane	Montana State University (MSU) Extension Representative	8/1/2017	**5/1/2023**
Tyrrel	Steve	Agriculture Representative	8/1/2017	**5/1/2023**
Wanderaas	Steve	Conservation Districts Representative	8/1/2017	**5/1/2023**
Longknife	Dennis	Fort Belknap Indian Community Representative	5/1/2021	4/30/2025
Bias	Michael	Fishing Organization Representative	6/15/2021	5/31/2025
Charlo	Martin	Confederated Salish and Kootenai Tribes (CSKT) Representative	6/15/2021	5/31/2025
Gilbert	Bob	Private Landowners Representative	5/1/2021	5/31/2025
Gopher	Brandon	Rocky Boy Representative	6/15/2021	5/31/2025
Headdress	Charles	Fort Peck Representative	6/15/2021	5/31/2025
Rossignol	Paul	Wildlife Organization Representative	6/15/2021	5/31/2025
Stoddard	Jan	Department of Commerce Director or Designee	6/15/2021	5/31/2025
Welch	Andy	Hydropower Utility Industry Representative	6/15/2021	5/31/2025
Woolf	Tom	Department of Fish, Wildlife and Parks Director or Designee	6/15/2021	5/31/2025
		Current Openings		
		Crow Nation Tribal Government		
		Little Shell Tribal Government		
		Northern Cheyenne Tribal Government		