# Invasive Species Manager Guide to Using Information Resources at the Montana Natural Heritage Program

Reach out to Bryce Maxell for questions or suggestions at bmaxell@mt.gov (406) 444-3989

## Tools for Reporting Observations of Invasive Species

- Reporting invasive species with iNaturalist: https://mtnhp.mt.gov/submit/Report_Invasives
  - Videos on how to set up an iNaturalist account, collect observations of species, edit observations, make identifications, and subscribe to taxa places: https://www.youtube.com/playlist?list=PLRaydtZpHu2quc9abvi-6iLvwBNUs3tm9
  - Powerpoint presentation on why and how to use iNaturalist: https://mtnhp.mt.gov/submit/docs/How_To_Use_iNaturalist_20251117.pdf
  - iNaturalist business cards: https://mtnhp.mt.gov/submit/docs/iNaturalist_Business_Cards.pdf
- Heritage Observation Collector and Rapid Weed Reporter Survey123 (not for general public): https://mtnhp.mt.gov/docs/MTNHP_Survey123_Tutorial.pdf
- You can also submit your local geodatabase, Excel, or hard copy files to bmaxell@mt.gov The MTNHP centralizes data reported to EDDMaps, Schutter Diagnostics Lab, and agency databases.

## Surveillance, Early Detection, and Rapid Response Tools

- **Emailed Audit Reports of Invasive Species** in your area of interest from the Montana Natural Heritage Program. Reports can be custom designed, but standard reports include: (1) quarterly reports of new non-native species records in jurisdictions of interest; (2) nightly reports of new non-native species records that are greater than 2.5 kilometers from existing records of the same species. Spatial and tabular data can then be reviewed in the Single Species Overview or Point Observations tasks in the Map Viewer web application. Reach out to Bryce Maxell to sign up for a standard or customized email audit report at bmaxell@mt.gov (406) 444-3989.
- **Subscribe to iNaturalist Places for species of interest** in your area of interest to get daily emails of species reported in iNaturalist…see last video on this iNaturalist how-to-use video playlist: https://www.youtube.com/playlist?list=PLRaydtZpHu2quc9abvi-6iLvwBNUs3tm9
- **iNaturalist Non-Native Watch List** Summarizes records of exotic species reported in the iNaturalist application that are not yet documented in Montana but are within an 800-kilometer radius from the center of Montana by counts, distances to the state border, and county and distance. https://experience.arcgis.com/experience/d7f225aa8e1447ee83c6e38731e827ff/
- **AIS Response Support Tool** Provides spatial information on boat access points, docks, ramps, hydrological features, land management, and species of concern occurrences to assist with AIS response efforts. https://www.arcgis.com/apps/mapviewer/index.html?webmap=ff80ec731dae4540a983752d71f7e4df&extent=-117.3863,43.1111,-102.5767,50.1647

## Planning and Response Tools (including Environmental Summary Reports for NWTF grant applications)

**Map Viewer**

https://mtnhp.org/mapviewer/

What is it?

For biologists and resource managers with agency-level access, Map Viewer can be used to generate Environmental Summary Reports for areas of interest across Montana that can be used for Noxious Weed Trust Fund applications and serve as documents of record in environmental review, permitting, and planning processes. Agency-level access provides precise location and detailed tabular information for species and structured surveys. All tasks include the ability to turn on and off a variety of map layers, search for locations, and zoom to areas of particular interest. Tasks available for users with agency-level access include:

- *Environmental Summary*: Generate Environmental Summary Reports for areas of interest across Montana that can serve as documents of record in environmental review, permitting, and planning processes. Reports include sections with summaries of native species, structured surveys, land cover, wetland and riparian mapping, land management, biological reports, and invasive and pest species. Explore details of reports using other Map Viewer tasks or download a report.
- *Single Species Overview*: Can be used to display detailed spatial and tabular data for point observations, structured surveys, Species of Concern occurrences, predicted habitat suitability models, and range polygons for a single species at the same time. Filter by species and zoom to areas of interest.
- *Species of Concern Occurrences*: Displays detailed spatial and tabular data for Species of Concern occurrence polygons (used to represent local breeding populations) for one or more Species of Concern to ensure that these populations are considered in environmental review, permitting, and planning processes. Filter by one or more species or conservation status category, zoom to areas of interest, and download a summary report or Excel file.
- *Structured Surveys*: Displays detailed spatial and tabular data for locations where a standardized survey protocol has been followed to detect a species or species group. Filter by one or more survey protocol, survey program name, and month and/or year of survey, zoom to areas of interest, and download a summary Excel file.
- See additional Map Viewer tasks available to anyone under the Education and Outreach section below.

How to Use the Application and Each Task:

- Introductory video to the entire web application https://www.youtube.com/watch?v=PKlAUH41gDo
- Playlist of introductory videos for all tasks, as well as videos on how to use map controls and tools, map layers, and the search for location tool https://www.youtube.com/playlist?list=PLRaydtZpHu2rAl8P7VJUIoV4zoTu7eQFG
- Interpreting and Using Environmental Summary Reports https://www.youtube.com/watch?v=fbzUCGxrPD0&list=PLRaydtZpHu2rAl8P7VJUIoV4zoTu7eQFG&index=3
- Introductory videos and step by step how-to-use documents can be accessed for each task by clicking on the question marks in the blue circles at the upper right of each task selection button or the Help link at the upper left of any task. Additional information such as story maps is also provided when available.

**Education and Outreach Tools** (all are available to the general public)

**MONTANA FIELD GUIDE™**

https://fieldguide.mt.gov/

What is it?

Contains accounts on the status, distribution, general identification, biology, ecology, and management of over 18,000 different species and habitats found in Montana. There are separate guides that are organized by taxonomic hierarchy (or management status for invasive and pest species) for animals, plants, fungi, invasive and pest species, and ecological communities.

Different ways to use it:

- Click through the taxonomic, habitat, or management hierarchy until you get to a full species or habitat account.
- Download PDF guides with abbreviated accounts for major taxonomic or management groups under the “Take us with you!” links at the right.
- At any level of the taxonomic or management hierarchy for species click on the “View Images” or “PDF Click Me” symbols at the upper right to view images or abbreviated accounts for the list of species in the group.

- Type the species' or habitat's common or scientific name in the search box at the upper right and click Go to get to a full species or habitat account.
- Use the Advanced Search at the upper right to search by taxonomy, status, or location to filter to a list of species or habitats then click on those of interest to see the full accounts.
- Create a custom portable PDF of abbreviated field accounts at the bottom of the Advanced Search by typing the scientific names of a list of species of interest.
- Use the "By Location" decimal degrees option on the Advanced Search to enter latitude and longitude coordinates and a buffer distance to exclude species or limit the number of species being considered for identification (e.g., only *Carex* species in southeast Montana).

**Species Snapshot**
https://mtnhp.org/SpeciesSnapshot/

What is it?
This application is an extension of the MONTANA FIELD GUIDE™. It can be used to generate lists of species known to occur in various spatial areas across the state that belong to different taxonomic or status/management groups. Lists of species can be explored online using various links and you can download abbreviated accounts or an excel spreadsheet of the list of species filtered.

How to Use it:
Using filters at the upper left, filter by spatial area (Statewide is default), species group (All Species is default), and various agency status listings (All Status is default) and then click the Submit button. In the resulting list of species, view summaries of agency status, numbers of observations, numbers of Species of Concern Occurrences and links to predicted habitat suitability model write ups, accounts, and Generalized Observations and predicted habitat suitability model output (if available) in the Map Viewer web application. At the upper right of this application there are links to Download Custom Guide with abbreviated accounts or Export to Excel for the list of species filtered.

**Map Viewer** (Species, Habitat, Land Management, Predicted Biodiversity, Report and Document Information)
https://mtnhp.org/mapviewer/

What is it?
Map Viewer displays spatial information on species, terrestrial, wetland, and riparian habitats, land management, and reports and documents in Montana as well as summary reports of this information for a variety of jurisdictional boundaries. All tasks include the ability to turn on and off a variety of map layers, search for locations, and zoom to areas of particular interest. Tasks available for use by anyone include:

- *Generalized Observations*: Shows documented records of species by rectangles that are a quarter degree of latitude by a quarter degree of longitude as well as the predicted habitat suitability and range for species when available. Filter by one or more species and month and year.
- *Habitat Suitability for Biodiversity*: Maps show overall predicted habitat suitability for various biodiversity groups. Numbers and lists of species predicted for a variety of jurisdictional boundaries are displayed along with stewardship responsibility for individual species.
- *Land Cover:* Maps portrait natural habitats classified at the Group level of the National Vegetation Classification system, recently disturbed or modified habitats (e.g., fire, insect outbreak, timber harvest), and areas dominated by human land use. Select a geographic area to summarize acreage of various land cover classes and download a report. Links to the Ecological Communities Guide are provided for descriptions of the land cover classes.
- *Wetland and Riparian Mapping:* Maps portrait wetlands mapped according to the Cowardin classification system of the National Wetland Inventory and riparian areas according to the U.S. Fish and Wildlife

Service's System for mapping riparian areas. Select a geographic area to summarize acreage of various wetland and riparian mapping types and download a report.

- *Land Management:* View ownership/management info for public lands, tribal lands conservation easements, administrative boundaries and cadastral info for private property boundaries. Select a geographic area to summarize acreage of various ownership/management classes and download a report.
- *Reports and Documents:* View biological reports and Montana Environmental Policy Act (MEPA) documents associated with an area of interest. Select a geographic area of interest to see reports and documents for the area and filter MEPA documents by agency, project type, document type, year received, and subject. Links are provided to look for National Environmental Policy Act (NEPA) documents on federal agency websites.
- *Photos:* See photos of habitats from species and habitat surveys with an emphasis on wetland surveys.
- See additional Map Viewer tasks available only to biologists and natural resource managers with agency-level access in the Planning and Response section above.

How to Use the Application and Each Task:

- Introductory video to the entire web application https://www.youtube.com/watch?v=PKlAUH41gDo
- Playlist of introductory videos for all tasks, as well as videos on how to use map controls and tools, map layers, and the search for location tool https://www.youtube.com/playlist?list=PLRaydtZpHu2qqYRhFT0mXvN5ehPOmNrVo
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**Invasive Weed Dashboard**

View summary information on non-native vascular plants statewide or within county, USFS, BLM, or tribal jurisdictional boundaries.
https://experience.arcgis.com/experience/defdd132464e436998daf47671b97e3a/?dlg=Window

**Montana Invasives to Watch Storymap**

Storymap on invasive species of greatest concern for Montana.
https://storymaps.arcgis.com/stories/4ed920774aba411f8a11ff6b4fc30584

**Other Montana Natural Heritage Program Web Pages of Potential Interest**

- Requests for Environmental Summary Reports or Geodatabases that can be used to inform environmental review, permitting, and planning processes across Montana https://mtnhp.mt.gov/requests/
- Download predicted habitat suitability models for individual native and non-native species https://mtnhp.mt.gov/resources/Models/Species/
- Wetland and Riparian Information https://mtnhp.mt.gov/resources/ecology/wetlands/
- Land Cover / Land Use Information https://msl.mt.gov/geoinfo/msdi/land_use_land_cover/
- Zoological Resources https://mtnhp.mt.gov/resources/zoology/
- Botanical Resources https://mtnhp.mt.gov/resources/botany/
- Wildlife Bibliographies for Recreational Effects and Subdivision Development https://mtnhp.mt.gov/resources/zoology/wildlifebib/
- Native Plant Conservation Strategy https://mtnhp.mt.gov/resources/botany/native-plant-conservation-strategy/
- Related Websites for Natural Resources https://mtnhp.mt.gov/resources/links/
- Laws, executive orders, rules, regulations, and processes that use information from the Montana Natural Heritage Program https://mtnhp.mt.gov/about/information-uses/