

# Overview of Why & How to Use iNaturalist

Bryce Maxell

March 18, 2026



- Why Use and Contribute Data with iNaturalist
- How Data is Used by Natural Resource Managers
- How To Use iNaturalist – Basics
- How to Use iNaturalist - Advanced

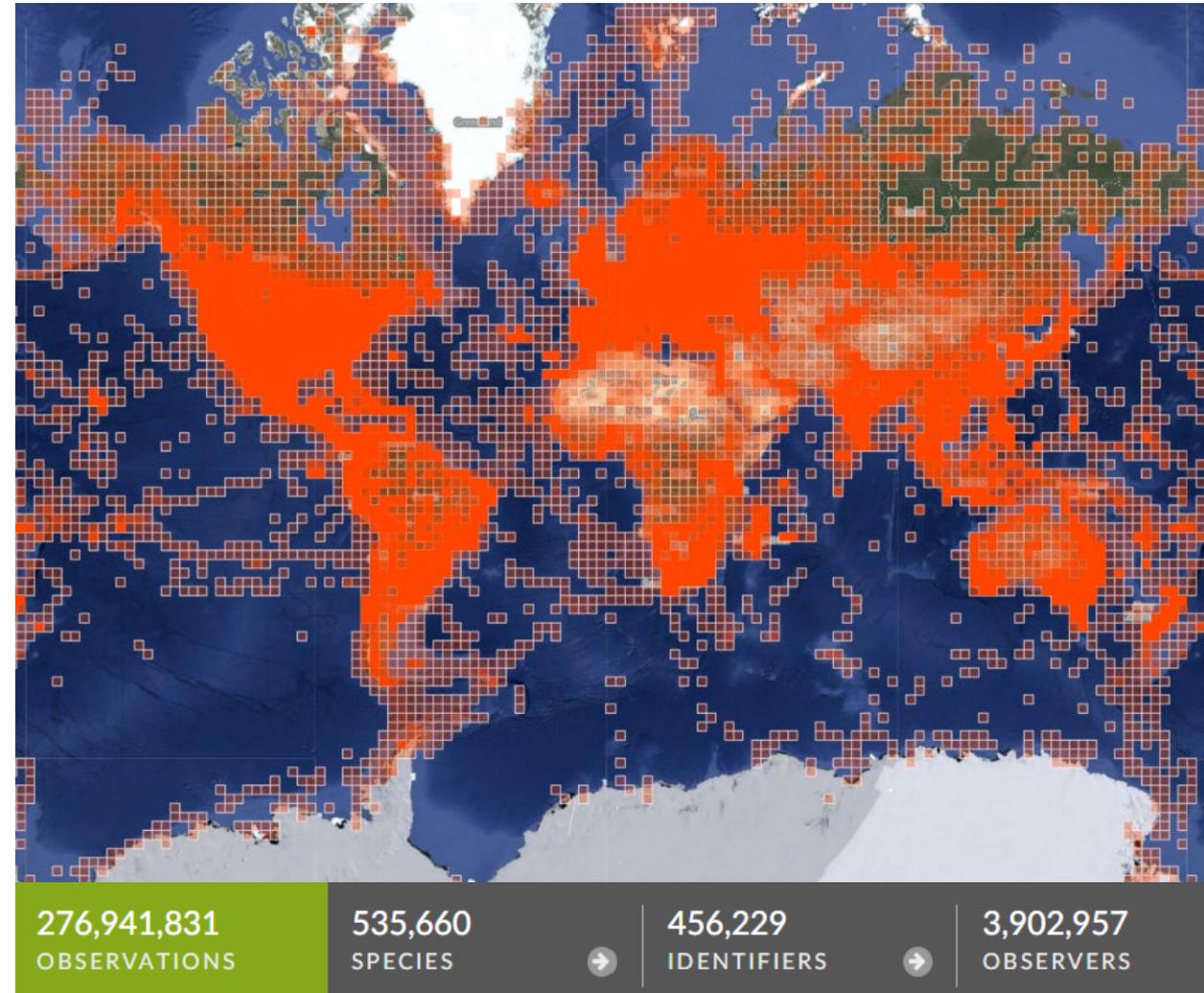
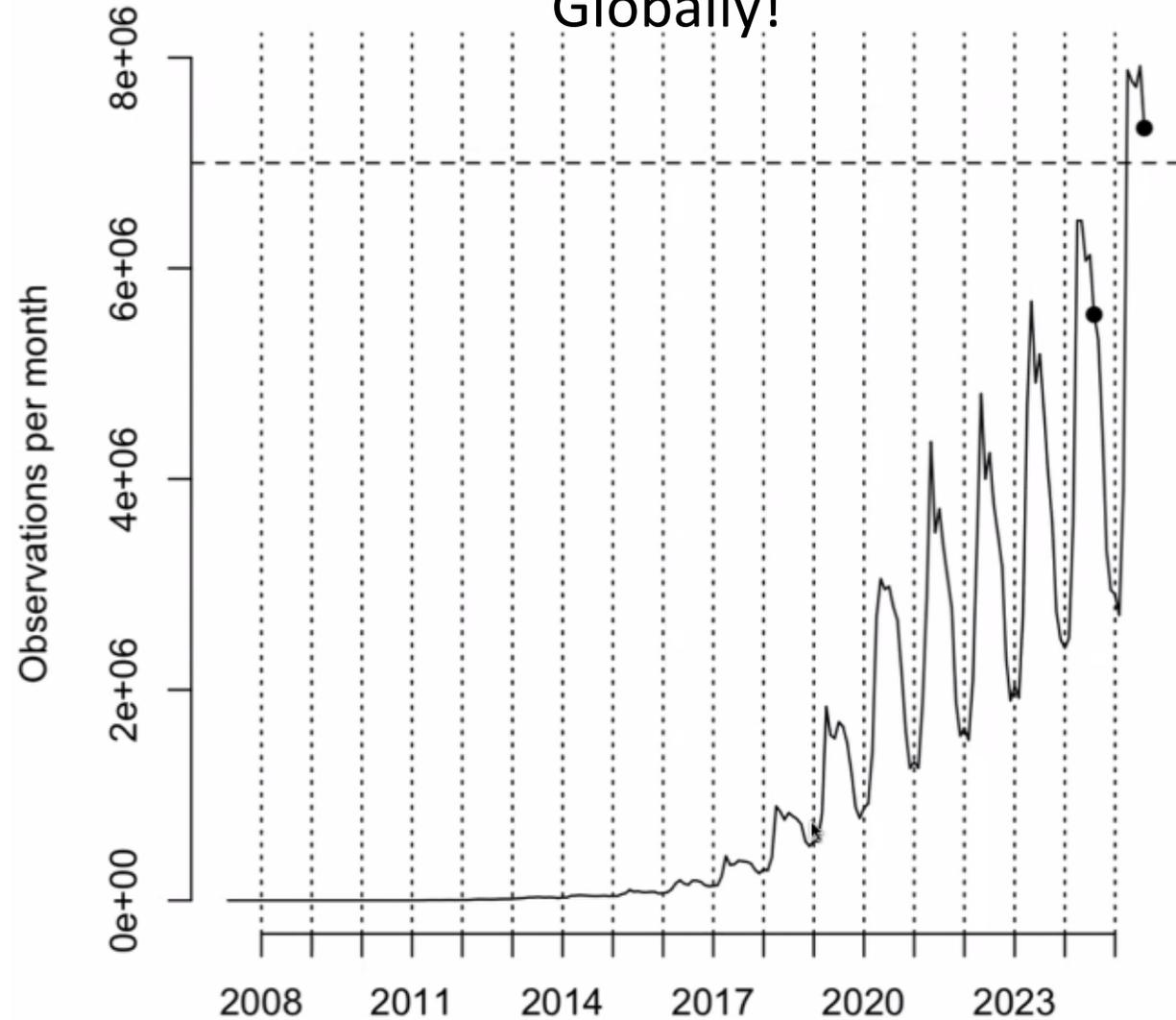


How-To  
iNaturalist Resources



# Why Use and Contribute Data with iNaturalist?

Globally!

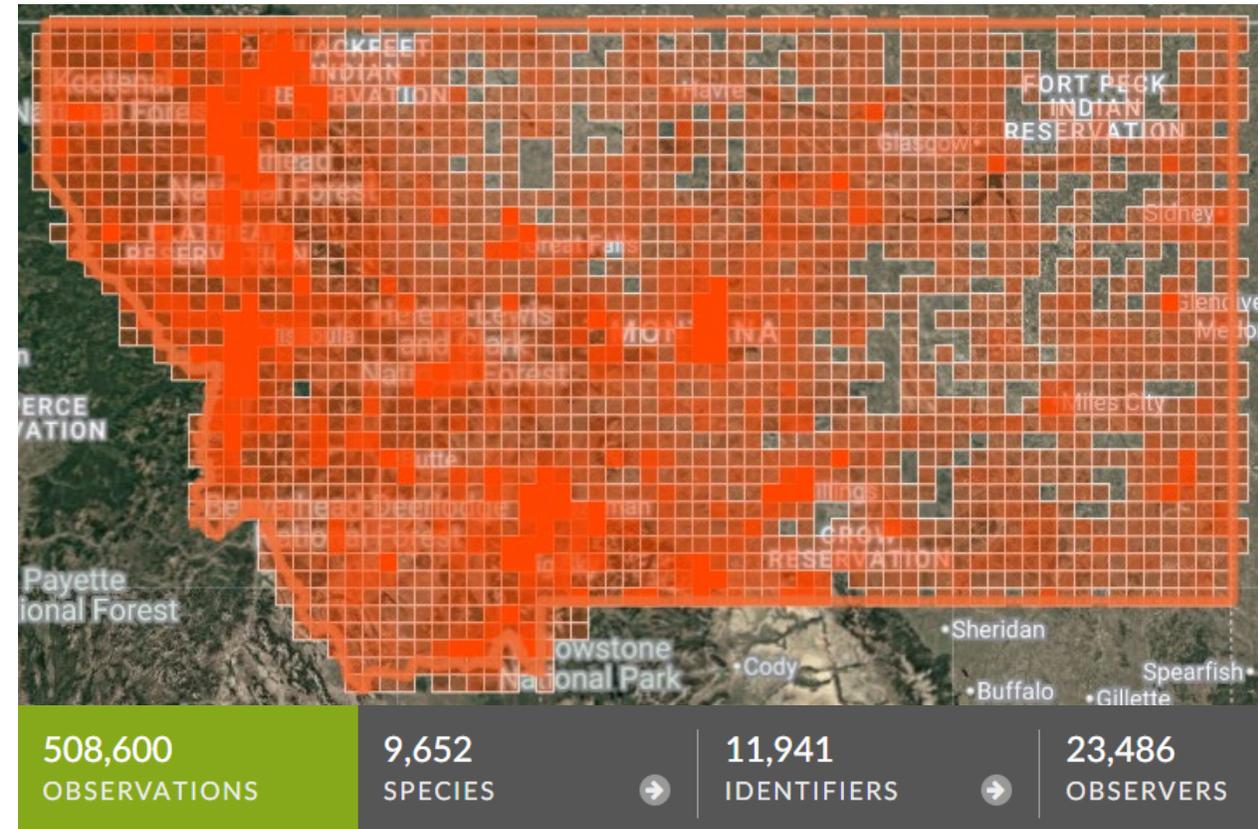


## Lots of Data Informs Conservation Decisions!

# Why Use and Contribute Data with iNaturalist?

State/Province	No. Obs	No. Sp.	No. Identifier	No. Observer
Alaska	676,766	10,061	13,037	19,919
Alberta	1,377,160	11,788	17,852	30,150
Arizona	2,546,934	18,036	23,716	67,412
British Columbia	5,644,802	22,998	32,888	70,900
California	20,415,906	38,258	76,188	360,862
Colorado	2,303,271	16,541	24,681	79,762
Idaho	635,249	10,518	13,637	24,175
Montana	508,600	9,652	11,941	23,486
Nevada	651,981	9,718	12,846	25,437
New Mexico	1,242,805	14,917	16,832	34,164
Northwest Territories	156,472	4,961	5,756	3,494
Oregon	2,760,658	18,816	28,362	74,168
Saskatchewan	317,269	7,441	8,917	9,100
Texas	13,546,282	30,367	57,663	207,766
Utah	1,096,433	12,483	17,718	45,059
Washington	3,365,453	19,570	32,434	93,839
Wyoming	424,364	7,862	11,446	24,143
Yukon Territory	189,520	4,892	5,295	2,818

In Montana and the West!

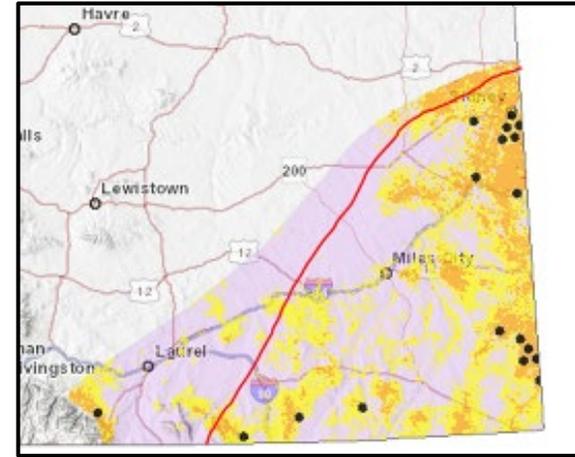


Lots of observers and identifiers!

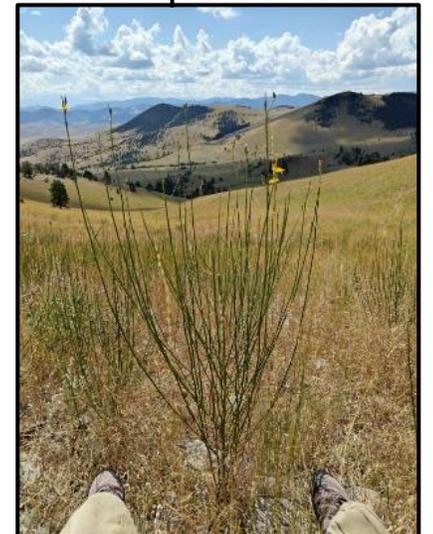
# Why Use and Contribute Data with iNaturalist?

- Well developed application - easy to collect photos or sound files
- Well developed algorithms to identify species from photos
- Global community of observers
  - New species, Rarely Reported Species, Document Invasive Species
- Global community of identifiers → ensure high data quality
  - Used by taxonomic experts and dedicated individuals
- Well developed workflows allow natural resource managers to use data
- Great tool for learning about species where you live and where you play
- Subscribe to species of interest to get alerts of reports in areas of interest
- Connect with other people interested in the same species
- iNat data has been used in >6,000 science publications (1,000+ in 2024)
- Contribute to conservation outcomes!

Meadow Jumping Mouse  
Range Extension!

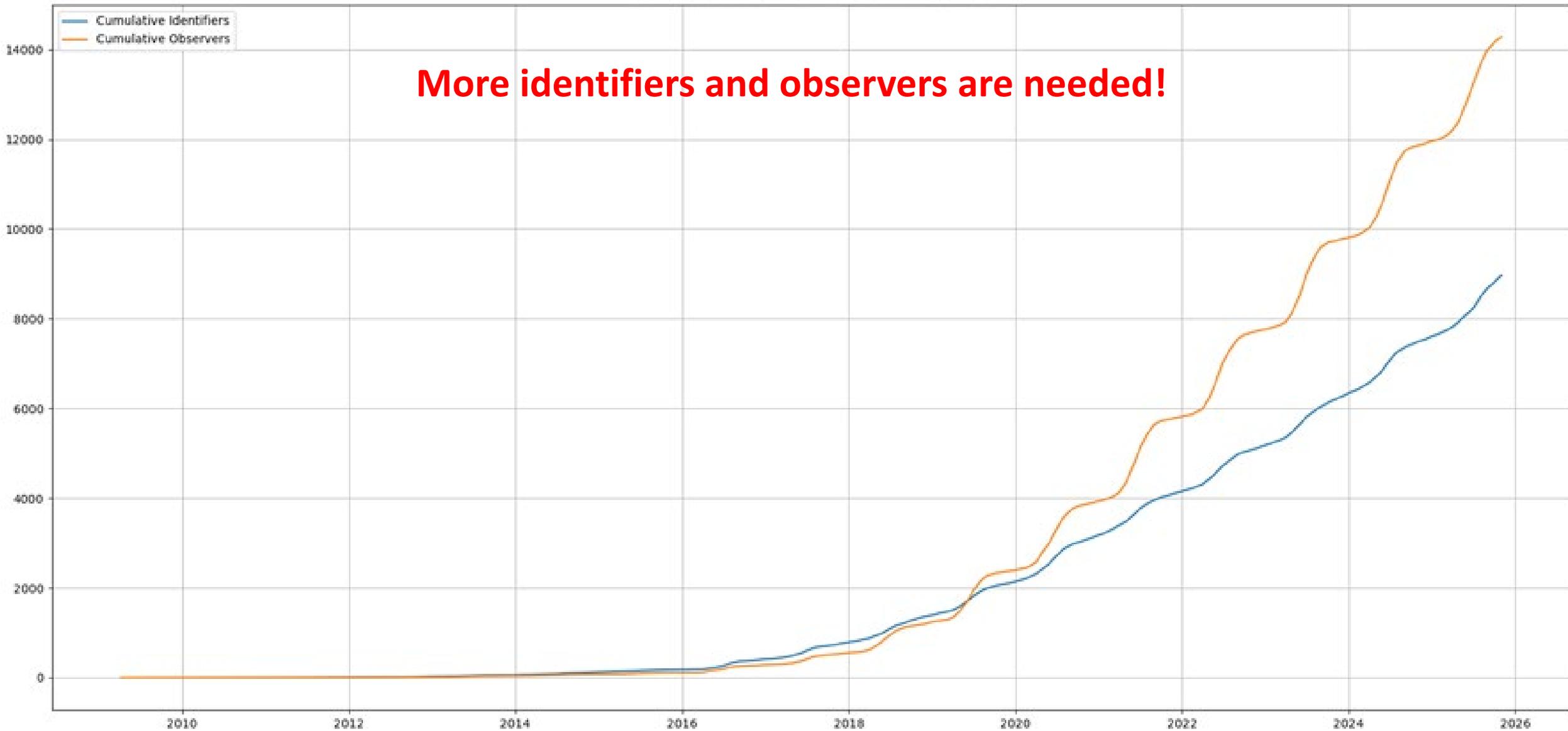


Rush Skeletonweed  
Invasive Species Control!

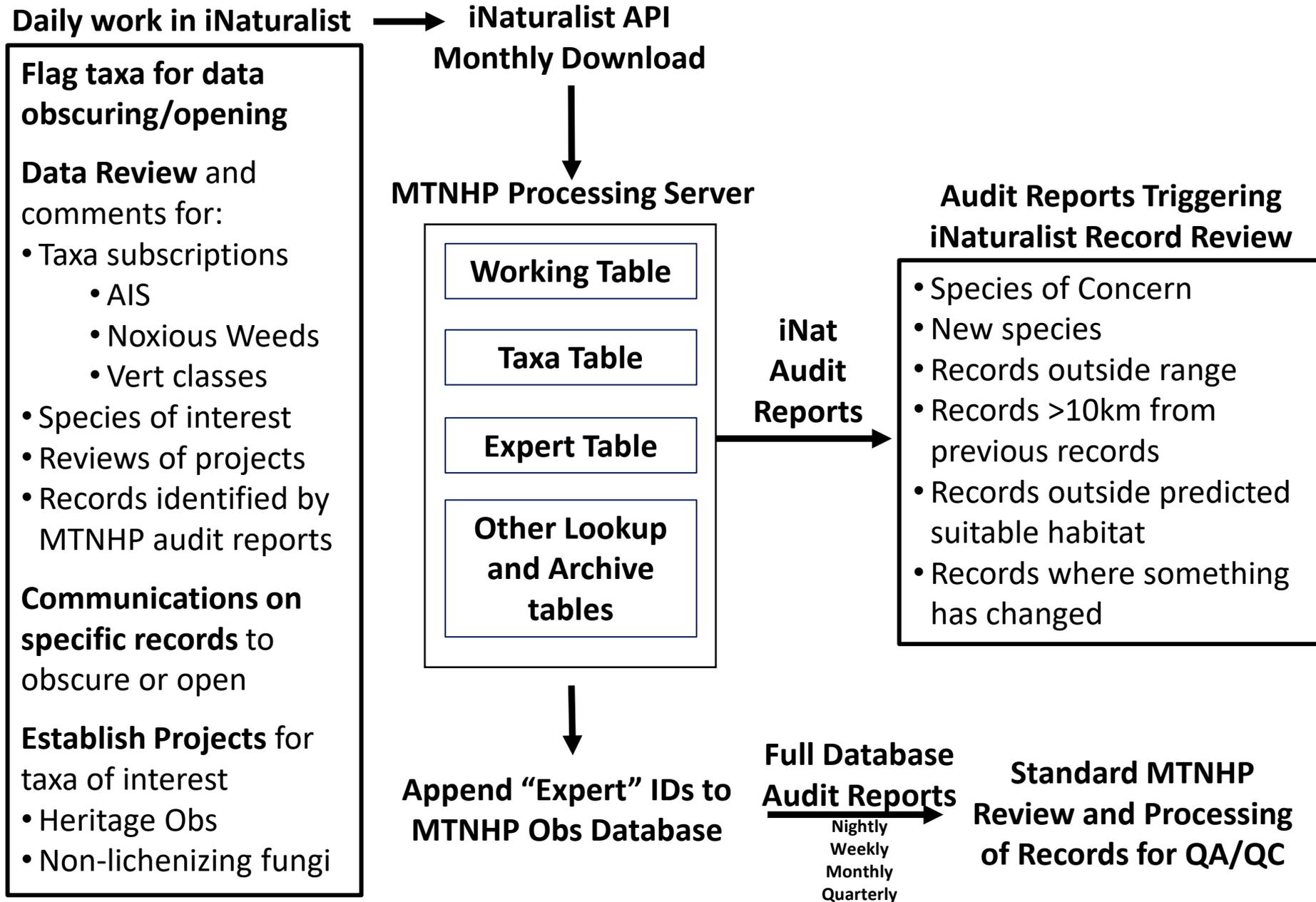


# Growth in iNaturalist Observers and Identifiers for Montana Records

(December 1, 2025)



# Montana Natural Heritage Program Workflow for iNaturalist Data in Montana



Integrating the power of



### Scheduled Run (File referenced for running monthly)

iNat\_Data\_Acquisition.bat  
Type: Windows Batch File

### Reference Material (Includes date of last download)

initDetectData.json  
Type: JSON File  
lastdownload.json  
Type: JSON File

main.py  
Type: Python File

### Error Tracking

log.txt

Error occurred → New Email

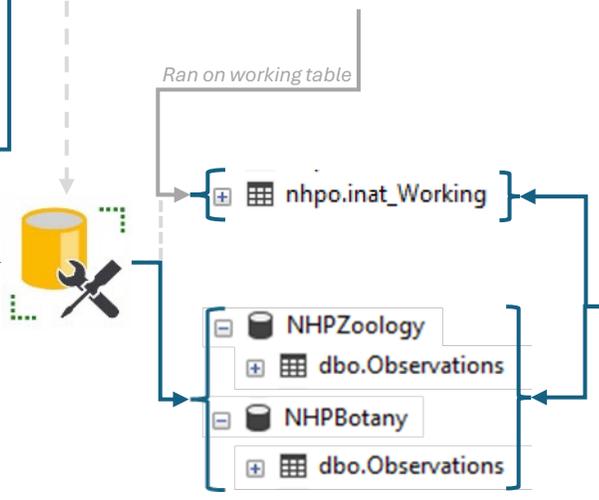
Successful append → New Email

## Primary Workflow

- 1 Data\_Download.py  
Type: Python File
  - 2 Data\_toWorking.py  
Type: Python File
  - 3 Data\_speciesChk.py  
Type: Python File
  - 4 Data\_preAudit.py  
Type: Python File
  - 5 Data\_toPRD.py  
Type: Python File
  - 6 Data\_currentPRD.py  
Type: Python File
- Main script made up of 6 subscripts*

## Pre-Append Checks (details follow)

- 1 ExpertdReviewedRecords.sql  
Type: Microsoft SQL Server Query File
  - 2 3ConcurringIdentifications.sql  
Type: Microsoft SQL Server Query File
  - 3 Range\_Intersection\_Check.sql  
Type: Microsoft SQL Server Query File
  - 4 PRD\_Intersection\_Check.sql  
Type: Microsoft SQL Server Query File
  - 5 Duplicate\_Submission\_Check.sql  
Type: Microsoft SQL Server Query File
  - 6 Valid\_Import\_Check.sql  
Type: Microsoft SQL Server Query File
- Initial audits are ran before final append*



## Post Append Audit Reports

- Audit - Animal Observations with no Model Support.sql
  - Audit - Introduced Species Monthly Report.sql
  - Audit - Isolated Invertebrate Animal Record Check.sql
  - Audit - Isolated Nonvascular Plant Record Check.sql
  - Audit - Isolated Vascular Plant Record Check.sql
  - Audit - Isolated Vertebrate Animal Record Check.sql
  - Audit - New Species Records.sql
  - Audit - New Species.sql
  - Audit - Obscuring Changes.sql
  - Audit - PRD Observation Updates.sql
  - Audit - Range Intersection check for Animals.sql
  - Audit - Range Intersection check for Plants.sql
  - Audit - Species of Concern.sql
- Final audits are ran after append*

## Tables Referenced

- NHPSpecies
  - dbo.Species
  - dbo.Species\_Alt\_Com\_Name
  - dbo.Species\_Alt\_Sci\_Name
- NHPZoology
  - dbo.Observations
- NHPBotany
  - dbo.Observations
- inat.Identifications
- inat.LUT\_Experts
- inat.LUT\_Places
- inat.LUT\_Taxa
- inat.PRD\_DataEntered
- nhpo.inat\_Working

# 750+ Taxonomic Experts for the U.S. and Canada

<https://forms.office.com/g/QXF787VWwQ>

Access List and Submit Updates!

Name	iNaturalist_username	iNaturalist_name	iNaturalist_id	Taxonomic Expertise	Expertise LU
Alexandre Ancil	a_ancil		1381960	Vertebrates Birds	A%
Andrea Benville	a_b	Andrea Benville	35013		
Alison Smith	a_smith	Alison Smith	1340454		
Aaron Liston	aaronliston	Aaron Liston	266181	Vascular Plants, particul	P%
Aaron Marcus	aaronmarcus	Aaron Marcus	682499	Vascular Non-vascular	P% NB%
Ben Rostron	ab_orchid		3304841	Orchidaceae	PMORC%
Robin Abernethy	aber_r16	Robin Abernethy	2528838		
Andrew Smith	abtsmith	Andrew Smith	1327158	Insects Coleoptera	II%
Andrew Christensen	achr2	Andrew Christensen	7072130	Vascular Plants	P%
Amanda Veinotte	acveinotte	Amanda Veinotte	1122139		
Adam Durocher	adamdurocher		1387541		
Alex Dohman	adohman	Alex Dohman	1297292		
Adam Martin	ady_m	Adam Martin	11864	Vascular Plants Mamma	P% AM%
Ansel Fiddaman	afid		1254600	Orchidaceae	PMORC%
Alain Belliveau	agbelliveau		533332	Vascular Plants Lichens	P% NL%
Andrew Grosse	agrosse		3596662	Amphibia Reptilia	AA% AR%
Alejandro Huereca Delgado	ahuereca	Alejandro Huereca Delgado	683372	Lichens and Lichenicolo	NL%
Arturo Santos	aispinsects	Arturo Santos	604948	Diptera, particularly Ant	IIDIP% IIORT%
Amy Jewitt	ajewitt	Amy Jewitt	16288	Invasive species	P% A% I%
Allan Trently	ajtrently	Trently,Allan J	29618		
Alex Wright	ajwright	Alex Wright	205278	Vascular Plants	P%
Alec Kaisand	akaisand	Alec Kaisand	1067639		
Alan Rockefeller	alan_rockefeller	Alan Rockefeller	25945	Fungi	NF% NL%
Alan Liang	alanliang	Alan Liang	2650187	Lepidoptera	IIILE%
Dirk C. Albach	albach		726060	Veronica	PDSCR%
Alex Abair	alex_abair	Alex Abair	434305	Lamiaceae (mints)	PDLAM%
Alex Harman	alex_cicindela_guy	Alex Harman	579740	Coleoptera Orthoptera	IICOL% IIORT% IIILEP%
Alexandre Bergeron	alexandre_bergeron	Alexandre Bergeron	4366607	Vascular Plants	P%
Ali Chaney	alichaney	Ali Chaney	1659821		

## High Quality Data

- 5,103,746 Observations
- 35,418,643 Identifications

# iNaturalist Contributions to Montana Natural Heritage Program Data System - 1

- **34 species (26 native and 8 non-native) added to the data system because of an iNaturalist record**
  - 5 native and 1 non-native vascular plants
  - 6 native algae
  - 2 non-native vertebrates
  - 12 native insects
  - 1 native and 2 non-native spiders
  - 1 non-native ispod
  - 1 non-native terrestrial snail
  - 1 native and 1 non-native bryozoan
  - 1 native hydrazoan
- **iNaturalist are first records in the data system for 702 species (659 native and 43 non-native)**
  - 17 native and 7 non-native vascular plants
  - 6 native algae
  - 157 native and 6 non-native fungi
  - 23 native and 1 non-native lichen
  - 2 non-native vertebrates
  - 420 native and 22 non-native insects
  - 34 native and 2 non-native spiders
  - 1 non-native isopod
  - 1 non-native terrestrial snail
  - 1 native and 1 non-native bryozoan
  - 1 native hydrazoan
- **Extended or filled in gaps in the known range for many hundreds of species**
- **Contributed to early detection of and rapid control for a number of non-native species**

\*Through  
March 11, 2026)

Palmer's Amaranth



Rush Skeletonweed



Yellow Floating Heart



European Common Reed



Cutleaf Teasel



Policeman's Helmet



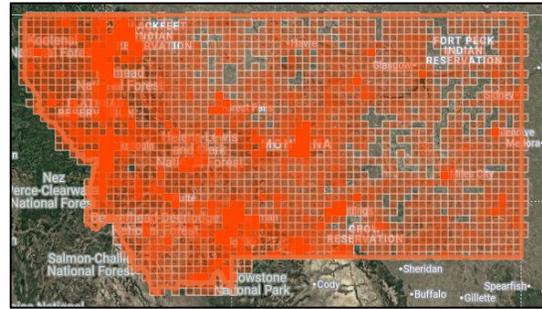
Roman Snail



# iNaturalist Contributions to Montana Natural Heritage Program Data System – 2

(March 11, 2026)

## iNaturalist Totals For Montana



## Summary of iNaturalist Records Integrated into the MTNHP Data System

Taxa	No. of Orders	Total No. of Obs	No. Obs for SOC	No. Obs for Non-natives
Vertebrates	44	44,500	8,002	1,486
Invertebrates	32	18,863	467	2,387
Fungi/Lichens	34	788	6	42
Vascular Plants	59	74,971	925	14,016
Nonvascular Plants	11	21	1	0

**\*63,363 zoological & 75,840 botanical records now appended (27% of MT iNat records)!**

# How iNaturalist Data is Used by Natural Resource Managers in Montana



Credible iNaturalist data is included in Environmental Summary Reports that inform all environmental review, permitting, and planning processes.

## Table of Contents

- [Species Report](#)
  - [Structured Surveys](#)
  - [Land Cover](#)
  - [Wetland and Riparian](#)
  - [Land Management](#)
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  - [Invasive and Pest Species](#)
  - [Introduction to Montana Natural Heritage Program](#)
  - [Data Use Terms and Conditions](#)
  - [Suggested Contacts for Natural Resource Agencies](#)
  - [Introduction to Native Species](#)
  - [Introduction to Land Cover](#)
  - [Introduction to Wetland and Riparian](#)
  - [Introduction to Land Management](#)
  - [Introduction to Invasive and Pest Species](#)
  - [Additional Information Resources](#)
- \*Companion Excel  
\*\*Field Guides



**MONTANA STATE LIBRARY**  
NATURAL HERITAGE PROGRAM [mtnhp.org](http://mtnhp.org)  
1201 11th Ave • P.O. Box 201800 • Helena, MT 59620-1800 • fax 405-444-0266 • phone 405-444-3989



Latitude	Longitude
45.69648	-112.68861
45.82961	-112.86051

Summarized by:  
**Charcoal Creek-Big Hole River**  
(100200041104 - 6th Code Watershed)



**Suggested Citation**  
Montana Natural Heritage Program. Environmental Summary Report.  
for Latitude 45.69648 to 45.82961 and Longitude -112.68861 to -112.86051. Retrieved on 4/1/2024.

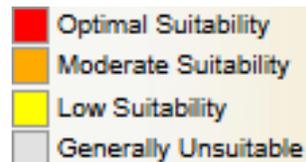
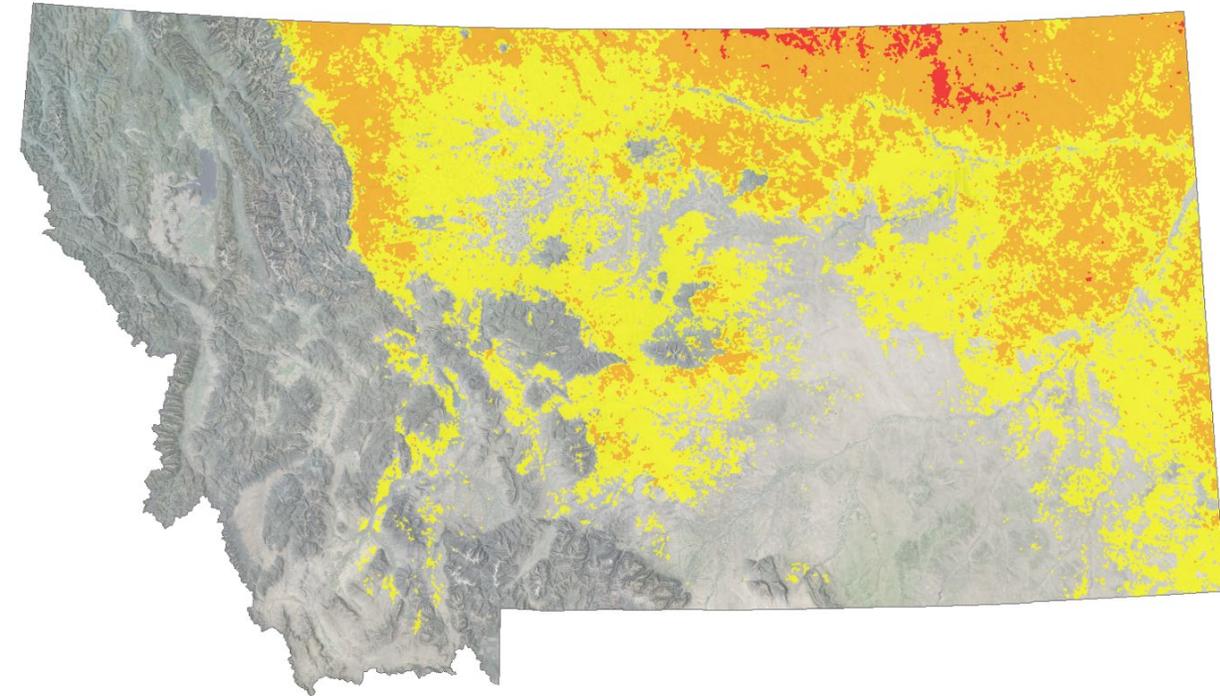
The Montana Natural Heritage Program is part of the Montana State Library's Natural Resource Information System. Since 1985, it has served as a neutral and non-regulatory provider of easily accessible information on Montana's species and biological communities to inform all stakeholders in environmental review, permitting, and planning processes. The program is part of the NatureServe network that is composed of over 60 member programs across North America that work to provide current and comprehensive distribution and status information on species and biological communities.



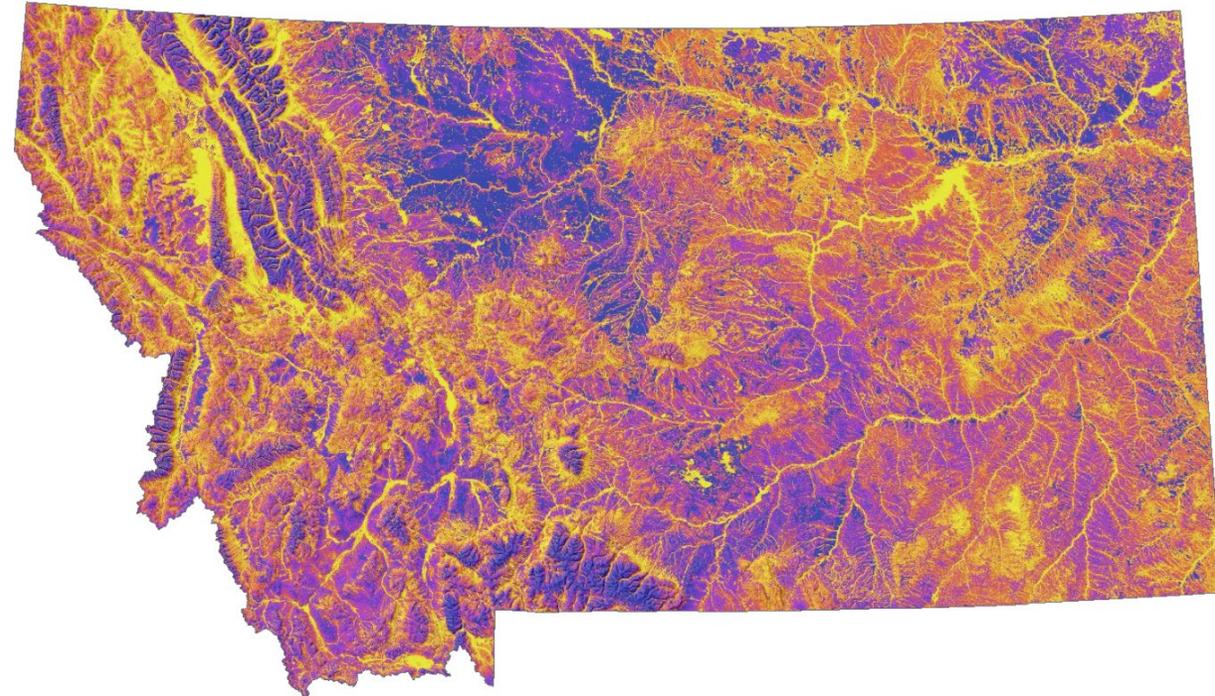
**Environmental Summary**

# Credible iNaturalist Data is used in Models to Understand Habitat Suitability for Individual Species and Predicted Overall Biodiversity

## Predicted Habitat Suitability for Sprague's Pipit



## Predicted Habitat Suitability for the Overall Biodiversity of Vertebrate Species



Habitat Supports  
Lower Levels of  
Biodiversity



Habitat Supports  
Higher Levels of  
Biodiversity

# Audit Reports are eMailed Directly to Agency Staff

## Early Detection and Rapid Response to Weed Invasions is Facilitated with the Audit Reports Below

### New Invasive Species - Quarterly Report

These non-native species observations were added to the MTNHP database in the last quarter. Observations are organized by County.

See these and other records in <https://mtnhp.org/mapviewer/>

Rerun this report: <http://intranet.nhp.mt.gov/SQLPRDNightlyAuditRunOne.asp?i=57>

1278 records in this report This report runs every **First of Quarter** morning

County	MT_Status	Field_Guide_Link	S_Com_Name	Num_Obs_Last_Quarter	Tot_Obs_For_County	Tot_Obs_For_State
Beaverhead	R3	<a href="#">PMPOA151H0</a>	Cheatgrass	3	450	10203
Beaverhead	N2B	<a href="#">PDAST1Y140</a>	Spotted Knapweed	3	6232	144587
Beaverhead	N2B	<a href="#">PDAST2E090</a>	Canada Thistle	23	2971	54589

### New Weeds Observations >2km from Existing Obs

These noxious weed observations were added to the MTNHP database in the last week and are >2km from all previous observations (if mapped precisely). **Actual observation dates may be before this period. See these and other records in <https://mtnhp.org/mapviewer/>**

6 records in this report This report runs every **Sun** morning

Field_Guide_Link	S_Com_Name	MT_Status	Obs_ID	Location	Latitude	Longitude	Distance_fromOldObs_km	Date_Added	Date_Ob
<a href="#">PDAST26010</a>	Rush Skeletonweed	N1B	2461171	US-2, Libby	48.21854	-115.46775	3.59	2025-10-01	2025-09-
<a href="#">PDAST4W090</a>	Orange Hawkweed	N2A	2460901	Red Meadow Dr, Polebridge	48.77528	-114.53658	8.86	2025-10-01	2025-08-



Palmer's Amaranth



Rush Skeletonweed



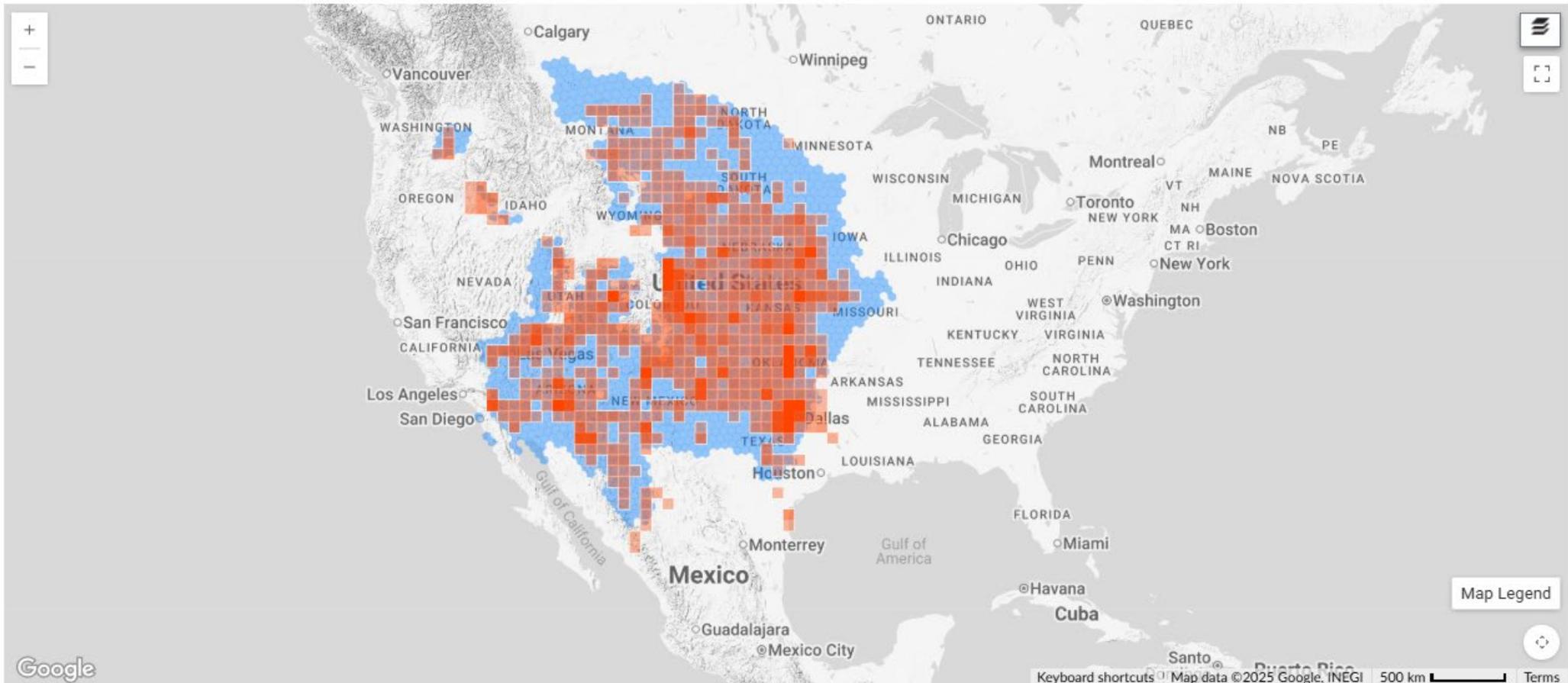
Escargot

# Geomodels Help Document Species' Range and What Montana's Relative Stewardship Responsibility is for a Species

## Geomodel Predictions of Woodhouse's Toad (*Anaxyrus woodhousii*)

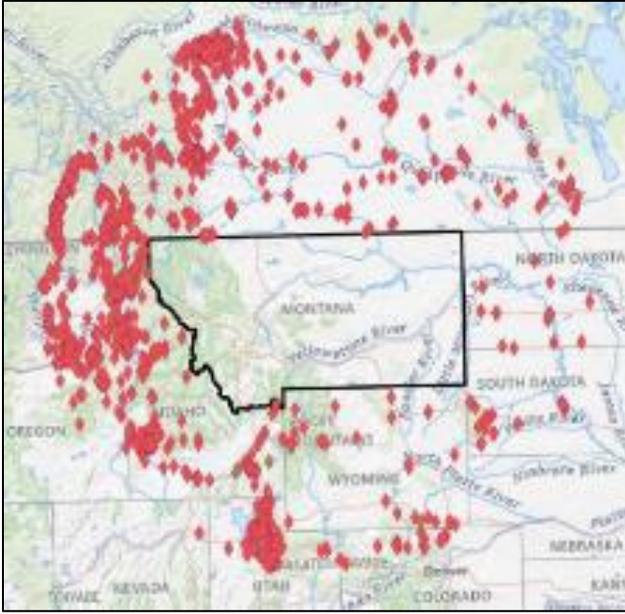
The Geomodel makes predictions about where species occur and where they are absent. We use the Geomodel to apply the "Expected Nearby" label alongside suggestions and to weight these suggestions based on the location of the observation. [https://www.inaturalist.org/geo\\_model/64989/explain](https://www.inaturalist.org/geo_model/64989/explain)

Like the Computer Vision Model, the Geomodel is trained on iNaturalist observations for the same set of species with roughly more than 100 photos. The Geomodel does not make perfect predictions. You can read more about how the Geomodel is made [here](#).



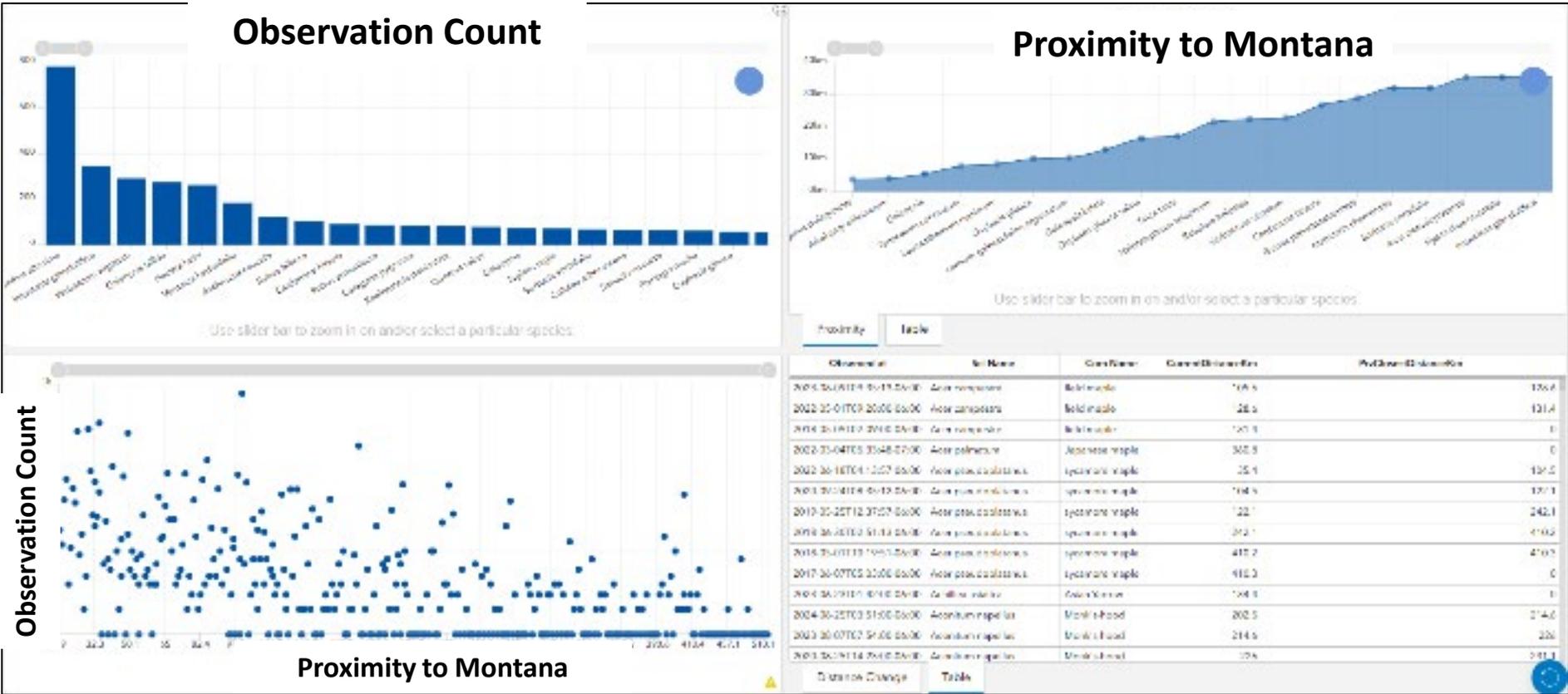
# iNaturalist Non-native Species Watchlist

<https://tinyurl.com/5n8sn6az>



Non-native records  
outside Montana within  
800-km radius of center  
of Montana

Helps managers  
understand what  
species are likely to  
invade Montana Next!



Change in Distance to Montana

Search

Date	Taxon Group	Scientific Name	Common Name	Current Distance Km	Previous Closest Distance Km	Distance Change Km	Observation Link
8/8/2011	Plantae	<i>Colocasia b. fida</i>	Big-leaf Hemlock	36.1	504.7	468.6	<a href="#">View</a>
11/2/2021	Plantae	<i>Mentha aquatica</i>	watermint	76.6	492.5	415.9	<a href="#">View</a>
7/11/2018	Plantae	<i>Lonicera caerulea</i>	max. chrysanthemum	12.9	408.2	395.3	<a href="#">View</a>
7/19/2022	Plantae	<i>Colocasia horizontalis</i>	Wall colocasia	106.8	468.1	361.3	<a href="#">View</a>

# How To Use iNaturalist - Basics



How-To iNaturalist Resources



# How does iNaturalist work?



1. Take a photo (or record a sound) of an organism using the app.



2. You will get a suggested identification.

The app automatically records the date/time and location.

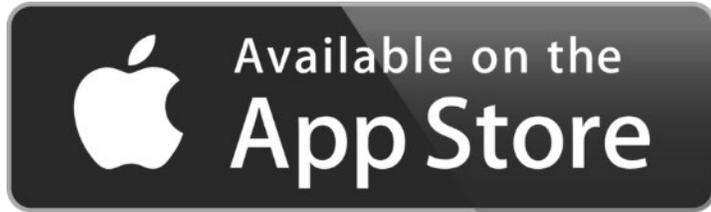


3. The uploaded observation is visible to the iNaturalist community, who can confirm and correct identifications.

Observations with consensus on the ID are shared with other databases used for science and conservation.

# Setting up an iNaturalist Account

1. On your phone - Download the iNaturalist app from your favorite app store



2. On your phone or on a desktop computer, create an iNaturalist account under the Sign Up link at the upper right of the page <https://www.inaturalist.org/>



3. Maintaining the default check on the upper box on licensing of photos, sounds, and observations will allow your information to be used with a creative commons non-commercial attribution license so that it can be readily used by natural resource managers



4. Under the account menu at the upper right (while logged in), click on Account Settings and create an account **Profile**, and establish **Content and Display** settings, **Notification** settings, and linked **Applications** (e.g., Flickr, Google) for photo importing

Join the largest group of naturalists in the world!

I'm not a robot  
reCAPTCHA is changing its terms of service. [Take action.](#)

Yes, license my photos, sounds, and observations so scientists can use my data (recommended). [Learn More](#)

I consent to allow iNaturalist to store and process limited kinds of personal information about me in order to manage my account [Learn More](#)

I consent to allow my personal information to be transferred to the United States of America [Learn More](#)

I agree to the [Terms of Use and Privacy Policy](#), and I have reviewed the [Community Guidelines](#).

# Recommended “Account Settings” – personal menu at upper right

## Content and Display

- Project – “Any”
- Taxonomic – “Automatically Update my content for taxon changes”
- Community Moderation
  - Accept Community Identifications
  - “Anyone” can add observation fields to my observations
- Licensing
  - Default observation license – (CCO) or No Copyright. This allows data to be freely used by data managers and natural resource managers even if a data fee is required in permitting processes.
  - Default photo license – (CCbyNC) or Attribution-NonCommercial. This allows your photos to be used by others in non-commercial purposes, but you must be credited for their use.
  - Default sound license – (CCbyNC) or Attribution-NonCommercial. This allows your sound files to be used by others in non-commercial purposes, but you must be credited for their use.

## Notifications

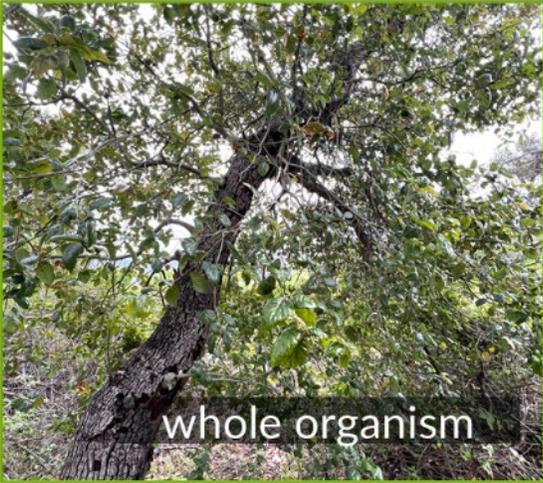
- This really depends on your interest in or tolerance for notifications, but in general it probably makes sense to be notified if someone mentions your @username

# Tips for Taking Photos

1. **Get close and fill the frame** with the organism you are observing for your first or main photo (right)
2. Take a photo of the **general setting** in a secondary photo (left)



# Take multiple shots to capture distinguishing features!



Habit of the Whole Plant



Basal Leaves



Basal Leaves Up Close



Mid-Stem Leaves Up Close



Inflorescence



Close-up of Inflorescence



Close up Flower Heads



Close up Flower Head

# Tips for Taking Photos of moving organisms

1. For insects and other animals that are moving around, **take a photo as soon as you have the animal in the frame** (left)
2. Take additional photos as you have time and ability to do so. **Keep clearer and in focus photos** (right) and delete poorer photos before submitting the observation.



# Key iNaturalist Resources

Tag the following taxonomic experts in Montana for help with identification...in the comments of an observation say “@bmaxell can you please help me identify this tadpole”

Scott Mincemoyer (**vascular plants**): @scott\_mt

Peter Achuff (**vascular plants**): @plachuff

Kenda Herman (**vascular plants**): @kendarae

Dan Bachen (**general resource, vertebrates**): @dbachen

Bryce Maxell (**general resource, vertebrates**): @bmaxell

Zach Shattuck (**fish**): @pantosteus

Alexis McEwan (**amphibians, reptiles**): @lex\_13

Bo Crees (**birds**): @bocrees

Frank Etzler (**invertebrates**): @frank\_e\_etzler

Ian Foley (**invertebrates**): @ian26

Noah Siegel (**fungi**): @noah\_siegel

Ryan Patrick (**fungi**): @biglaughinggym

Craig McLane (**aquatic invasive species**): @cmclane

- **iNaturalist Resources**

<https://www.inaturalist.org/pages/resources>

- **iNaturalist Help and Knowledge Base**

<https://help.inaturalist.org/en/support/home>

- **iNaturalist Educators Guide**

<https://help.inaturalist.org/en/support/solutions/articles/151000170805>

- **iNaturalist Ambassador Program...if you do a lot of iNaturalist outreach**

<https://www.inaturalist.org/pages/ambassadors>

# How To Use iNaturalist - Advanced



How-To iNaturalist Resources



# iNaturalist

# Versus



- **iNaturalist and Seek are similar but separate applications**
- **Seek takes many special precautions to protect User privacy to ensure safe use by persons 12 years of age or younger**
  - It does not request or collect personal information that would allow someone to identify or contact you
  - It does not require a user account or other log in
  - It does not use cookies
  - Latitude and longitude coordinates transmitted by the App to identify species near the User are rounded to two decimal places before transmission in order to protect the precise location of the User
  - Images are stored on the device, are only transmitted for the sole purpose of identifying the species photographed, and are deleted from servers shortly after processing by the identification algorithm.
  - Badges awarded within Seek to encourage exploration are stored solely within the App on the User's device.
  - Seek Users 12 years of age or younger who try to create an iNaturalist account to publicly share data outside of Seek by posting to iNaturalist are required to get parental consent via this link: [http://www.inaturalist.org/user\\_parents/new](http://www.inaturalist.org/user_parents/new)
- **An optional feature of Seek is to create an iNaturalist account, login to your iNaturalist account within Seek so that they are linked, and then selectively submit geolocated photos and observations to iNaturalist**
- **Seek Privacy Policy** [https://www.inaturalist.org/pages/seek\\_privacy\\_policy](https://www.inaturalist.org/pages/seek_privacy_policy)
- **iNaturalist Privacy Policy** <https://www.inaturalist.org/pages/privacy>
- **Summary of differences between Seek and iNaturalist**  
<https://help.inaturalist.org/en/support/solutions/articles/151000169914>

# General Terms of Potential Interest - 1



- **Account Settings of Particular Interest**
  - **Content & Display** = set licensing of observations, images, and sound files and which projects can add your obs. Generally encourage Attribution (CC) for observations and Attribution (CC) or Attribution-NonCommercial (CC BY-NC) for images and sound files.
  - **Notifications** = if doing a lot of identifications, use to reduce notifications on confirming IDs
  - **Relationships** = follow, mute, or entirely block other iNat users
- **Dashboard** = your iNaturalist home page where you can subscribe to taxa, edit your profile, edit/add observations, create and join Projects, see the latest posts on the iNaturalist forum,
- **Projects** = a project groups a set of observations for certain goals and has a page to communicate to project members. **Collection Projects** are essentially a saved filter for taxa, place, users, dates, data quality, etc. that can be used for encouraging data collection and identifications. **Traditional Projects** are more complex and can be used as data repositories for observations not identified to species. Users must join these projects and then add their observations to them. If a user has Obscured an observation, project managers can see precise coordinates if the user has also joined the Collection or Traditional project and submitted the observation to the project. **Umbrella Projects** allow up to 500 Collection or Traditional Projects to be collated, compared, or promoted on a single landing page.

# General Terms of Potential Interest - 2 iNaturalist

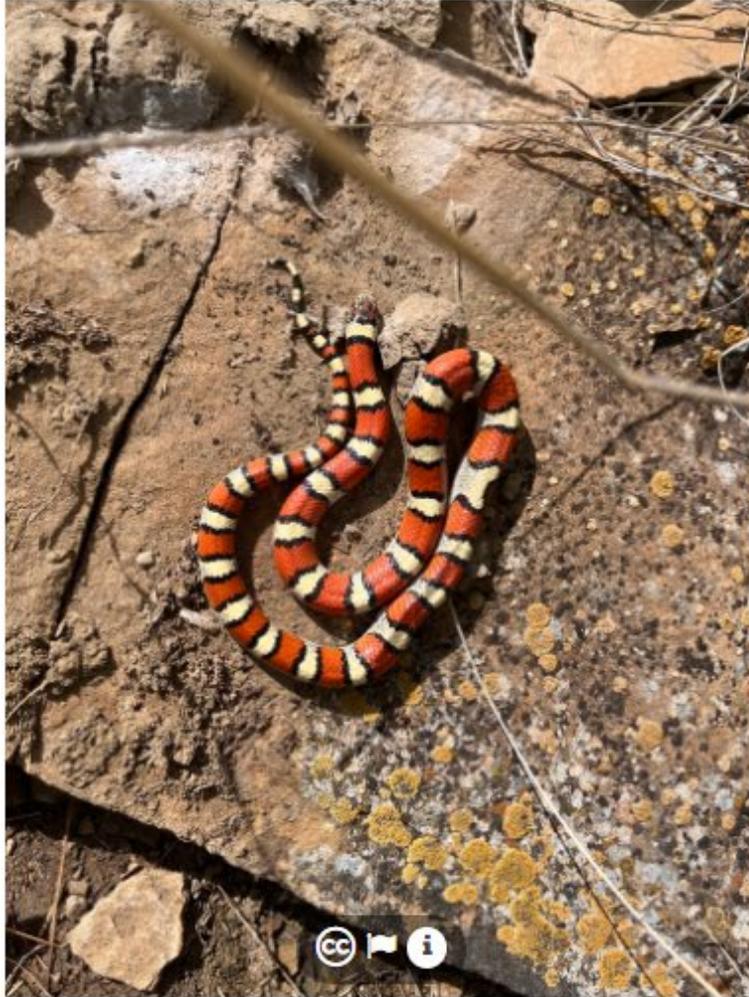
- **Site Curator** = iNaturalist users who volunteer to help keep taxonomic data up-to-date and deal with Taxon Curation Flags.
- **Taxon Curation Flag** = On individual taxon pages, the Curation button to the bottom right of the taxon photo allows concerns over taxonomy or taxon geoprivacy to be “Flagged for Curation”. This can be used to request that taxon geoprivacy be set to Open because there are no concerns of exploitation or Obscured because there are concerns of exploitation if precise location coordinates are shared for the taxon.
- **Subscriptions** = On your dashboard you can subscribe to a Taxon globally or a **Place** to receive a morning email of reports for a taxon records reported for a place/jurisdiction of interest.
- **Expert Identifier** = A curated list of iNaturalist users that have either general or specific expertise with identification of a taxonomic group AND, perhaps more importantly, the confidence and knowledge to say they can't identify something to species when the evidence does not support it or their skill level or experience does not allow for certain identification. Expertise is evaluated only for taxonomic groups and not geographic areas. Access and update the master Expert Identifier list for the United States and Canada at: <https://forms.office.com/g/QXF787VWwQ>

# Observation Terms of Potential Interest iNaturalist

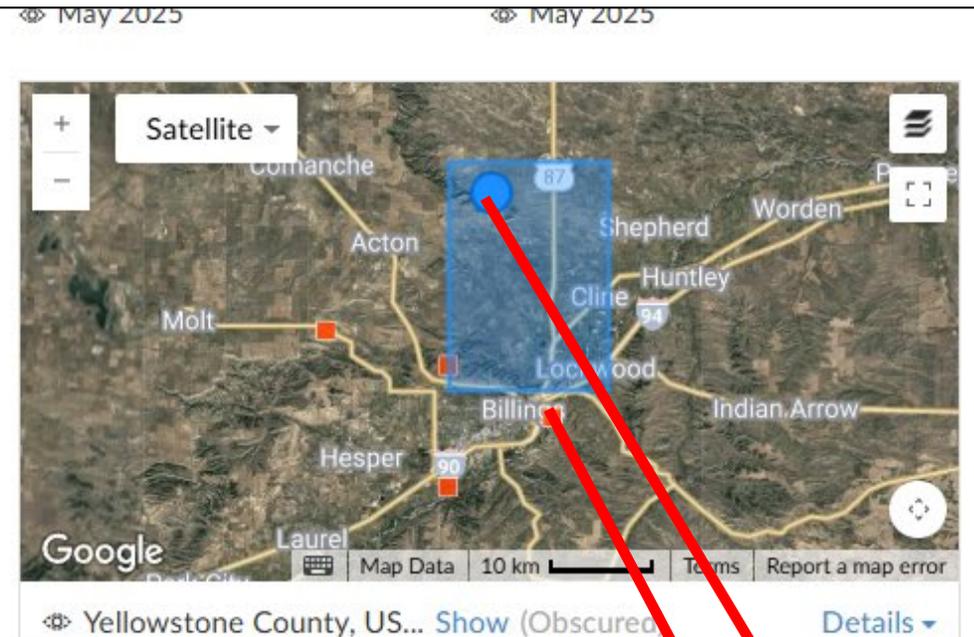
- **Open versus Obscure** = Open records display precise location coordinates. Obscure records do not display precise location coordinates and are displayed as a random point within rectangles that are 0.2 degrees latitude x 0.2 degrees of longitude. Records can be obscured for an entire taxon (taxon geoprivacy) because of exploitation concerns and iNaturalist defaults to obscure records for taxa that are S1, S2, or S3 in a jurisdiction. A Taxon Flag can be submitted to Obscure or Open all records for a taxon within a jurisdiction. A user can also Obscure any record at the time of submission if they have concerns about precise locations being made available (personal geoprivacy); if they do this but also join a Project and submit the observation to the Project, project managers can see the precise location coordinates.
- **Research Grade** = Two-thirds of identifiers agree on taxa identification...this could include the original submitter who didn't identify to species agreeing with another user's identification!
- **Tags** = Short text that can be added only by the observer for future searching/filtering.
- **Observation Fields** = Classifications of the observation that are controlled and populated by any iNaturalist user unless the observer has opted out.
- **Annotations** = Classifications of the observation that are controlled by iNaturalist staff, but populated by anyone. Annotations include Life Stage, Sex, Flowers and Fruits, Leaves, Alive or Dead, Evidence of Presence, and Established. These can be useful for filtering for particular research projects (e.g., phenology or taxonomy).

# Obscured vs Open

Western Milksnake (*Lampropeltis gentilis*) EN Research Grade



We encourage you to report precise coordinates or leave the geoprivacy as “Open” vs. “Obscured” or “Private” unless private property or other interests are concerned!



Lat/Lon: 45.97320, -108.54551 📄 Accuracy: 27.1km Geoprivacy: Obscured

Lat/Lon: 45.77605, -108.47127 📄 Accuracy: 102m Geoprivacy: Open

# Research Grade

\* A record achieves “Research Grade” when two-thirds of 3 or more identifiers agree on the taxonomic identification. For many species, identification by a species expert is preferable.

Yellowstone County, MT, USA

kookamongus, man4nature, and 1 other faved this observation

Activity

astevens suggested an ID Improving 6y

Western Milksnake (*Lampropeltis gentilis*) Compare

bobbyfingers suggested an ID 6y

Western Milksnake (*Lampropeltis gentilis*)

Community Taxon What's this?

Western Milksnake (*Lampropeltis gentilis*) EN

Cumulative IDs: 13 of 13

0 2/3rds 13

Agree Compare About

## About community taxa

The community taxon (or community identification) represents what taxon the iNaturalist community thinks is depicted in an observation. If you're interested in how we choose the community taxon, see the notes on the algorithm below, but in general, we try to **choose a taxon that more than 2/3 of the identifiers agree with**. Sometimes this means choosing a higher level taxon that contains a number of disagreeing taxa (e.g. you think it's a kingsnake and I think it's rattlesnake, so iNat chooses suborder Serpentes which contains all snakes). The algorithm also slightly favors dissent, because we've found that dissenters are often correct.

A research grade observation must have (among other criteria) a community taxon. If an observation has only one identification, it won't have a community taxon. All observations with at least one identification will also have an observation taxon. The observation taxon is the taxon we use when sharing observations with data partners, linking observations of the same taxon on the site, updating your life list, etc. In most cases the observation taxon will eventually be set to the community taxon, but sometimes they will differ especially before the community has settled on an identification. For example, if you think it's a snake (suborder Serpentes) and I think it's a kingsnake (genus *Lampropeltis*) the observation taxon will be at kingsnake (supported by my identification only) but the community taxon will be at serpentes (supported by at least two identifications). If for some reason you don't agree with the community taxon, you can reject it on your own observations, which means that observation taxon will never be set to the community taxon (rather your own ID). It also means your observation can only become research grade when the community agrees with you. If you don't like the whole idea of community taxa, you can opt out of them entirely by [editing your settings](#).

**The algorithm:** for all identified taxa and the taxa that contain them (e.g. genus *Homo* contains *Homo sapiens*), score each as the ratio between the number of 'agreements' - cumulative IDs for that taxon over the sum of the cumulative IDs, 'disagreements' - the number of IDs that are completely different (i.e. IDs of taxa that do not contain the taxon being scored), and 'ancestor disagreements' - the number of more conservative IDs that disagree with the finer taxon. For the identified taxa that have a score over 2/3 and at least 2 identifications, choose the lowest ranked taxon.

### Algorithm Summary

Taxon	Identification Count	Cumulative Count	Disagreement Count	Ancestor Disagreements	Score
life	0	13	0	0	13 / (13+0+0)=13 = 1
Animals (Kingdom Animalia)	0	13	0	0	13 / (13+0+0)=13 = 1
Chordates (Phylum Chordata)	0	13	0	0	13 / (13+0+0)=13 = 1

Activity

bmaxell suggested an ID ID Withdrawn 3mo

Subtribe Hordeinae   
 a member of Grasses (Family Poaceae)

euderma suggested an ID ID Withdrawn 3mo

Great Basin Wildrye (*Leymus cinereus*)

My best guess. Perhaps a grass expert will prove me wrong.

scott\_mt suggested an ID\* Improving 3mo

Russian Wildrye (*Psathyrostachys juncea*) Compare

I was provided a specimen of this grass yesterday. Short glumes about 6mm long. Short, truncate ligule about 1mm long.

\* scott\_mt disagrees this is Great Basin Wildrye (*Leymus cinereus*)

scott\_mt commented 3mo

@euderma Yes, very similar to Great Basin Wildrye, which is why I was given a specimen to examine.

Community Taxon What's this?

Russian Wildrye (*Psathyrostachys juncea*) !

Cumulative IDs: 3 of 3

0 2/3rds 3

Agree Compare About

Annotations

Attribute	Value	Agree	Disagree
Flowers and Fruits	Select		
Leaves	Select		
Sex	Select		

Projects (1)

Add to a Project

Biodiversity of Montana

Tags

Add Tag

# Subscribing to a Place or Taxon

1. Navigate to Account Dashboard
2. Look for the “Subscriptions” box. Note that you may need to scroll down. Its dynamic and can usually be found on the right or bottom
3. To subscribe to updates from anywhere across the species range select “Subscribe to a Taxon” to limit your subscription to Montana or a discrete geographic area select “Subscribe to a place”
4. In the popup window choose the appropriate place and taxon. Note that if Taxon is left blank all observations from that place will be included.
5. You will receive a daily email of records submitted for taxa you have subscribed to.

The screenshot shows the iNaturalist user interface. At the top right, a user menu is open, with 'Dashboard' highlighted by a red circle and the number 1. In the right sidebar, the 'Subscriptions' button is circled in red with the number 2. Below it, the 'Subscribe to a Place' button is circled in red with the number 3. A popup window titled 'Subscribe to a Place' is open, showing a 'Place' dropdown menu circled in red with the number 4. At the bottom right of the page, a section titled 'New updates in the last 24 hours from iNaturalist' is circled in red with the number 5.

# Identifying Records

1. Click on the Identify tab.
2. Select the species and place of interest
3. Open the Filters menu and select the review criteria you want...selections shown will show all records...then click Update Search at lower left
4. If you only want to see records you have not already reviewed, turn off the Reviewed checkbox
5. Click on individual records and review details of location, date, accuracy, and image or sound file. Put cursor in "Suggest an Identification" line to see iNaturalist AI suggestions. Click Agree with previous identification or enter your identification.
6. Take identifications as far as you can taxonomically to allow those identifications to be seen by the filters of others.

The screenshot shows the iNaturalist Identify interface. At the top, the 'Identify' tab is highlighted with a red '1'. Below it, the search bar contains 'Long-toed Salamander' (annotated with a red '2') and 'Montana, US' (annotated with a red '2'). A 'Go' button is next to the location. To the right, a 'Filters' button (annotated with a red '3') and a 'Reviewed' checkbox (annotated with a red '4') are visible. The filters menu is open, showing options for Quality Grade (Casual, Needs ID, Research Grade), Show (Captive, Threatened, Introduced, Popular, Has Sounds, Has Photos, Your Observations), Description/Tags (containing 'blue, butterfly, etc.'), Categories (various animal icons), Rank (High/Low), Sort By (Date Added, Descending), Date Observed (Any, Exact Date, Range, Months), Photo Licensing (All), and Reviewed (Any, Yes, No). The 'Update Search' button (annotated with a red '3') is at the bottom left of the filters menu. Below the filters, four record cards for 'Long-toed Salamander' (*Ambystoma macrodactylum*) are shown. The first card has a red '5' on it, indicating the step to click on a record.

# Adding Entered Observations to a Project

**\*This is only necessary for “obscured” observations so that Project and resource managers can see the precise location of the observation.**

## Activity

 bmaxell suggested an ID 👤 Improving 3mo

 **Bumble Bees**  
Genus *Bombus* ⚖ Compare

 johnascher suggested an ID 👤 Leading 2mo

 **Half-black Bumble Bee**  
*Bombus vagans* ⚖ Compare ✅ Agree

## Community Taxon

[Reject?](#) • [What's this?](#)

### Bumble Bees (Genus *Bombus*)

Cumulative IDs: 2 of 2



✅ Agree

⚖ Compare

ℹ About

✅ Annotations

## On Desktop Computer

1. Go to Projects under your profile and add project of interest if you do not already belong to it.
2. Go to the observation of interest
3. Below and to the right of the activity list of identifications click Projects
4. Select the project of interest

## On phone app:

1. Click on Projects folder and add project if you do not already belong to it.
2. Go to observation of interest and click on Edit
3. Open Projects folder
4. Select project

✅ Projects (1)

Add to a Project



Montana Natural Heritage Observations



# Other Tips and Tricks

- 1. For maximizing identification productivity, the following URL code can be used to search for or exclude particular identifiers:**  
**To include iNaturalist usernames “plachuff”, “scott\_mt”, “Lysandra”, and “mattlavin”**  
[https://www.inaturalist.org/observations/identify?quality\\_grade=needs\\_id%2Cresearch&taxon\\_id=76214&place\\_id=16&ident\\_user\\_id=plachuff,scott\\_mt,lysandra,mattlavin](https://www.inaturalist.org/observations/identify?quality_grade=needs_id%2Cresearch&taxon_id=76214&place_id=16&ident_user_id=plachuff,scott_mt,lysandra,mattlavin)  
**To Exclude iNaturalist usernames “plachuff”, “scott\_mt”, “Lysandra”, and “mattlavin”**  
[https://www.inaturalist.org/observations/identify?quality\\_grade=needs\\_id%2Cresearch&taxon\\_id=76214&place\\_id=16&without\\_ident\\_user\\_id=plachuff,scott\\_mt,lysandra,mattlavin](https://www.inaturalist.org/observations/identify?quality_grade=needs_id%2Cresearch&taxon_id=76214&place_id=16&without_ident_user_id=plachuff,scott_mt,lysandra,mattlavin)
- 2. Access and update the master Expert Identifier list for the United States and Canada at:** <https://forms.office.com/g/QXF787VWwQ>
- 3. Examples of standard comments used in iNaturalist when interacting with users/curators:**
  - **Taxon Flag:** Representatives from the Montana Natural Heritage Program, Montana Fish, Wildlife, and Parks, Region 1 of the U.S. Forest Service, the Montana/Dakotas State Office of the Bureau of Land Management, the Ecological Services Office of the U.S. Fish and Wildlife Service, and the Montana Office of the Natural Resources Conservation Service have reviewed all vertebrate and vascular plant taxa in Montana for geoprivacy opening/obscuring policy and find no need to obscure records for *Ursus arctos horribilis* in Montana as the species is wide-ranging and risks of sharing locations beyond critical denning habitat should not represent a threat/risk of harm to the species.
  - **Contribute Obscured Record to Project:** Please consider submitting this observation to the Montana Natural Heritage Observation Project so that natural resource managers can have access to precise coordinates in their planning efforts. You can do that by: (1) going to <https://www.inaturalist.org/projects/montana-natural-heritage-observations>; (2) click on Join at the upper right; (3) click on the “Yes, I want to join” button; (4) on an individual observation you can now type/select the “Montana Natural Heritage Observations” project under the Projects dropdown to the right of the identifications/comments.
  - **Editing location coordinates and accuracy:** You can edit the mapping of this and other records by: (1) Click on your profile in the upper right; (2) Click on "Edit Observations"; (3) Click on the observation to edit; (4) Click the blue "Edit" button at the upper right; (5) Zoom in on the map and move the marker pin to the correct location; (6) Click on the Edit link at the upper right of the map and type in a new accuracy value (Acc m); (7) Click on blue "Save Observation" button at the bottom left