

A close-up photograph of a green metallic bee in flight, positioned above several purple flowers. The background is a soft, out-of-focus green field.

# An Intro to iNaturalist

**cassi saari** Illinois Native Plant Society  
@bouteloua on iNaturalist & @boucur on Twitter

**Patrick McCrea** DeKalb County Forest Preserve District  
@mccrea on iNaturalist

# hi! I'm cassi saari (@bouteloua)

- Ecological restoration practitioner - design and monitor habitat restoration projects in Chicagoland region
- Volunteer curator on iNaturalist, president of NE Chapter Illinois Native Plant Society
- Plant-obsessed! Love to hike and botanize





# Patrick McCrea (@mccrea)



**Wildlife Ecologist for  
DeKalb County Forest  
Preserve District**

Restores and creates wildlife  
habitat

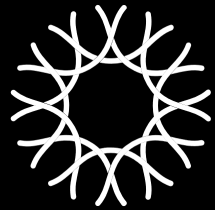


Monitors wildlife  
species within the  
preserves and  
throughout the  
county

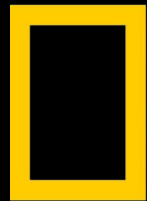


# iNaturalist

Started in 2008 (master's project)



CALIFORNIA  
ACADEMY OF  
SCIENCES



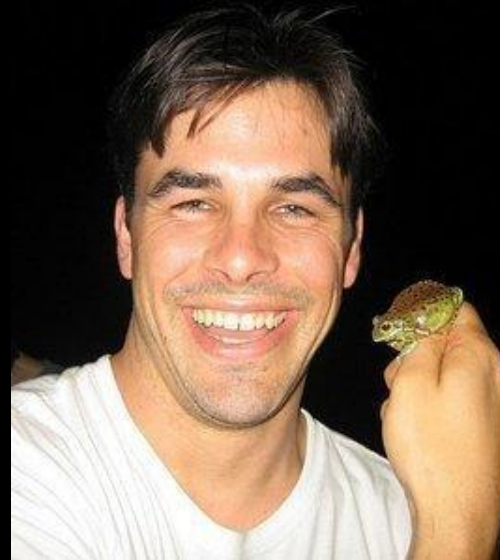
NATIONAL  
GEOGRAPHIC

iNat is completely free  
and open source:

- [github.com/inaturalist](https://github.com/inaturalist)
- [api.inaturalist.org](https://api.inaturalist.org)



Ken-ichi Ueda  
[@kueda](https://twitter.com/kueda)



Scott Loarie  
[@loarie](https://twitter.com/loarie)



iNaturalist





*iNaturalist is an online social network of people sharing biodiversity information to help each other learn about nature*

*iNaturalist is a crowdsourced species identification system and an organism occurrence recording tool*



iNaturalist



*iNaturalist is an  
app and website  
for nature nerds*





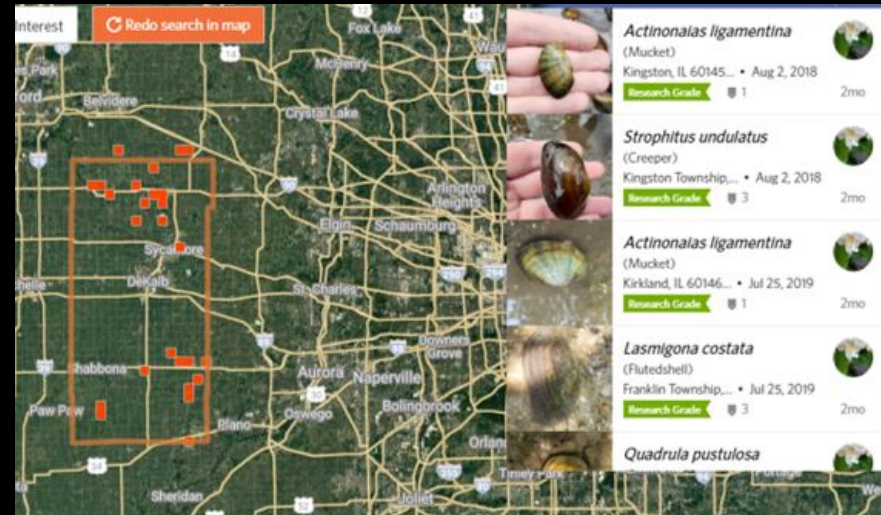
# Why do I use iNaturalist?

- Get help with identification
- Nature journal
- Learn more about species
- Help others identify
- Volunteer
- Awesome while traveling
- Look for fun places to explore
- Use data for my work
- Contribute to global database / community science



# Why does DeKalb County use iNaturalist?

- General species inventory
- Locating rare species
- Locating remnant species
- Collecting seed
- Species distribution
- Areas of interest (nesting sites, ephemeral pools)
- Tracking invasive species
- Get people involved and identifying species
- Connect with nature and build a community that cares

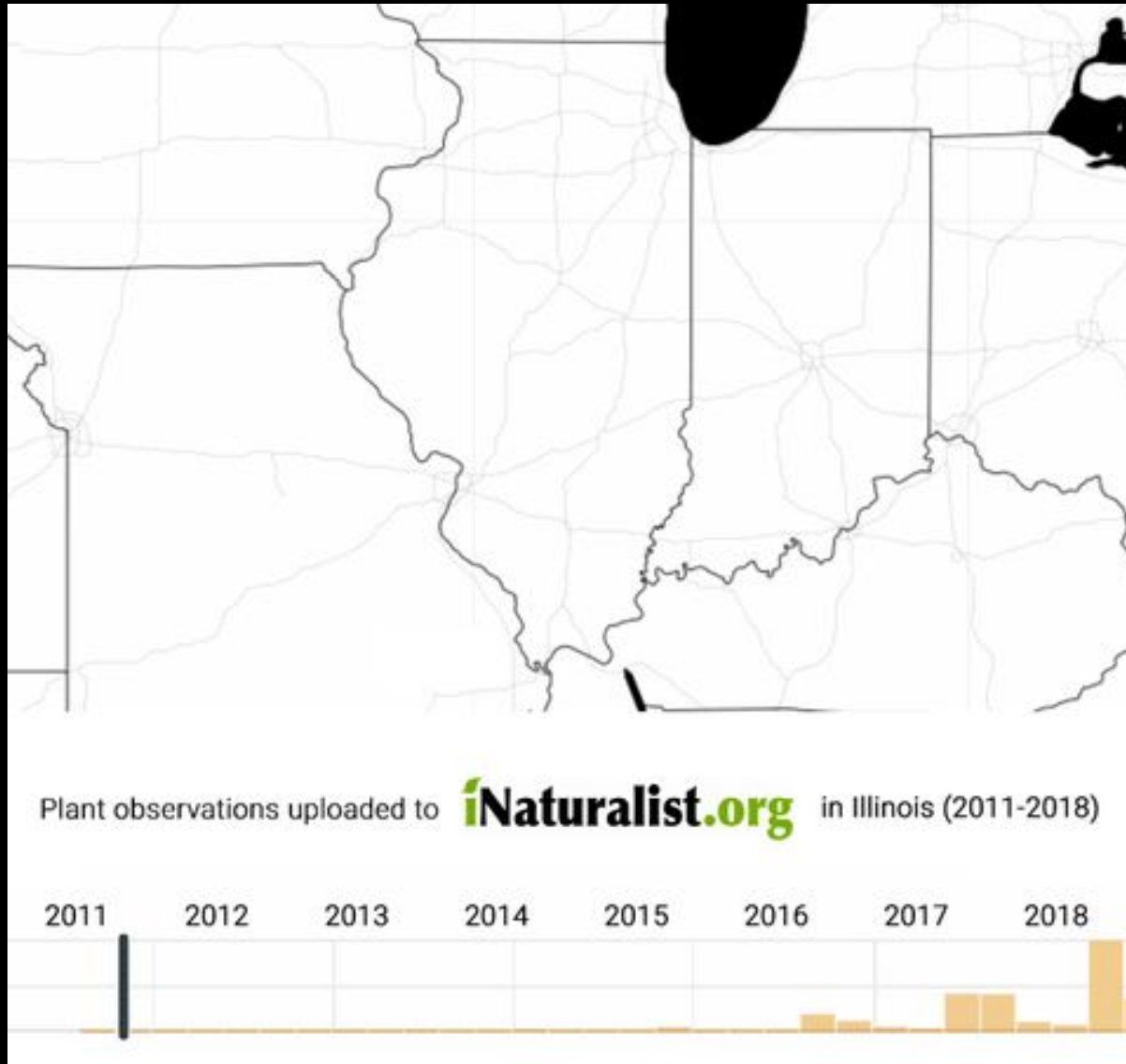




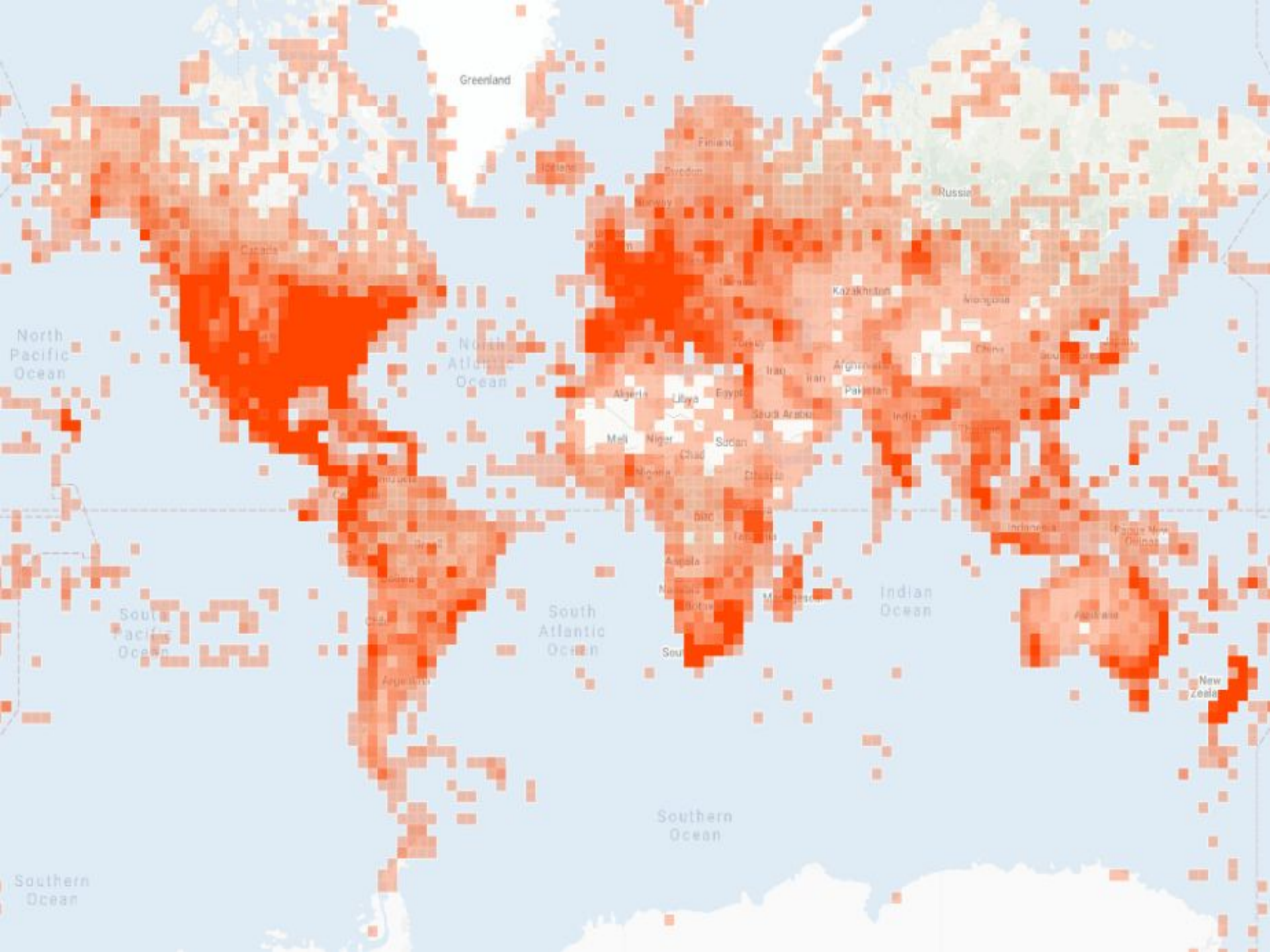
Do you or your organization use  
iNaturalist?



# iNat is growing fast





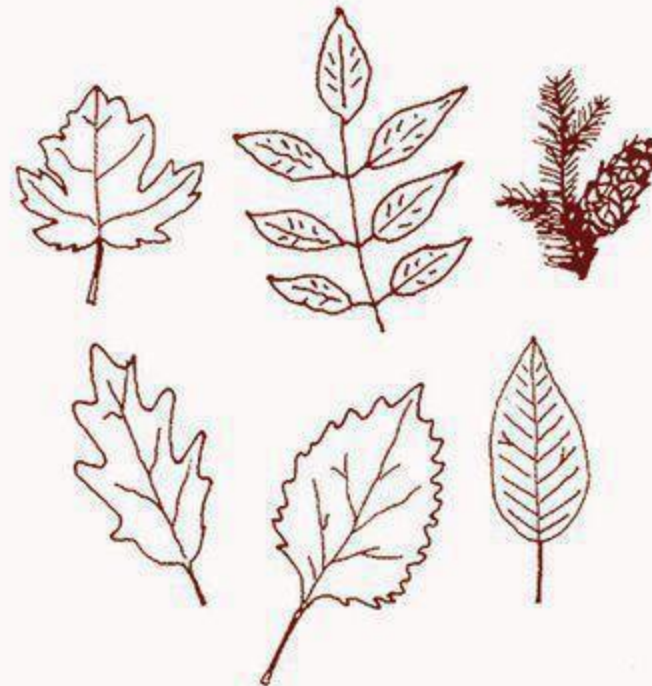


# Plant Literacy

Name these brands



Name these plants







beebalm

false sunflower

purple prairie clover

pale purple coneflower

grey-headed coneflower

golden Alexanders

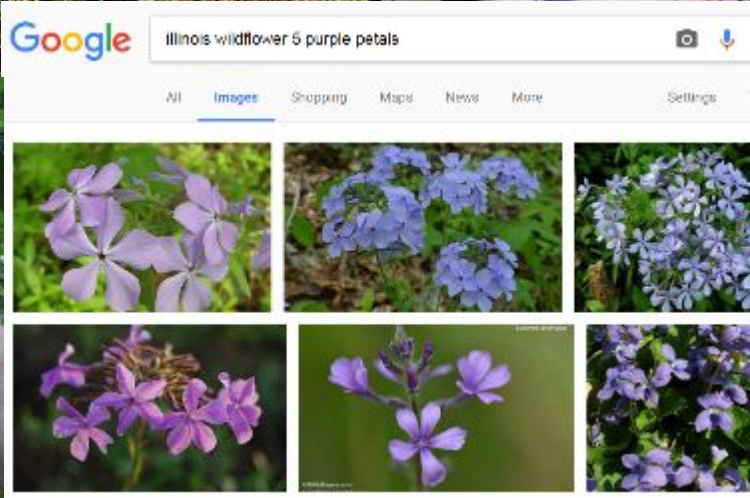
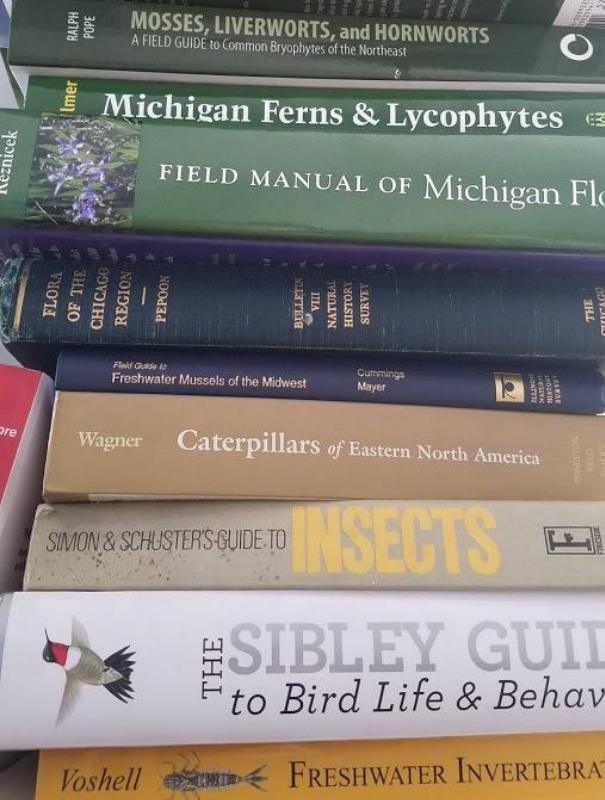
stiff goldenrod

**We can't protect and manage  
what we don't know**

Andy Stahr



# Ways to Learn





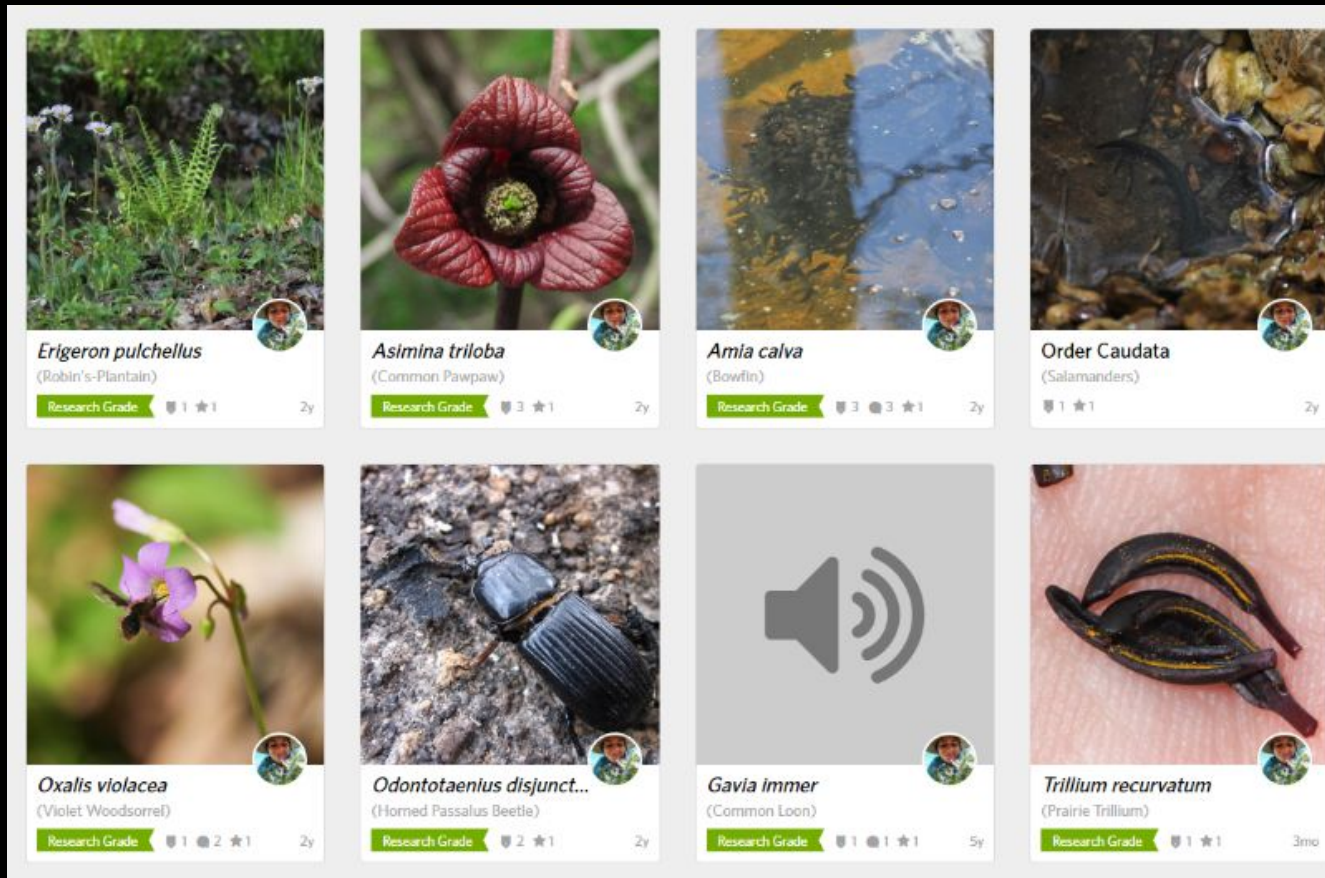
# Learning on iNaturalist

- Community of expert amateurs and professionals
- Automated species identification / “computer vision”
- Record your notes on ID
- Nature journal – time/place/with who/associate species
- Database of “verified” images to compare
- At different stages of life not just “picturebook ready”



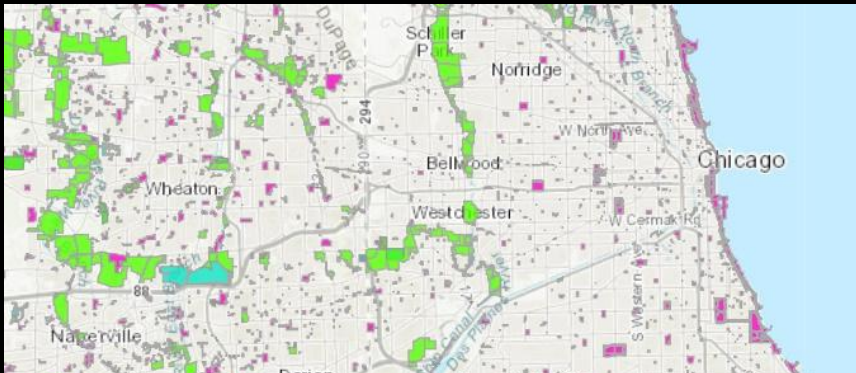
Blake Bringhurst

An **observation** records an encounter with an **individual organism** at a particular **time** and **location**.



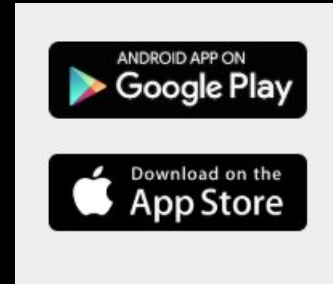


# Explore



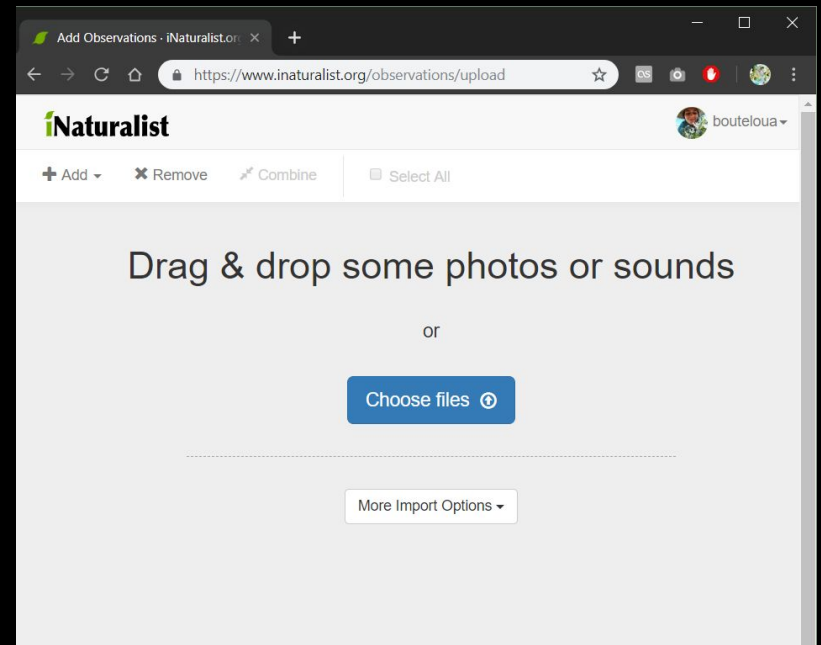
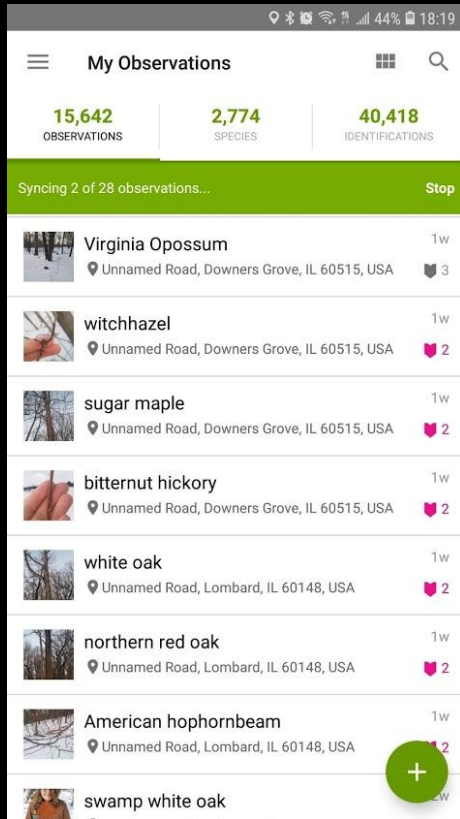


# Document





# Share






# Identify


- Anyone can add an identification to an observation
- Refining process – don't have to know which species
- “Community ID” system – can opt out if needed
- Casual Grade, Needs ID, Research Grade (community verified)





bouteloua suggested an ID 4mo


 Order Lepidoptera  
Butterflies and Moths


amzamz suggested an ID  Improving  4mo

 Superfamily Noctuoidea  
Owlet Moths and Allies


k8thegr8 suggested an ID  Improving 4mo

 Tribe Arctiini  
Tiger Moths


thebals suggested an ID  Leading 11h


 Genus *Apantesis*  
A member of Tribe Arctiini (Tiger Moths)

# Community

 **bouteloua**

Home Profile Observations Calendar IDs Lists Journal Favorites Projects



**cassi saari** Curator 

Joined: Aug 19, 2012 Last Active: Feb 12, 2019

Hi! I am a field botanist and ecological consultant in the Chicago region. Here's my personal website: [cassisaari.com](http://cassisaari.com)  
A new page for those iNat tips and searching tricks.

**Curating Needs**

There's a lot you could help out with as a member of the iNaturalist community. Besides uploading observations and helping others identify theirs, there is also a need for volunteers to help with curating the site's taxonomic database and help resolve various issues that come up. If you're interested in becoming a curator, read through the iNat Curator Guide and shoot an email to [help@naturalist.org](mailto:help@naturalist.org).

- \* Current Curating Needs
- \* Dealing with Low Quality Observations and Inappropriate Content

Don't hesitate to reach out to [help@naturalist.org](mailto:help@naturalist.org) or the Google Group if you have any questions/feedback about iNat. If you want to get in touch with me, feel free to @ tag me in a comment (@bouteloua). For longer queries, email is better: [cassisaari@gmail.com](mailto:cassisaari@gmail.com) Thank!









My photos are free to use, with credit, for non-commercial uses. Please get in touch if there are any you would like to use on Wikipedia.

**Edit account settings & profile**

- Observations **15610**
- Species **282**
- Identifications **40419**
- Journal Posts **14**
- Lists **15**
- Followers **348**





Admin Tools

**Following 185 People**

 <b>sedgequeen</b> 1857	 <b>prairiestar75</b> 0	 <b>bmontejo1</b> 35	 <b>j3berry</b> 22
 <b>davarapalli</b> 82	 <b>guessingatgre</b> 393	 <b>goodeve</b> 20	 <b>ellenkwilson</b> 23

[View All](#)

**Favorite Taxa**

 <i>Baicalophus bicolor</i>	 <i>Cynrips douglasii</i>	 <i>Orbea</i>	 <i>Gentianella quitqueana</i>
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## The People of iNaturalist.org

Invite someone to iNat!

### Recently Active



**pochung**  
added an ID to an observation by **pennywang** less than a minute ago



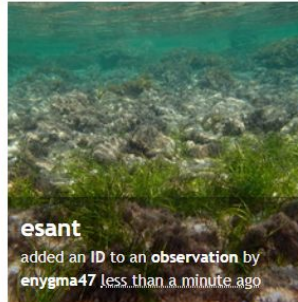
**mlarrivee**  
added an ID to an observation by **mlarrivee** less than a minute ago




**gumnut**  
added an ID to an observation by **bobmcd** less than a minute ago



**thilokruieger**  
added an ID to an observation by **vikula\_bludov** less than a minute ago



**esant**  
added an ID to an observation by **enygma47** less than a minute ago



**alnewittedelatorre**  
added an ID to an observation by **alnewittedelatorre** less than a minute ago






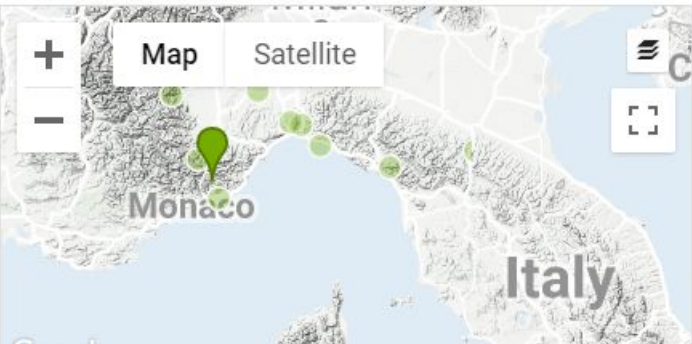


# Identify



 **bouteloua**  
🌿 15,672 observations

Observed: Nov 15, 2018 · 10:09 AM CET  
Submitted: Nov 15, 2018 · 3:53 PM CET



## Activity



bouteloua suggested an ID

🏆 Improving 3mo



Family Rosaceae  
Rose Family

🔍 Compare



blue\_celery suggested an ID

🏆 Improving 3mo



*Potentilla micrantha*  
Pink Barren-Strawberry

🔍 Compare

✅ Agree



finrod suggested an ID

3mo



*Potentilla micrantha*  
Pink Barren-Strawberry

Botanist at the Museum of Natural History of the Mediterranean of Livorno, Italy

Scientist with the Roman Society of Natural Sciences



# Discuss

*Persicaria hydropiper* (Waterpepper) Research Grade



bouteloua suggested an ID

ID Withdrawn 1y



~~Genus *Persicaria*~~

~~Knotweeds, Smartweeds, and Bistorts~~

@danielatha do you have tips for non-flowering *Persicaria punctata*/*hydropiper*/*robustior*?



danielatha suggested an ID

Improving 1y



*Persicaria hydropiper*

Waterpepper

Compare

Hi Cassi,

I'm glad you are interested in *Persicaria*. They are some of my favorite plants. Partly because they vex botanists so much. ha ha. Me included!!

These are three with peppery tasting leaves. Here are some tips for individual species.

*Persicaria hydropiper* - Annual; stems red, usually un-branched; swollen nodes; ocreae with axillary shoots and often cleistogamous flowers; leaves peppery tasting. This species is said to be non-native in North America, but I believe it is native.

*Persicaria punctata* - Annual; stems green, usually branched; nodes barely swollen; ocreae with or without axillary shoots, but lower ocreae without cleistogamous flowers; leaves peppery tasting.

*Persicaria robustior* - Perennial; otherwise like *Persicaria punctata*, but with long, submerged rhizomes; larger leaves and more crowded inflorescences. Leaves super peppery tasting-- so hot it burns way more than the other two. I have only ever seen it in standing water of

# Community

iNatForum



Annotations that do not fit ■ General		22	252	1d
Common birds being newly set to "obscured" recently ■ Curators		12	234	1d
"Introduced" icon - change the (!) to an (i) ■ Feature Requests 1 vote		36	250	16h
Rare, interesting and unusual arthropods in South Australia ■ Nature Talk		10	205	4d
Northern Red-tailed Hawk – Comments and Opinions ■ Nature Talk		15	293	5d
Would it be appropriate to post observations of dead "pests" in traps? ■ General		20	190	11h
Rename Location "Accuracy" circle to "Precision" circle ■ Feature Requests 10 votes		12	192	2d
Sharing observations with a link ■ General		9	209	1d
How to use Dronefly, a Discord chat bot ■ Tutorials		5	168	2d



iNaturalist

# Dashboard (News Feed)



tiwane added an observation

Feb 17



Order Agaricales Gilled Mushrooms

tiwane | February 17, 2019 | 1

Point Pinole Regional Shoreline, Richmond, CA, US (Google, OSM)

[View Observation](#)



sambiology added 6 observations

Feb 17



*Senecio vulgaris*

RG 2



*Sherardia arvensis*

RG 2



*Hedypnois cretica*

RG 1



*Poa annua*

RG 2

[View Observations](#)

[Identify](#)

[Show More...](#)



# My Life List

Stats

2484 taxa

1684 Plants

384 Insects

140 Birds

89 Fungi Including Lichens

44 Arachnids

36 Mammals

33 Reptiles

20 other animals

20 Amphibians

16 Molluscs

14 Ray-finned Fishes

1 protozoan

1 kelp, diatoms, and ally

16,856

OBSERVATIONS

2,839

SPECIES

1,205

IDENTIFIERS



71 observations CC

White Oak  
(*Quercus alba*)



65 observations CC

Common Racc...  
(*Procyon lotor*)



64 observations CC

White-tailed ...  
(*Odocoileus virginia...*)



60 observations CC

Small White L...  
(*Allium tricoccum*)



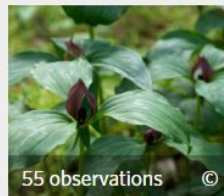
56 observations CC

Mayapple  
(*Podophyllum peltat...*)



55 observations ©

Northern Red ...  
(*Quercus rubra*)



55 observations ©

Prairie Trillium  
(*Trillium recurvatum*)



53 observations CC

Virginia Sprin...  
(*Claytonia virginica*)



52 observations CC

Eastern Skunk ...  
(*Symplocarpus foeti...*)



49 observations CC

Wild Geranium  
(*Geranium maculatu...*)



49 observations CC

Bur Oak  
(*Quercus macrocarpa*)



49 observations CC

Compass Plant  
(*Silphium laciniatum*)



48 observations CC

Common Buck...  
(*Rhamnus cathartica*)



47 observations ©

Big Bluestem  
(*Andropogon gerardii...*)



45 observations CC

Cut-leaved To...  
(*Cardamine concate...*)



# My Observations



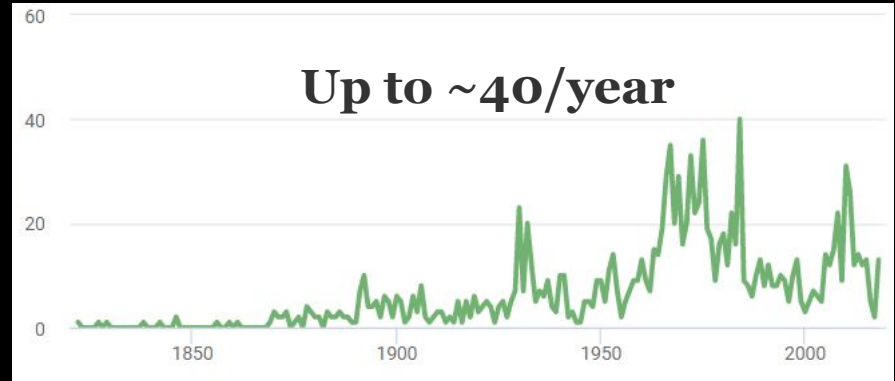
# My Identifications for Other People



# Common milkweed (*Asclepias syriaca*)

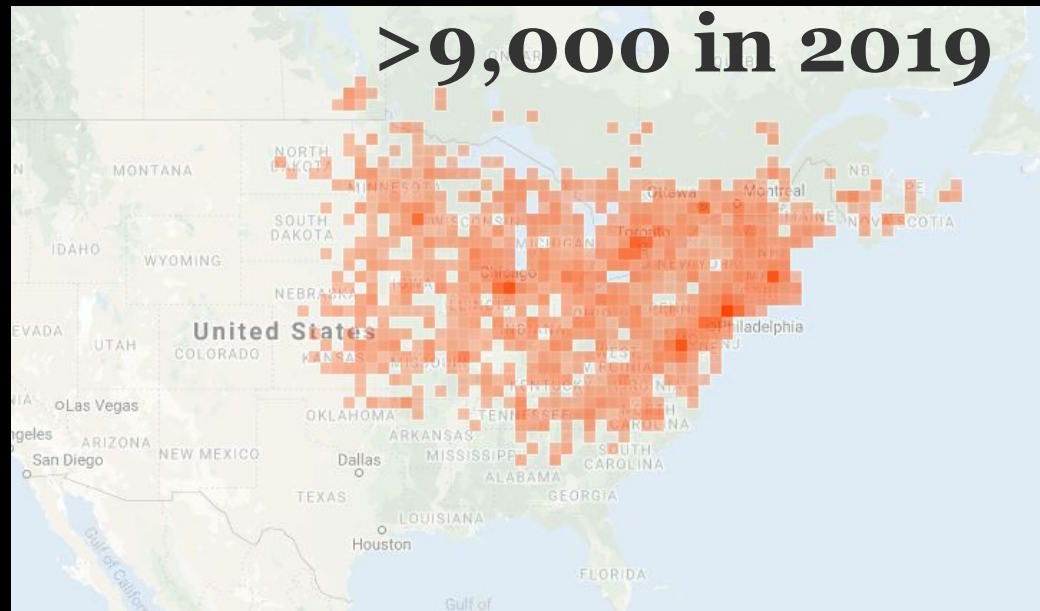


Preserved specimens since 1822 (GBIF):



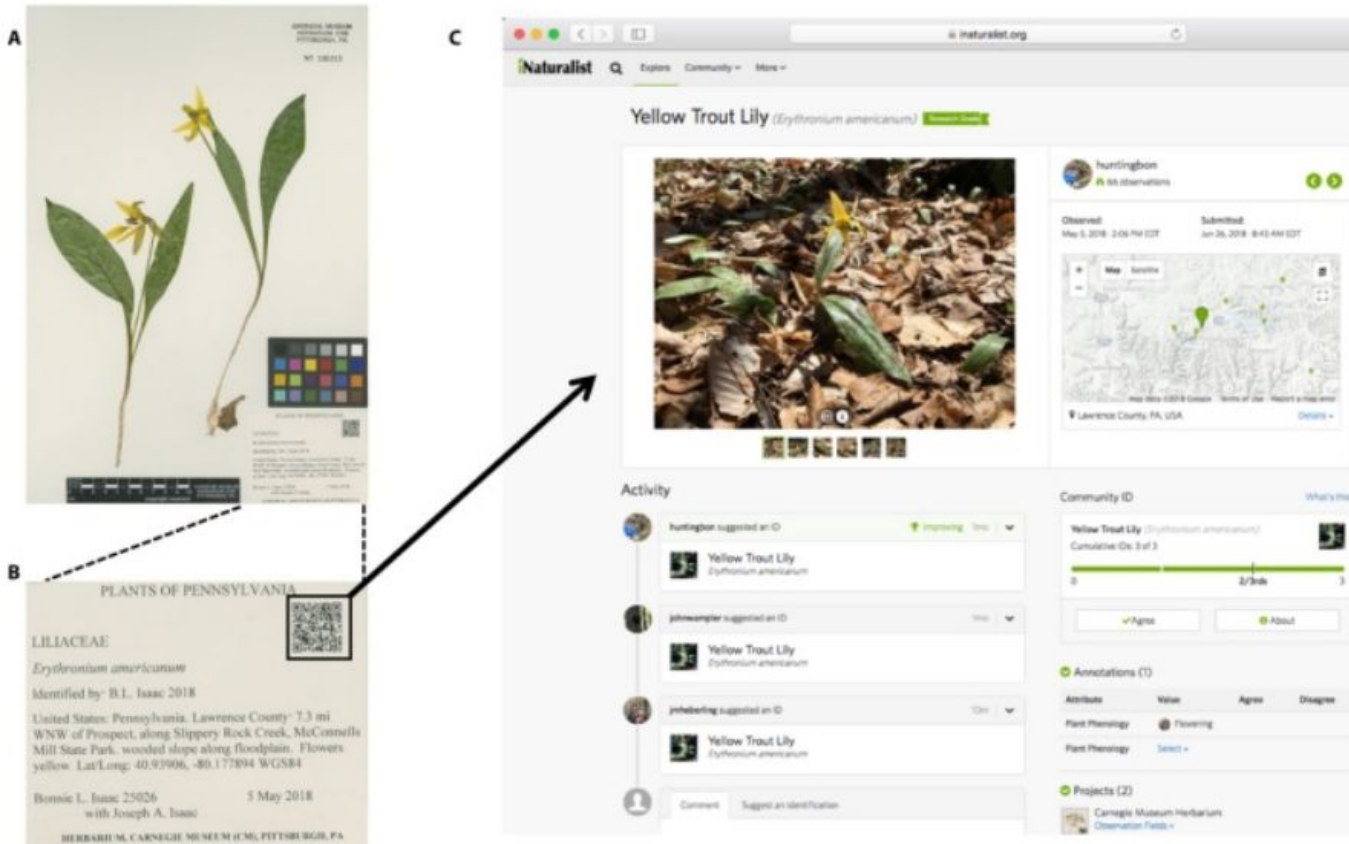
Observations on iNaturalist:

>9,000 in 2019





# In conjunction with specimens



Heberline & Isaac 2018 "iNaturalist as a tool to expand the research value of museum specimens"

# Range expansions

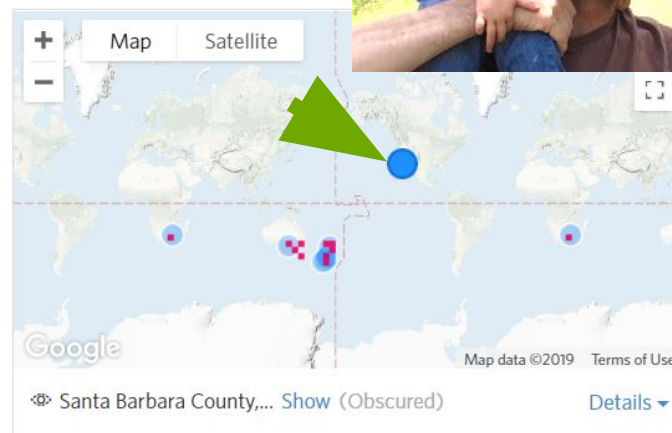


tomleeturner

🌿 1,384 observations

Observed:

Feb 19, 2019 · 5:17 PM PST



★ bouteloua, wimvdam faved this observation

Ralph Foster, Ichthyology Section, South Australian Museum



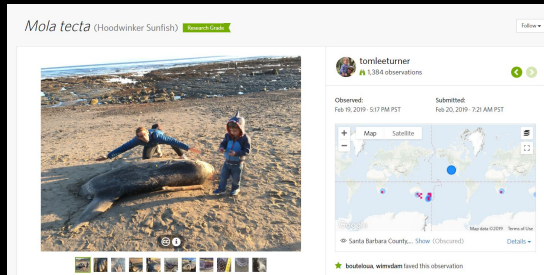
*Mola tecta*  
Hoodwinker Sunfish

I'm going out on a limb... @mnyegaard your input required here





# Range expansions



**Marianne Nyegaard**, PhD student studying mola in Australia

18h



HOLY MOLA!!!! @tomleturner you are a superstar and @rfoster I am sooo excited to join you out on your brave and well-picked hoodwinker limb!!!! OMG!!!! And ps, for the record, the scales are text-book *Mola tecta* so pls ignore my previous comments!!

Since this is such an incredible find - *Mola tecta* well out of its expected range - here are the characteristics that clearly and without any doubt reveal the species identity. The images here are excellent and very clearly show the telltale clavus band back-fold of *Mola tecta*, as well as the rounded scales (denticles) set further apart than for *Mola mola*. The body shape is typical for the species with the widest point across the eyes, and without the long, bulging lateral "keels" on the body typical of similar sized *Mola alexandrini* and *Mola mola*; instead- the dorso-lateral keel (= "eye brow") is very short. In addition Thomas Turner examined the clavus directly and reported 3, maybe 4, ossicles on the dorsal side of the back-fold and 2 on the ventral side, but noted that there was some damage on the ventral side of the clavus margin where the next couple of ossicles would have been expected to be. This low number of ossicles for such a large fish is a key characteristic for this species.



# Range expansions

*Dendronotus orientalis* !

Research Grade

Follow ▾



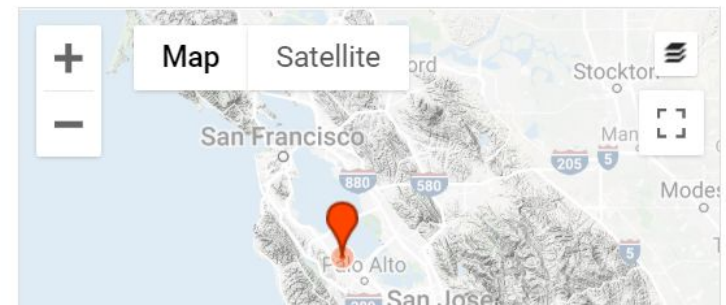
anudibranchmom

26,216 observations



Observed:  
Mar 29, 2016

Submitted:  
Mar 29, 2016 · 6:55 PM PDT



## First record of *Dendronotus orientalis* (Baba, 1932) (Nudibranchia: Dendronotidae) in the temperate Eastern Pacific

Marisa Agarwal

500 Discovery Parkway, Redwood City, CA 94063, USA

E-mail: [marisaagarwal@gmail.com](mailto:marisaagarwal@gmail.com)

Received: 5 August 2016 / Accepted: 10 January 2017 / Published online: 7 February 2017

Handling editor: Fabio Crocetta

### Abstract

This study reports the first record of the Indo-West Pacific nudibranch *Dendronotus orientalis* (Baba, 1932) in the Northeastern Pacific Ocean. A reproducing population was discovered in fouling communities on floating docks in South San Francisco Bay, California, in March 2016. *Dendronotus orientalis* joins a large number of introduced marine invertebrates that have taken up residence in San Francisco Bay.

**Key words:** introduced, nudibranch, San Francisco Bay, citizen science



# New invasive species

*Arum italicum* (Italian Arum) Research Grade

Follow



susanhewitt

24,537 observations

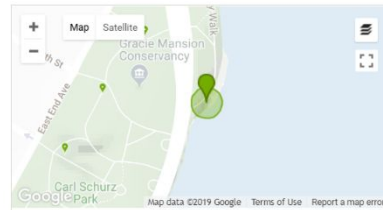


Observed:

Mar 2, 2017 - 12:18 PM EST

Submitted:

Mar 2, 2017 - 1:18 PM EST



Carl Schurz Park, New York County... Show

Details

★ Be the first to favorite this observation!

Atha, D., B. Boom, A. Thornbrough, J. Kurtz, L. McIntyre, M. Hagen, J.A. Schuler, L. Rohleder, S.J. Hewitt, and J. Kelly. 2017. *Arum italicum* (Araceae) is invasive in New York. *Phytoneuron* 2017-31: 1-18. Published 28 April 2017. ISSN 2153 733X

## ARUM ITALICUM (ARACEAE) IS INVASIVE IN NEW YORK

**DANIEL ATHA, BRIAN BOOM**

Center for Conservation Strategy  
New York Botanical Garden  
2900 Southern Blvd.  
Bronx, New York 10458  
datha@nybg.org

**ADAM THORNBROUGH, JOSEPH KURTZ, LESLIE MCINTYRE**

Forestry, Horticulture, & Natural Resources  
New York City Department of Parks and Recreation  
Baby Queensbridge Park  
10th Street & Queens Plaza South  
Long Island City, New York 11101

**MICHAEL HAGEN, JESSICA A. SCHULER**

Horticulture  
New York Botanical Garden  
2900 Southern Blvd.  
Bronx, New York 10458

**LINDA ROHLEDER**

Lower Hudson Partnership for Regional Invasive Species Management  
New York New Jersey Trail Conference  
600 Ramapo Valley Road  
Mahwah, New Jersey 07430

**SUSAN J. HEWITT**

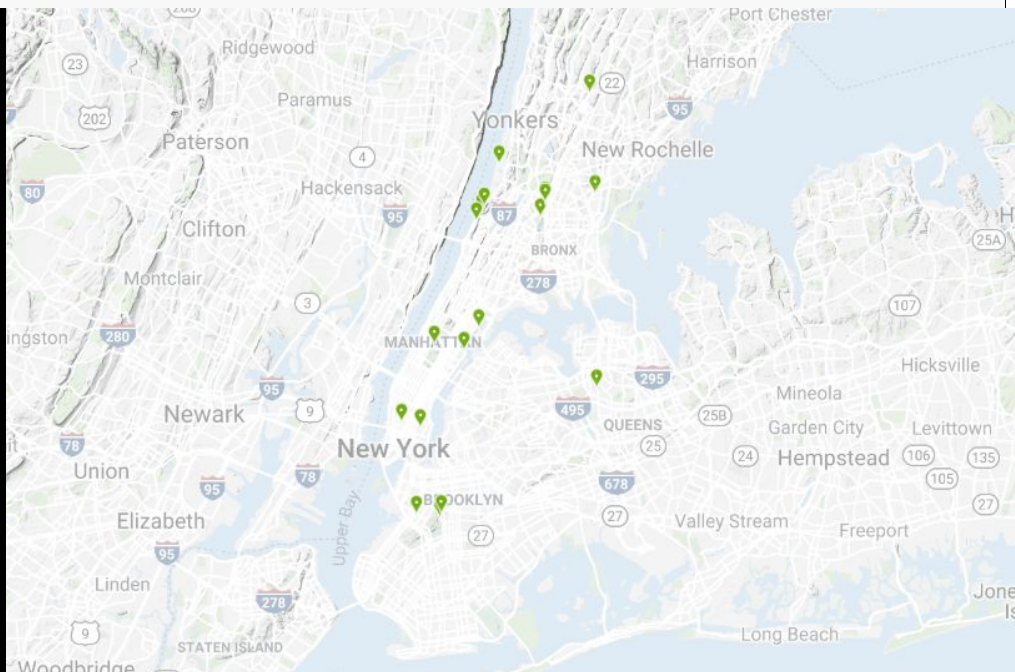
Citizen Scientist, malacologist and iNaturalist observer  
435 East 77th Street, Apt 3G  
New York, New York 10075

**JOHN KELLY**

Landscape Coordinator  
Northern Manhattan Parks  
New York City Department of Parks and Recreation

### ABSTRACT

Spontaneous populations of *Arum italicum* (Italian Lords and Ladies) are documented from Bronx and New York counties in southeastern New York state. Three populations are documented from New York Co. (Manhattan): Inwood Hill Park with dozens of discrete clusters in an area of 2500 square meters of mostly spontaneous deciduous forest; Fort Tryon Park with dozens of discrete clusters in an area of 20,000 square meters of cultivated garden beds; and the Upper East Side of Manhattan, near Carl Schurz Park and the FDR Drive, with four discrete clusters in an area of about 60 square meters of open, highly disturbed, currently fallow ground. The Bronx Co. population, in the New York Botanical Garden, consists of two discrete clusters in an area of about 6 square meters of mostly native, deciduous forest. Each cluster consists of a few to dozens of plants. The Inwood, Fort Tryon, and NYBG populations are documented with herbarium specimens and DNA samples and the Carl Schurz population is documented by photographs in iNaturalist. Original observations on invasiveness, toxicity, control, management, and native alternatives are presented. The New York reports are new state records for the species. This report is an example of the developing and highly collaborative process of Early Detection and Rapid Response (EDRR) to invasive species, involving many individuals, both professional and private, contributing key elements in a short period of time.



# Totally new species

*Andinobates cassidyhornae* Research Grade



[Zootaxa](#), 2013;3620:163-78.

## A new species of Andean poison frog, *Andinobates* (Anura: Dendrobatidae), from the northwestern Andes of Colombia.

[Amézquita A](#)<sup>1</sup>, [Márquez R](#), [Medina R](#), [Mejía-Vargas D](#), [Kahn TR](#), [Suárez G](#), [Mazariegos L](#).

[+](#) Author information

### Abstract

The poison frogs of the Colombian Andes, Pacific lowlands and Panama have been recently recognized as a new, monophyletic and well-supported genus: *Andinobates*. The species richness and distribution within *Andinobates* remain poorly understood due to the paucity of geographic, genetic and phenotypic data. Here we use a combination of molecular, bioacoustic and morphometric evidence to describe a new species of Andean poison frog: *Andinobates cassidyhornae* sp. nov. from the high elevation cloud forests of the Colombian Cordillera Occidental, in the northwestern Andes. The new species is associated to the bombetes group and characterized by a unique combination of ventral and dorsal color patterns. Data on 1119 bp from two mitochondrial markers allowed us to reject the null hypotheses that *A. cassidyhornae* sp. nov. is part of the phenotypically similar and



# New species

*Scorpiurus aramoana* ★

Needs ID

Follow ▾



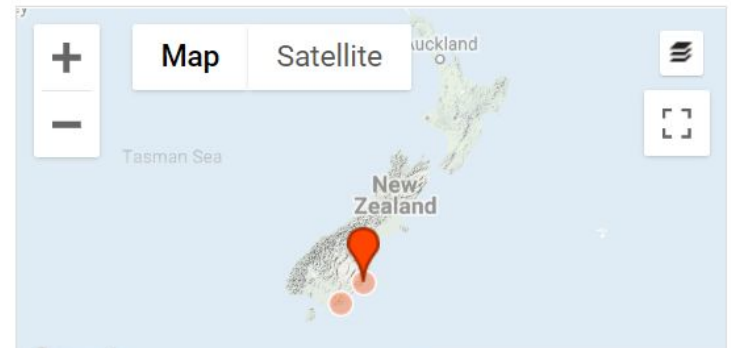
steve\_kerr

👤 4,977 observations



Observed:  
Dec 18, 2015

Submitted:  
Dec 19, 2015 · 1:03 PM NZDT



🔗 Terms of Use

Details ▾

## *Scorpiurus aramoana* (Diptera: Dolichopodidae), a new species from New Zealand

DANIEL J. BICKEL, DOUGLAS STEVEN KERR

### Abstract

The New Zealand endemic genus *Scorpiurus* Parent is known from marine littoral habitats. A new species, *S. aramoana* sp. nov., is described from coastal Otago of the South Island. Males have diagnostic flattened and modified tarsomeres on legs I and II. A key is provided to the New Zealand genera of Hydrophorinae and the three described species of *Scorpiurus*.

# Research projects



- *Physcomitrium* mosses
- Rafael Medina at Augustana College
- Find, report, and send samples
- Studying genome duplication in plant evolution



# Research



**4% shed**

June 22, 2017

Clear Creek County, CO



**17% shed**

June 30, 2016

Glacier NP, MO



**4% shed**

July 11, 2013

Clear Creek County, CO



**21% shed**

July 15, 2013

Glacier NP, MO



**20% shed**

July 19, 2014

Columbia-Shuswap, B.C.



**81% shed**

July 30, 2010

Glacier NP, MO



**85% shed**

August 4, 2016

Mt. Timpanogos, UT



**21% shed**

August 5, 2015

Summit County, CO



Mountain goats and climate change

# Rarely observed behavior



Joshua Flatt

Alligator lizard  
breeding



David Marx



# Land management



Tracking invasive birdsfoot trefoil at Poplar Creek in Cook County, IL

# Monitoring rare populations

Swink's St. John's Wort (*Hypericum swinkianum*) NT Research Grade



bouteloua

🏠 15,672 observations

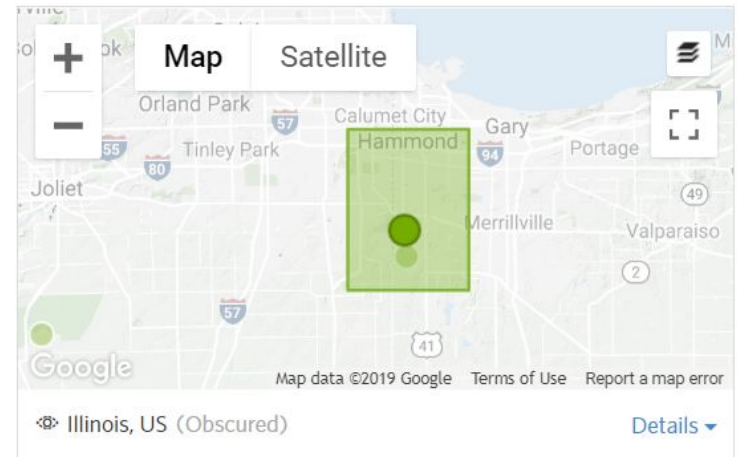


Observed:

Jul 22, 2017 · 5:15 PM CDT

Submitted:

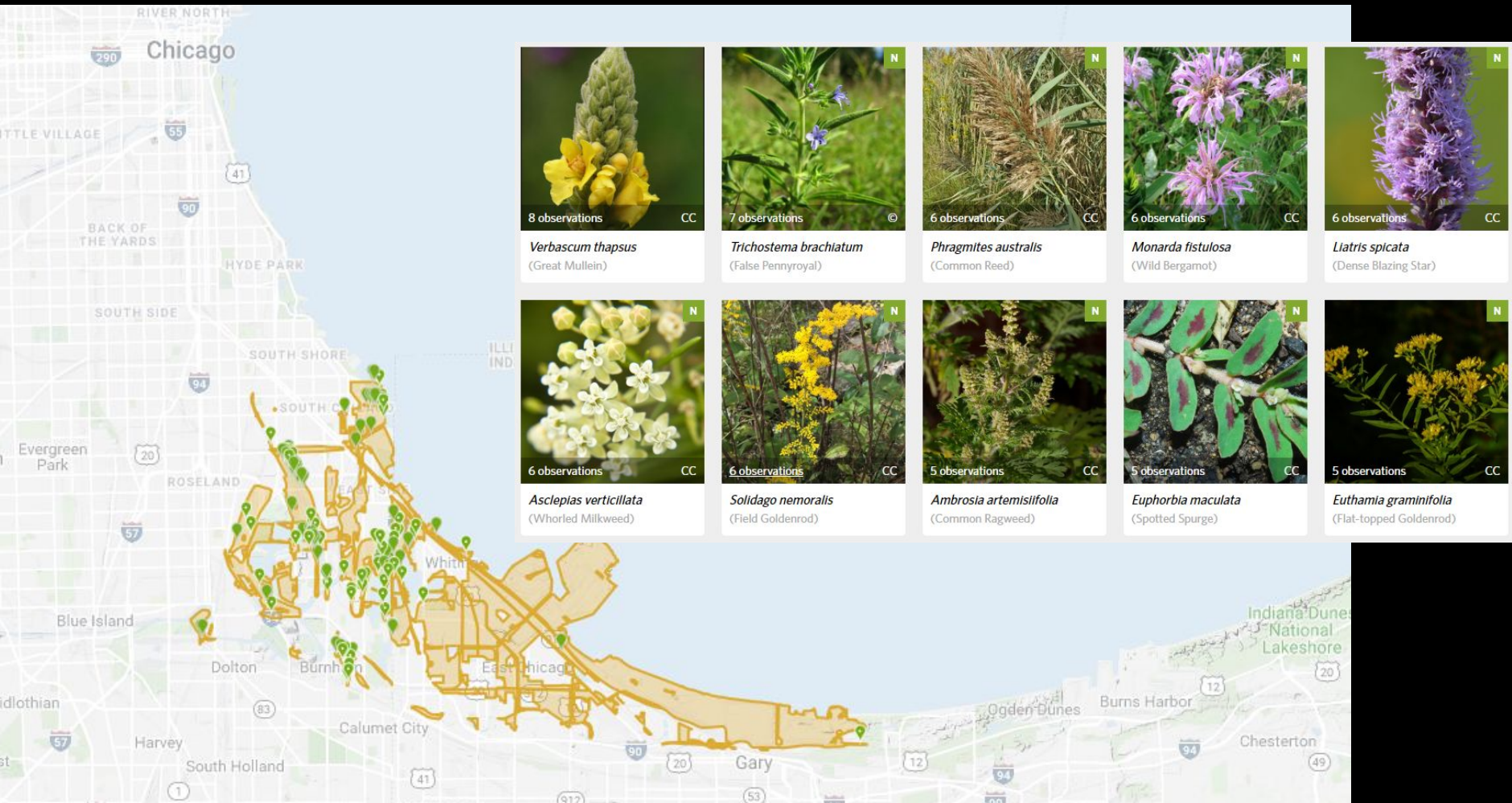
Aug 3, 2017 · 7:37 PM CDT





# Upload your own place boundaries

## Flora of the Cal Slag



# Tool for other data collection

Genus *Osmia* (Mason Bees)



**martinlucas**

🏠 944 observations

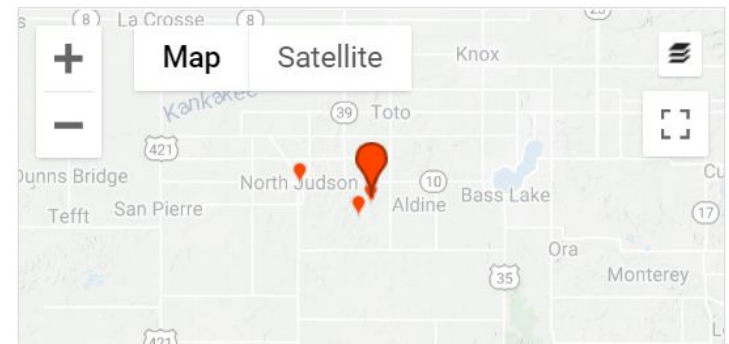


**Observed:**

Jun 1, 2017 · 5:13 PM CDT

**Submitted:**

Feb 2, 2019 · 9:53 AM CST



## Observation Fields:

**Animal behavior:** collecting nest material

**Name of Associated Plant:** *Potentilla simplex* (Common Cinquefoil)




# Download data

## Export Observations

### 1 Create a Query















Create an observation query just like you would elsewhere on the site. You can also cut and paste an observations URL from another part of the site. You must specify a **taxon**, **place**, **user**, **project**, or **search query**.

Choose query parameters below or paste in an observations URL


Search   search all fields ▾

Filter  w/ photos  w/ sounds  Out of range **Quality grade**  Any  Research  Needs ID **Reviewed**  Any  Yes  No

**Identifications**  any  most agree  some agree  most disagree **Captive / Cultivated**  Any  Yes  No

Show only                             Select All, None

Place  Start typing place name... ▾ SW Lat.  SW Lon.  NE Lat.  NE Lon.  clear

Taxon   Start typing taxon name... **Observed on** Day ▾ Month ▾ Year ▾

Exact Rank Any ▾ Highest Rank Any ▾ Lowest Rank Any ▾

User  clear  
Username or User ID

Project  clear  
Project ID or URL slug, e.g. 333 or my-project

Taxon IDs  clear  
Multiple taxon IDs separated by commas, e.g. 123,654

Date Range Start  End  clear  
Max and min dates observed in YYYY-MM-DD format, e.g. 2015-01-17

Created on  clear

# Taxon page

*Danaus plexippus* (Monarch)

Filter by Place

Native to United States



### TOP OBSERVER



**lauraelviauribelara**

Leaderboard 632

### TOP IDENTIFIER



**aguilita**

Leaderboard 6,703

### LAST OBSERVATION



**February 17, 2019**

View Observation

### TOTAL OBSERVATIONS



**41,879**

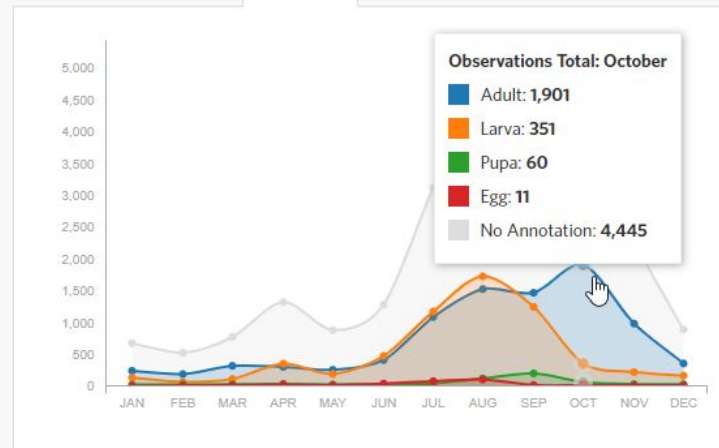
View All

View Yours

Seasonality

History

Life Stage



Map

About

Taxonomy

Status

Similar Species

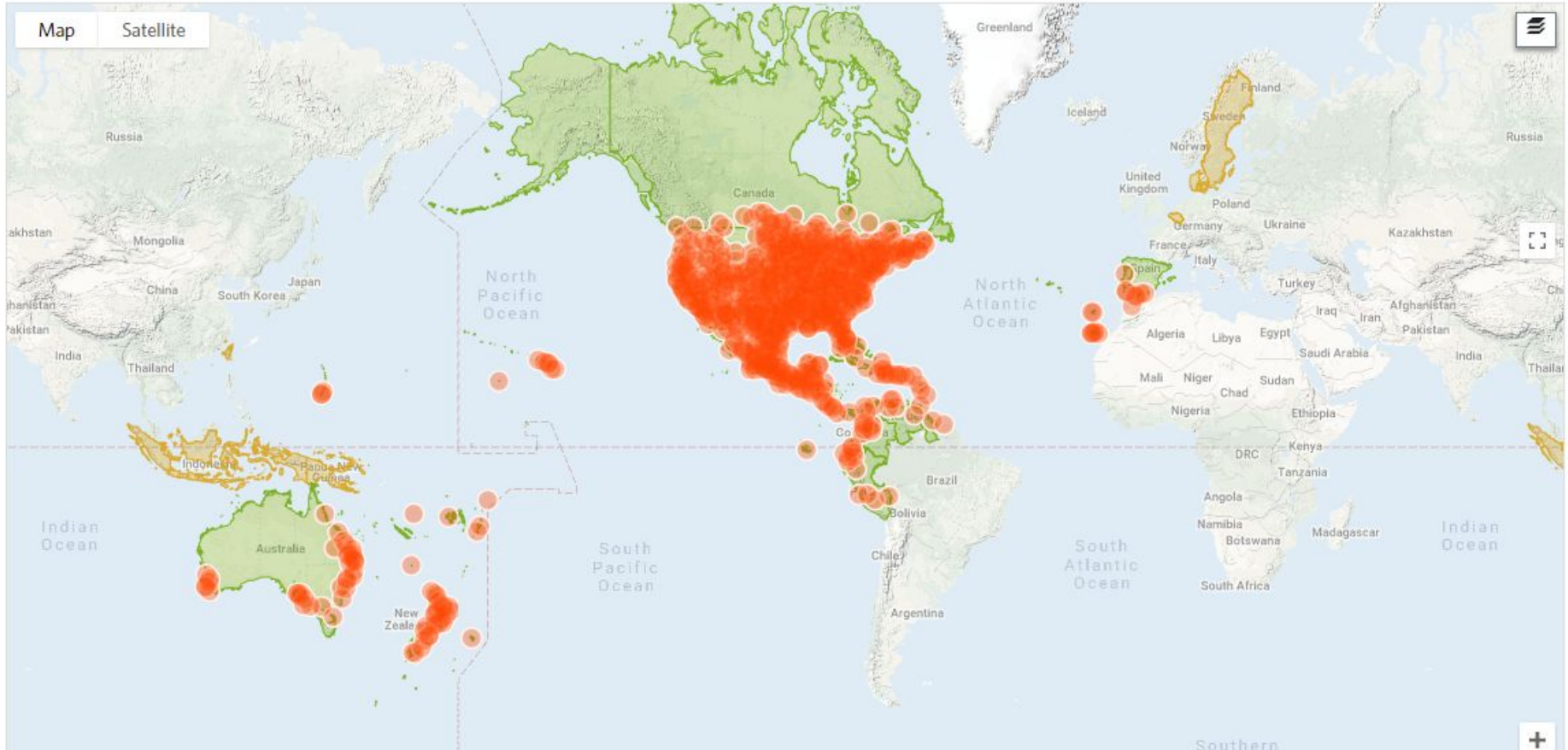
Curation





# Range Maps

## *Danaus plexippus* (monarch)





# Taxonomy & Names

## *Danaus plexippus* (monarch)

### Taxonomy

- ↳ Kingdom Animalia (Animals)
  - ↳ Phylum Arthropoda (Arthropods)
    - ↳ Subphylum Hexapoda (Hexapods)
      - ↳ Class Insecta (Insects)
        - ↳ Subclass Pterygota (Winged and Once-winged Insects)
          - ↳ Order Lepidoptera (Butterflies and Moths)
            - ↳ Superfamily Papilionoidea (Butterflies)
              - ↳ Family Nymphalidae (Brush-footed Butterflies)
                - ↳ Subfamily Danainae (Milkweed Butterflies)
                  - ↳ Tribe Danaini
                    - ↳ Subtribe Danaina
                      - ↳ Genus *Danaus* (Tiger Milkweed Butterflies)
                        - ↳ *Danaus plexippus* (Monarch)
                          - ↳ *Danaus plexippus* ssp. *plexippus*
                          - ↳ *Danaus plexippus* ssp. *portoricensis*

### Names

| Language / Type       | Name              |
|-----------------------|-------------------|
| Chinese (traditional) | 帝王斑蝶              |
| Danish                | Monark            |
| Dutch                 | Monarchvlinder    |
| English               | Monarch           |
| English               | Monarch Butterfly |
| English               | Wanderer          |
| French                | Monarque          |
| German                | Monarchfalter     |
| Italiano              | Monarca           |
| Japanese              | オオカバマダラ           |
| Portuguese            | Borboleta-monarca |





# Similar species

## *Danaus plexippus* (monarch)

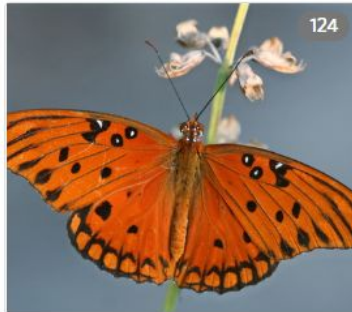
Other species commonly misidentified as this species



*Limenitis archippus*  
Viceroy



*Danaus gilippus*  
Queen



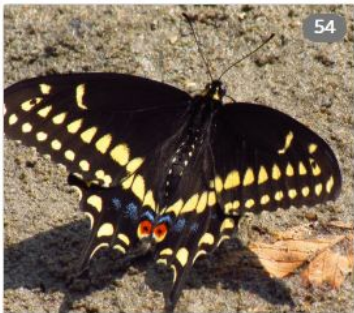
*Agraulis vanillae*  
Gulf Fritillary



*Danaus erippus*  
Southern Monarch



*Vanessa cardui*  
Painted Lady



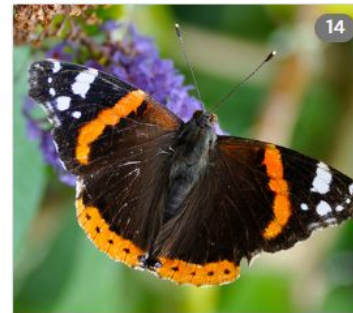
*Papilio polyxenes*  
Black Swallowtail



*Vanessa virginiensis*  
American Lady



*Papilio glaucus*  
Eastern Tiger Swa...



*Vanessa atalanta*  
Red Admiral



*Danaus eresimus*  
Soldier

# Photo source (check copyright)

Photos of Yellow Lady's Slipper (*Cypripedium parviflorum*)

Filter by Place



Grouping: None

Plant Phenology: Any

Order by: Faves

Photo Licensing: Any

Quality Grade: Any

Any

Attribution

Attribution-NoDerivs

Attribution-NonCommercial

Attribution-NonCommercial-NoDerivs

Attribution-NonCommercial-ShareAlike

Attribution-ShareAlike

No Copyright (CC0)





# Photos

## Black Swallowtail (*Papilio polyxenes*) Research Grade



bouteloua

👤 15,671 observations

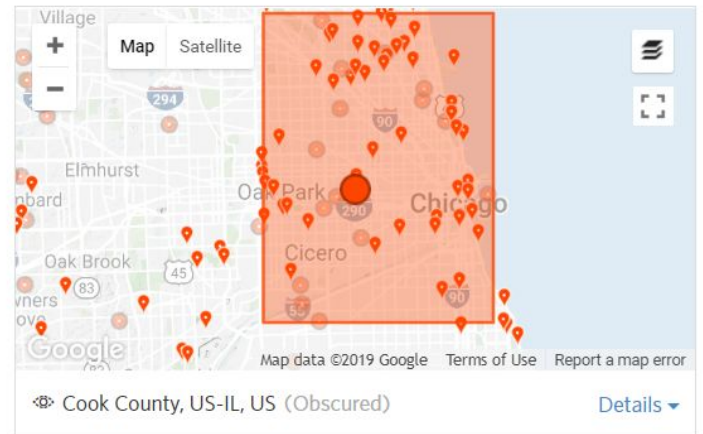


Observed:

Jul 15, 2018 · 6:30 PM CDT

Submitted:

Jul 15, 2018 · 7:35 PM CDT



# Sounds

*Neotibicen pruinosus* (Scissors Grinder Cicada) Needs ID

Edit



bouteloua

15,671 observations

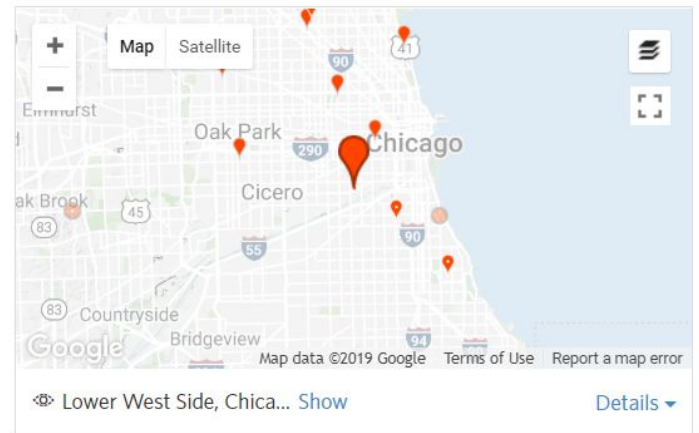


Observed:

Aug 27, 2018 - 7:43 PM CDT

Submitted:

Aug 27, 2018 - 7:55 PM CDT



☆ Be the first to fave this observation!

0:03 / 0:09





No video yet



# GIFs

*Tamias striatus* (Eastern Chipmunk)

Research Grade

Edit



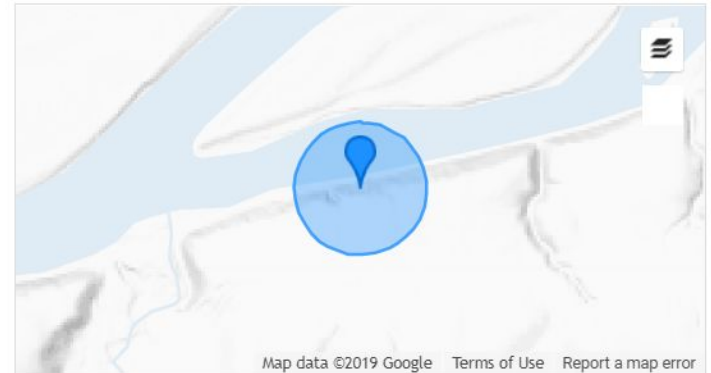
bouteloua

15,671 observations



Observed:  
Aug 24, 2013

Submitted:  
Mar 12, 2018 · 12:40 PM CDT



Map data ©2019 Google Terms of Use Report a map error

Hoover Forest Preserve

Details

☆ sambiology, charlie, and 4 others faved this observation



# No media at all

*Perisoreus canadensis* (Canada Jay) Casual

Edit

  
No Photo



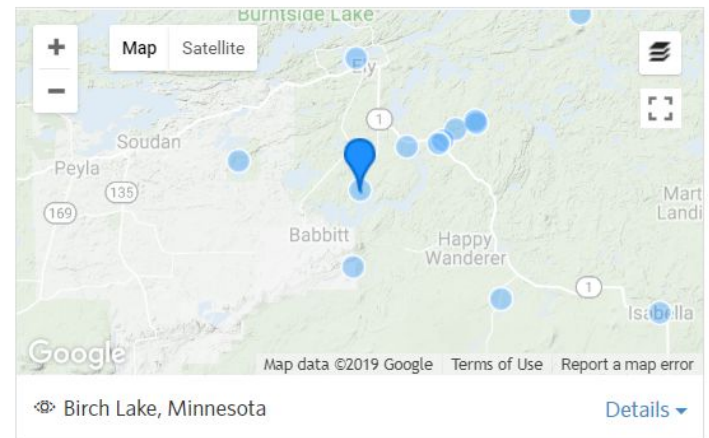
bouteloua

15,671 observations



Observed:  
Nov 22, 2012

Submitted:  
Apr 2, 2014 · 12:29 PM CDT



☆ Be the first to fave this observation!



# Evidence of organisms



*Cistothorus palustris* (Marsh Wren) Research Grade

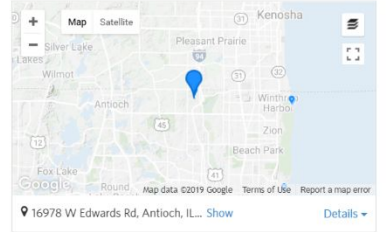
Edit

bouteloua  
15,642 observations

Observed:  
Jun 15, 2018 · 11:02 AM CDT

Submitted:  
Jun 15, 2018 · 5:39 PM CDT

0:06 / 0:21

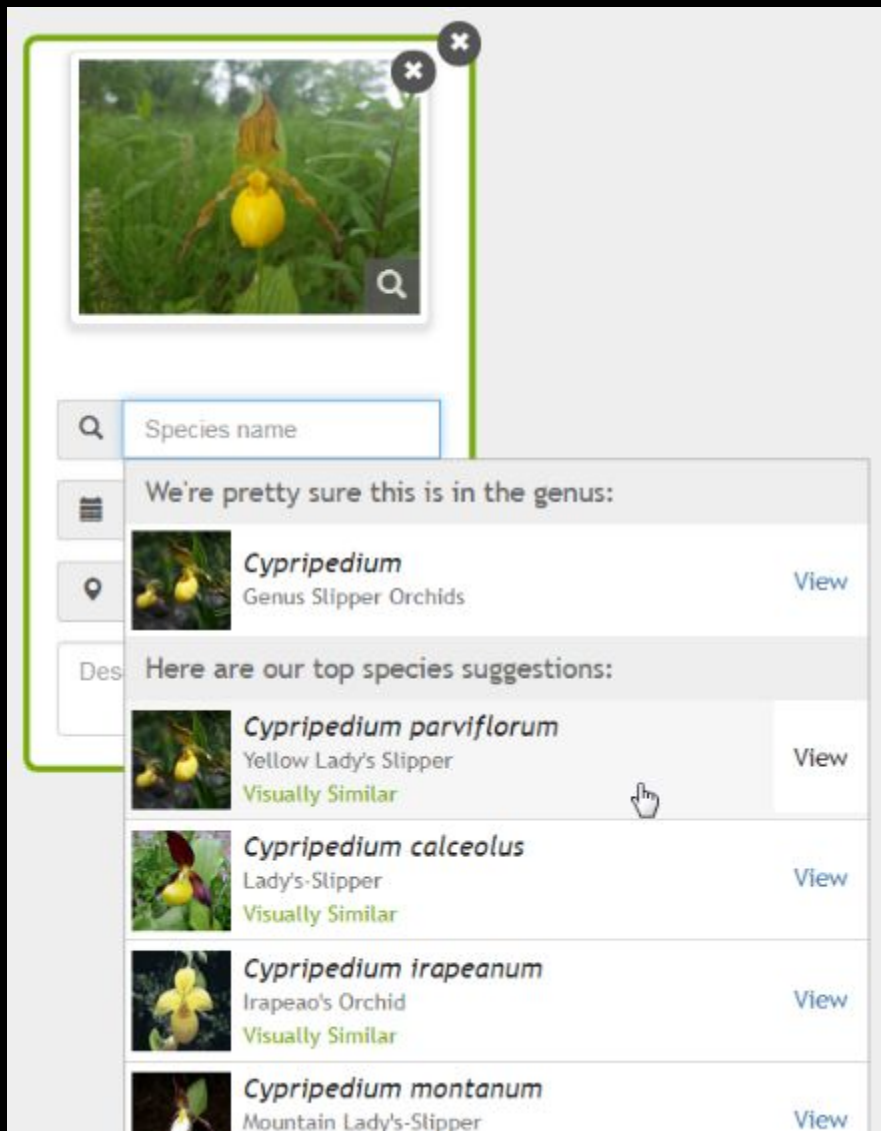


Be the first to favorite this observation!






# Automated species identification




This screenshot shows the identification interface for a yellow lady's slipper orchid. At the top, there is a photo of the flower with a magnifying glass icon in the bottom right corner. Below the photo is a search bar labeled "Species name". Underneath the search bar, a message reads "We're pretty sure this is in the genus:". Below this message, there is a list of suggestions. The first suggestion is "Cypripedium", with a small thumbnail image of the flower, the text "Genus Slipper Orchids", and a "View" link. Below this, a section titled "Here are our top species suggestions:" lists four species: "Cypripedium parviflorum" (Yellow Lady's Slipper), "Cypripedium calceolus" (Lady's-Slipper), "Cypripedium irapeanum" (Irapeao's Orchid), and "Cypripedium montanum" (Mountain Lady's-Slipper). Each species entry includes a small thumbnail image, the species name, a common name, a "Visually Similar" label, and a "View" link. A mouse cursor is hovering over the "Visually Similar" label for "Cypripedium parviflorum".


Species name


We're pretty sure this is in the genus:


 **Cypripedium**  
Genus Slipper Orchids [View](#)

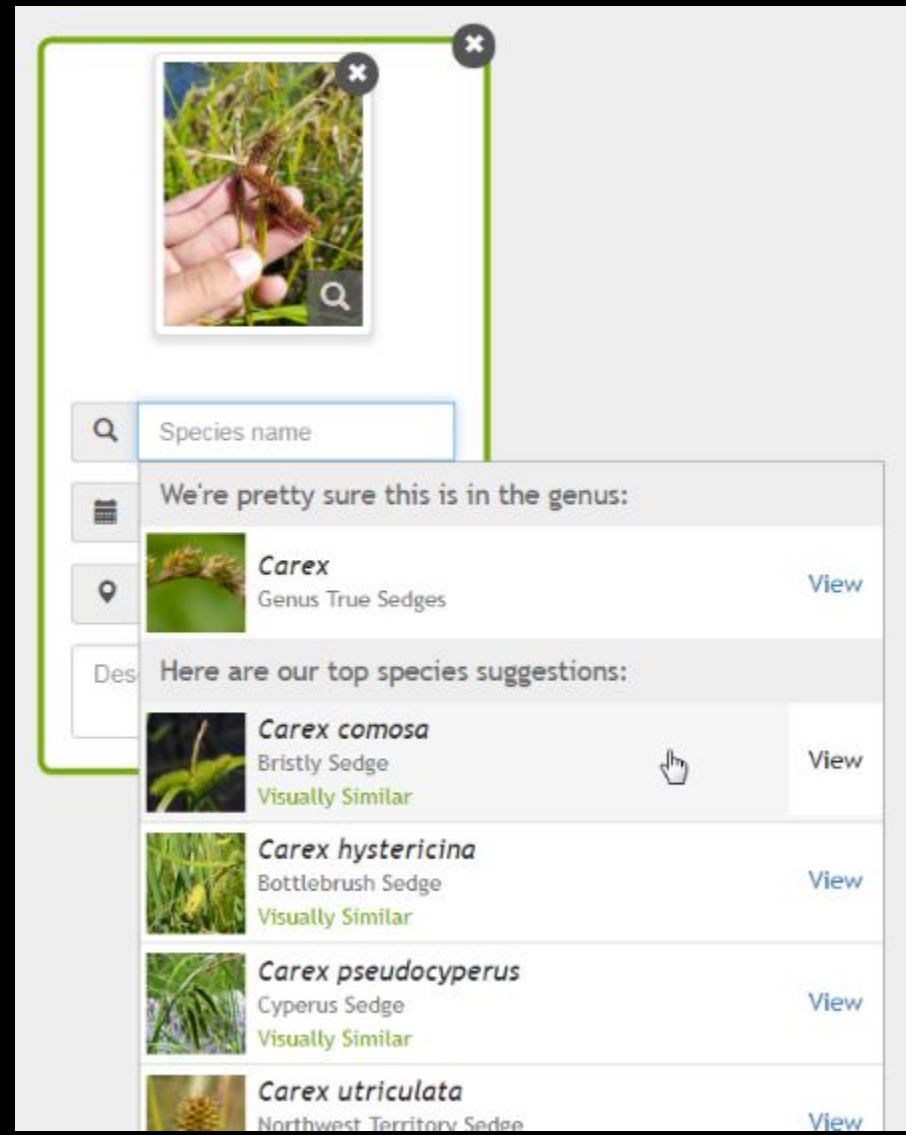
Des Here are our top species suggestions:

 **Cypripedium parviflorum**  
Yellow Lady's Slipper  
Visually Similar [View](#)

 **Cypripedium calceolus**  
Lady's-Slipper  
Visually Similar [View](#)

 **Cypripedium irapeanum**  
Irapeao's Orchid  
Visually Similar [View](#)


 **Cypripedium montanum**  
Mountain Lady's-Slipper [View](#)




This screenshot shows the identification interface for a sedge. At the top, there is a photo of a sedge being held in a hand, with a magnifying glass icon in the bottom right corner. Below the photo is a search bar labeled "Species name". Underneath the search bar, a message reads "We're pretty sure this is in the genus:". Below this message, there is a list of suggestions. The first suggestion is "Carex", with a small thumbnail image of a sedge, the text "Genus True Sedges", and a "View" link. Below this, a section titled "Here are our top species suggestions:" lists five species: "Carex comosa" (Bristly Sedge), "Carex hystericina" (Bottlebrush Sedge), "Carex pseudocyperus" (Cyperus Sedge), and "Carex utriculata" (Northwest Territory Sedge). Each species entry includes a small thumbnail image, the species name, a common name, a "Visually Similar" label, and a "View" link. A mouse cursor is hovering over the "Visually Similar" label for "Carex comosa".


Species name


We're pretty sure this is in the genus:


 **Carex**  
Genus True Sedges [View](#)

Des Here are our top species suggestions:

 **Carex comosa**  
Bristly Sedge  
Visually Similar [View](#)

 **Carex hystericina**  
Bottlebrush Sedge  
Visually Similar [View](#)

 **Carex pseudocyperus**  
Cyperus Sedge  
Visually Similar [View](#)

 **Carex utriculata**  
Northwest Territory Sedge [View](#)



# Taking identifiable photos

- Use your hands
- Try different angles/features
- Scale figure
- Use macro mode
- Crop



# Identifying Sedges

## Reproductive Parts

Plants that are still in flower are often not identifiable to species.

Are the male and female parts on separate spikes or together?

Photograph the individual fruits (perigynia), preferably with something for scale



together

separate

*Carex sartwellii* has a blackened stem base



*Carex stricta* has fibrous leaf sheaths



*Carex woodii* has dark red stems



## Habit & Habitat

Clumping or creeping?  
Wet or dry?

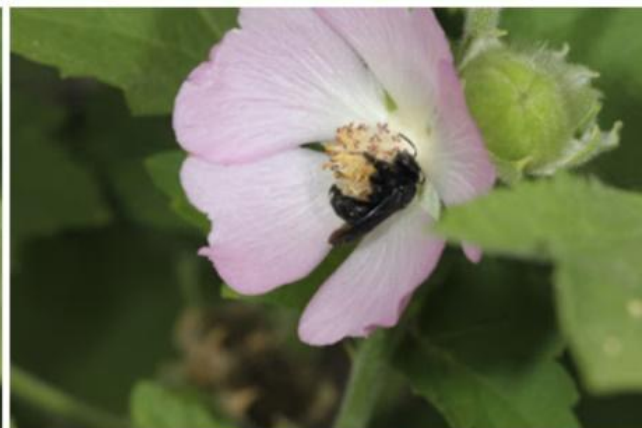
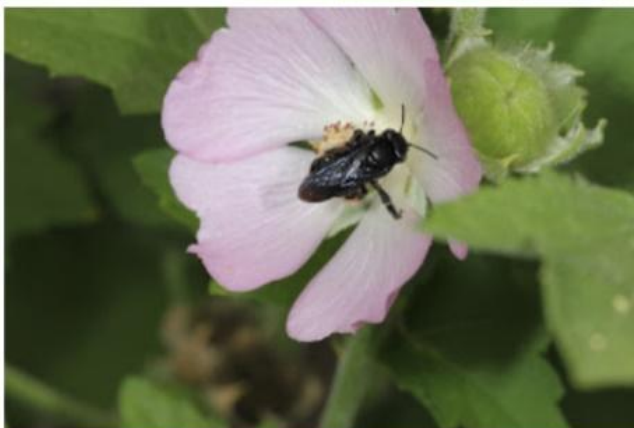


## Vegetative Parts

Are any parts of it hairy?  
How broad are the leaves?  
What color is the base of the stem?  
What does the sheath (where the leaf meets the stem) look like?



Take a lot of photos



# Create an Observation from App

The screenshot shows the 'Details' page of an observation in the iNaturalist app. At the top, there's a status bar with the time 17:18. Below it, a navigation bar contains a back arrow, the title 'Details', a checkmark, and a menu icon. The main content area is divided into sections: 1. Photos: A camera icon with a plus sign and a photo of a bird. A green dashed box highlights the text: "You can add multiple photos (just one species per observation though)". Below the photo is a green checkmark and the text "1st". 2. Identification: A question mark icon and the text "What did you see? View Suggestions". A green dashed box highlights the text: "Add your identification here, even if it's just 'plant' or 'bird'". 3. Notes: A clipboard icon and the text "Notes". 4. Date and Time: A clock icon, "Apr 24, 2018", and "5:16 PM CDT". 5. Location: A location pin icon, "10729 Pine Rd, Leland, IL 60531, USA", and coordinates "Lat: 41.67511904 Lon: -88.73759291 Acc: 12". A green dashed box highlights the text: "GPS accuracy is in meters, wait a few moments to try to keep below 15". 6. Location Status: A globe icon and the text "Location is Open". 7. Captive Status: A person icon and the text "It is captive or cultivated" with an unchecked checkbox.

## Add an Observation:

1. Click (+) on Android or camera icon on iPhone
2. Add one or more photos as evidence
3. **When** you saw it is added automatically
4. **Where** you saw it is added automatically
5. Enter **what** you saw, choose a Computer Vision suggestion, or leave it blank
6. Save: ✓ on Android, "save" on iPhone
7. Upload (now or later)
8. Check [iNaturalist.org](https://www.inaturalist.org) later for activity on your observations



# Create an Observation from Computer

iNaturalist

+ Add ▾

✕ Remove

✂ Combine

☑ Select all

Photos or sounds

Observation without media

Drag & drop some photos or sounds

or

Choose files ↕

More import options ▾



iNaturalist

Hodgkins, IL, USA



Map

Satellite

Theodore Stone Forest, Hodgkins, IL, U



Latitude

41.7717357

Longitude

-87.8655421

Accuracy (meters)

46.3883079

Locality notes

Hodgkins, IL, USA



iNaturalist



# App vs. Website

## I use the app to...

- Make observations
- View observations near me while traveling

## I use the website to...

do everything else

- Upload observations from camera
- Add/refine identifications
- Add IDs, comment, fave other users' observations
- Create and manage projects
- Write journal and project posts
- View taxon pages
- View stats
- Find local or taxonomic experts
- Export data



# Explore Page Filters

The screenshot shows the iNaturalist Explore page for *Dalea candida* in 2018. At the top, there is a search bar with the text "Dalea candida" and a "Location" field. To the right of the search bar is a "Go" button and a "Filters" button with a notification badge showing "1". Below the search bar is a summary bar with four sections: "43 OBSERVATIONS" (highlighted in green), "1 SPECIES", "20 IDENTIFIERS", and "25 OBSERVERS". Below the summary bar is a map of Illinois with a location pin near Naperville. A detailed observation card for *Dalea candida* is shown, including a photo of the plant and a list of other observations. The observations list includes the following details:

| Observation ID | Location              | Date         | Grade          | Count | Time |
|----------------|-----------------------|--------------|----------------|-------|------|
| 1              | Sountowniine Rd,...   | Jul 23, 2018 | Research Grade | 1     | 7mo  |
| 2              | Theodore Stone For... | Jul 15, 2018 | Research Grade | 1     | 7mo  |
| 3              | Lake County, IL, U... | Jul 21, 2018 | Research Grade | 1     | 7mo  |
| 4              | Rainbow Beach Park... | Jul 19, 2018 | Research Grade | 2     | 7mo  |
| 5              | Markham, IL, USA      | Jul 20, 2018 | Research Grade | 1     | 7mo  |

[https://www.inaturalist.org/observations?place\\_id=35&taxon\\_id=81598&year=2018](https://www.inaturalist.org/observations?place_id=35&taxon_id=81598&year=2018)



# Help identify

## Identify



Sanguinaria canadensis

Illinois, US

Go

Filters 4

Reviewed



*Sanguinaria canadensis*  
Bloodroot

✓ Agree



*Sanguinaria canadensis*  
Bloodroot

✓ Agree



*Sanguinaria canadensis*  
Bloodroot

✓ Agree



*Sanguinaria canadensis*  
Bloodroot

✓ Agree



*Sanguinaria canadensis*  
Bloodroot

✓ Agree



*Sanguinaria canadensis*  
Bloodroot

✓ Agree



*Sanguinaria canadensis*  
Bloodroot

✓ Agree



*Sanguinaria canadensis*  
Bloodroot

✓ Agree



*Sanguinaria canadensis*  
Bloodroot

✓ Agree



*Sanguinaria canadensis*  
Bloodroot

✓ Agree



*Sanguinaria canadensis*  
Bloodroot

✓ Agree



*Sanguinaria canadensis*  
Bloodroot


✓ Agree

# Suggestions / Compare tool

Identify

*Dicentra canadensis*  
Squirrel Corn

Research Grade




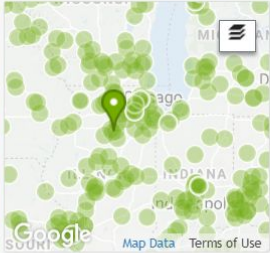


☆ Add to Favorites    Captive / Cultivated


Info   **Suggestions**   Annotations   Data Quality

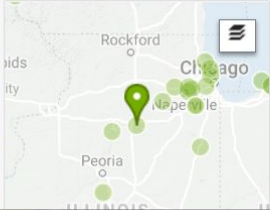


2 Suggestions Filtered By:   Sort By: Frequency ▾



Source: Observations ▾   Taxon: Genus *Dicentra* ▾   Place: LaSalle County, IL, US ▾


*Dicentra cucullaria* (Dutchman's Breeches) 





*Dicentra canadensis* (Squirrel Corn) 



 psweet suggested an ID  Improving 1mo ▾

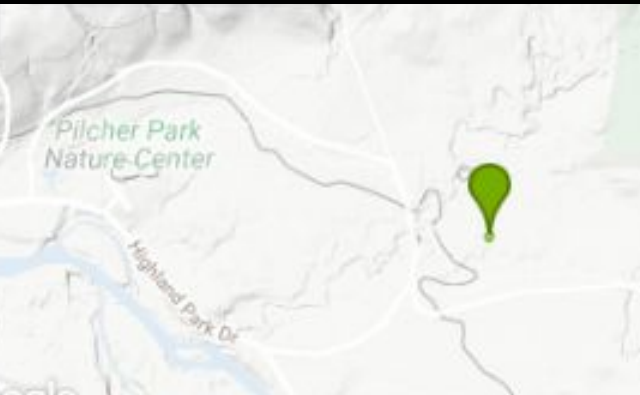
 *Dicentra canadensis*  
Squirrel Corn

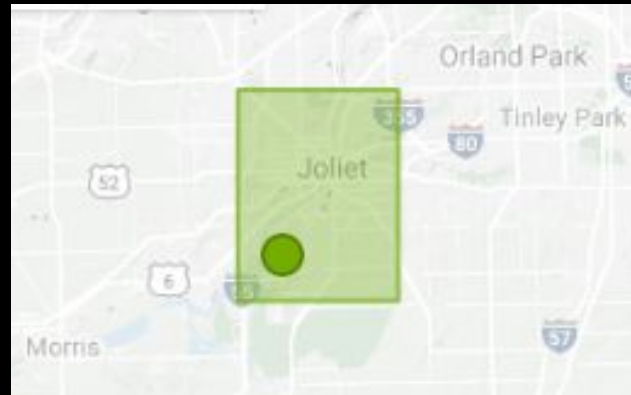


# Geoprivacy

- Location privacy
- Manual option - personal geoprivacy
- Automatic - taxon/species geoprivacy: “taxa that may be threatened by collection/harvesting or otherwise disturbed due to the public's knowledge of its location”

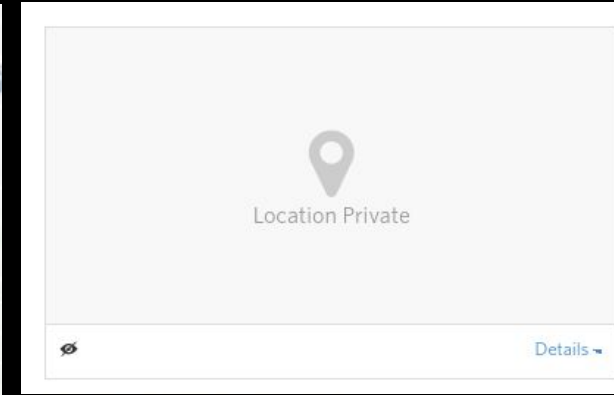


Open



Obscured

Random point within a  
0.2 x 0.2 degree rectangle  
(~150 square miles)



Private



# Species Geoprivacy

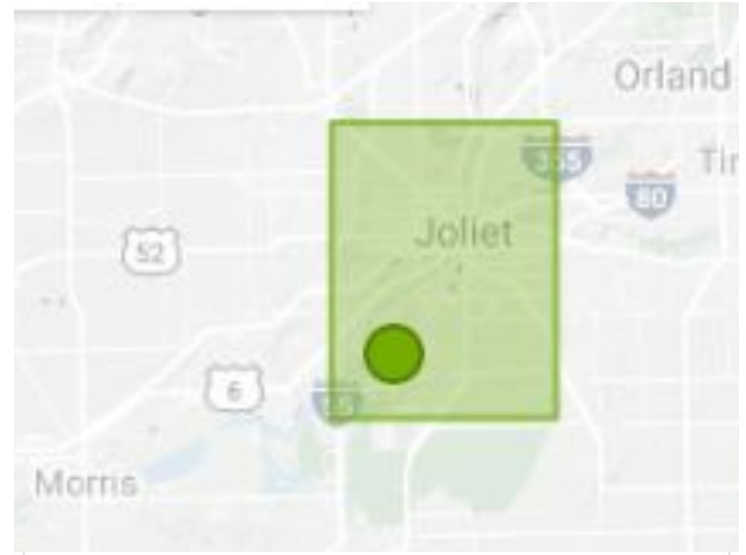
*“taxa that may be threatened by collection or harvesting or otherwise disturbed due to the public's knowledge of its location”*

*Allium tricoccum* var. *tricoccum* (Wide Leek) VU Research Grade



bouteloua

18,689 observations



# Species Geoprivacy

such as...

many orchids and other rare, showy plants

many species of reptiles and amphibians

wild leeks in the Chicago area



Ornate box turtle by Bryan Box

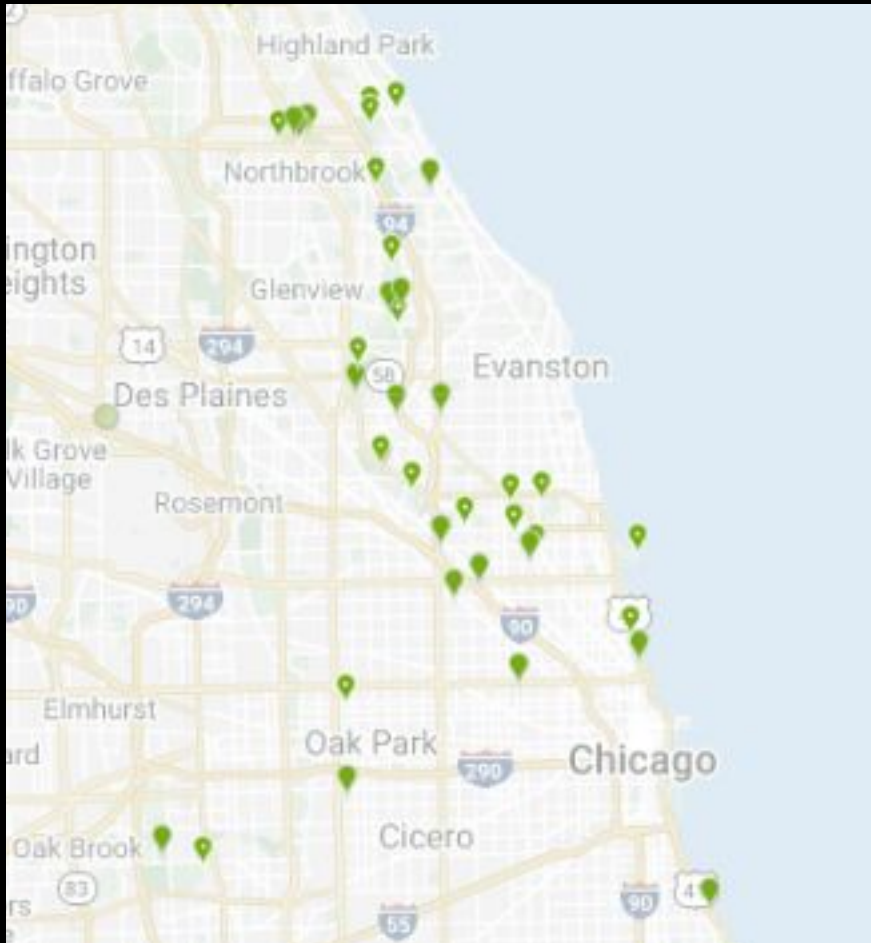


Showy lady slippers by Bill Spiers

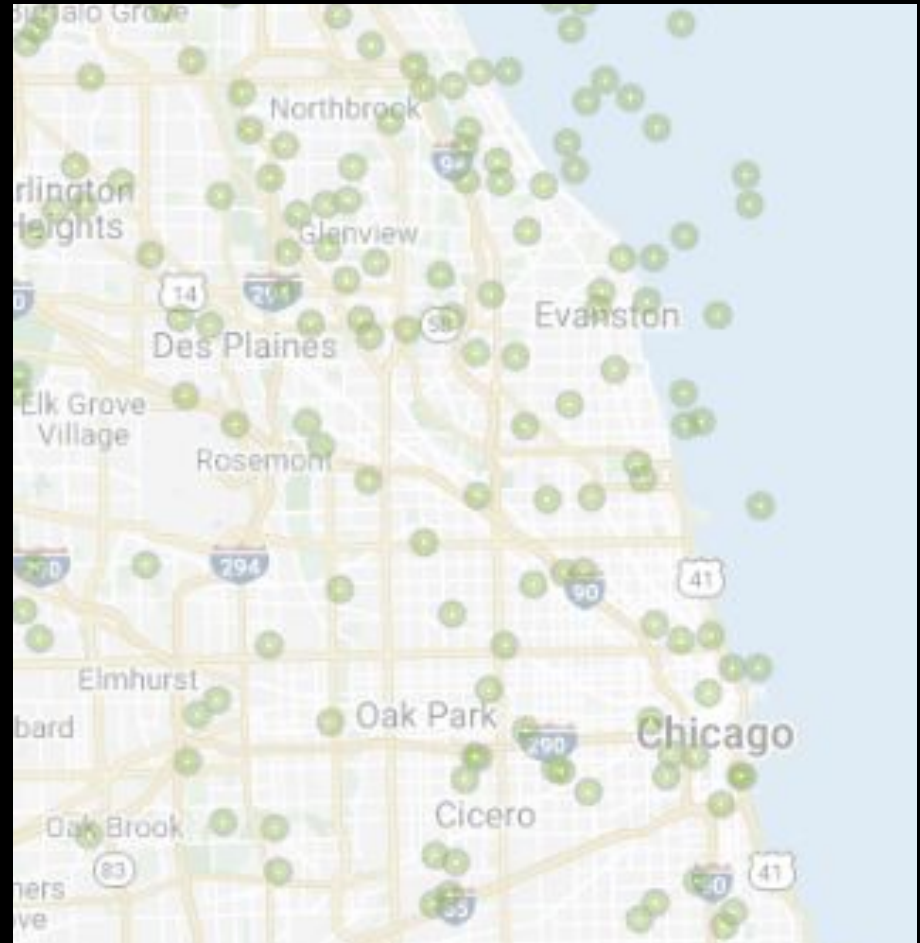


# Species Geoprivacy ...trade-offs

Thimbleweed (*Anemone virginiana*)  
**open** taxon geoprivacy



Wild leeks (*Allium tricoccum*)  
**obscured** taxon geoprivacy





# Accessing Hidden Coordinates

## 1. User-to-user trust system

- “Your Relationships” page: [inaturalist.org/relationships](https://inaturalist.org/relationships)
- User selects “trust with hidden coordinates”

## 2. Traditional Project

- To set up, requires account to have 50 observations
- Requires manually adding observations to project
- Users must grant access to coordinates for the project

*Download any important data regularly*

# Geoprivacy Caution & Tips

- Easy to interpolate true coordinates based on your other nearby observations that day
  - Obscure entire day
  - Upload observations out of order
- Not everything is set to auto-obscure that should be
  - Please flag the species for curation
- Be careful who/which projects you trust with accessing coordinates
- Consider whether you should post it online at all
- Staff are exploring improvements to geoprivacy



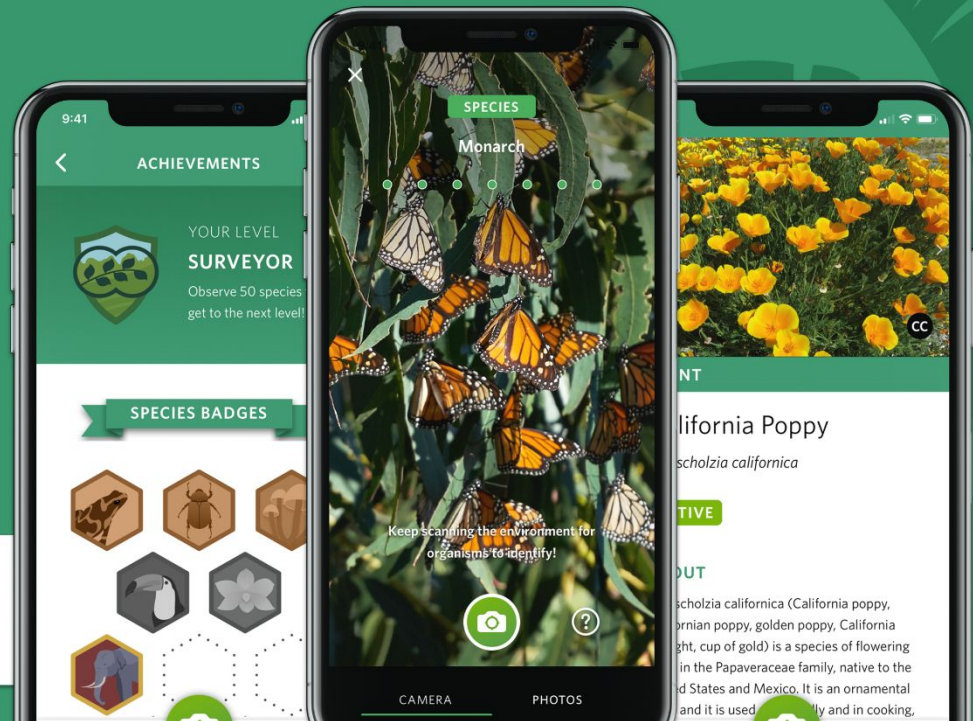
# Kids and iNaturalist: Best Practices

- **Younger children: consider using the “Seek” app instead**

Get outside, explore, and learn about  
the nature all around you!

**seek**   
by iNaturalist

iNaturalist is a joint initiative of the  
California Academy of Sciences and  
the National Geographic Society



# Kids and iNaturalist: Best Practices

- Younger children: consider using the Seek app instead
- Use iNaturalist yourself first
- Focus on wild organisms
- Teachers:
  - Don't set large observation/ID requirements or require "research grade"
  - Watch out for copyrighted images/gaming the system
  - Curate their observations yourself

## iNaturalist Teacher's Guide



Your Observations Community Identify More

- Taxa Info
- Guides
- Places
- Site Stats
- Help
- Video Tutorials
- Managing Projects
- Teacher's Guide**

iNat might seem like the perfect blend of science and nature in the classroom, and as a result iNat gets a flood of observations that are often boring and don't really learn anything. In order to avoid this, we have pointers for teachers seeking to use iNaturalist.

### First Use iNaturalist Yourself

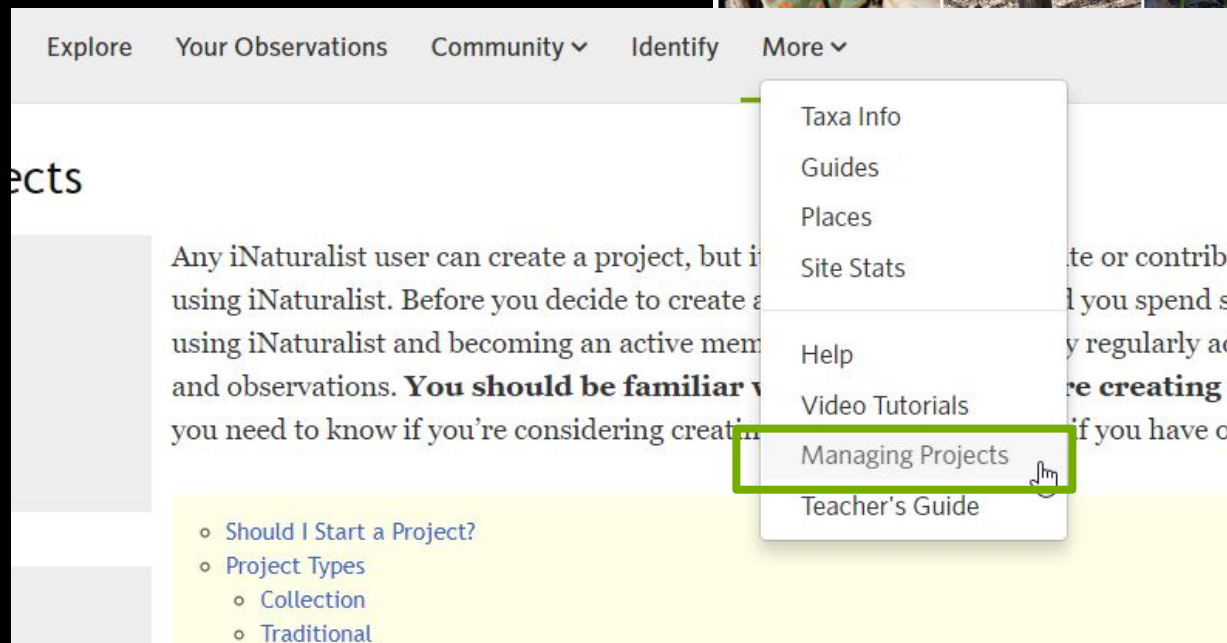
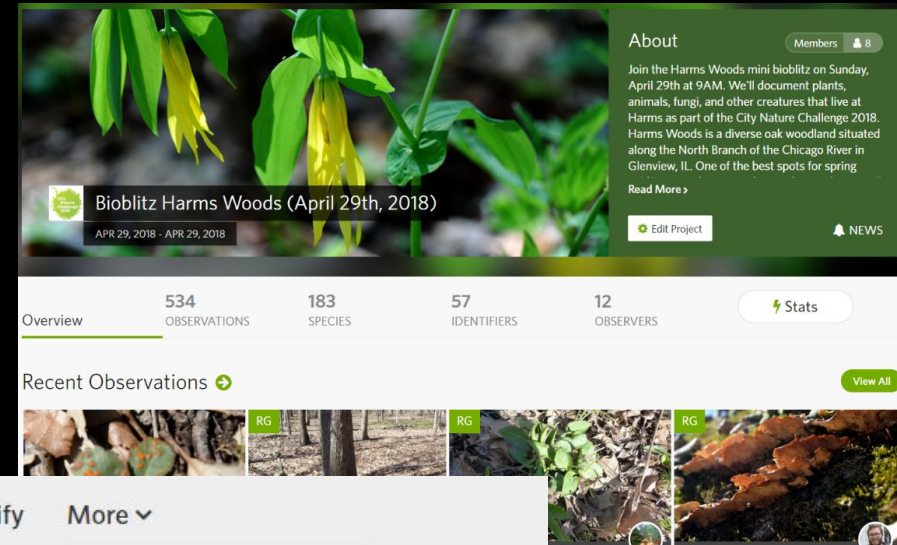
Try to add 20-30+ observations *before* considering any requirements. This will make a lot more sense to you after some firsthand experience. This can

# Should I create a project?

Probably not, unless:

- Bioblitz/event
- Create a sub-community
- Need access to private coordinates
- Require certain observation fields

## Managing Projects Guide







# Illinois Botanists Big Year

JAN 1, 2019 - DEC 31, 2019

a project of the Illinois Native Plant Society  
*Carex buxbaumii* by Kathleen Marie Garness

## About

Members 68

Find the most plant species in Illinois in 2019 and rejoice in your victory!

1. Must be a plant,
  2. Observed in Illinois,
  3. Observed in 2019, and
  4. Research grade
- ⇒ [HELP IDENTIFY](#)

[Read More >](#)

[Edit Project](#)

[NEWS](#)

Overview

58,033  
OBSERVATIONS

1,934  
SPECIES

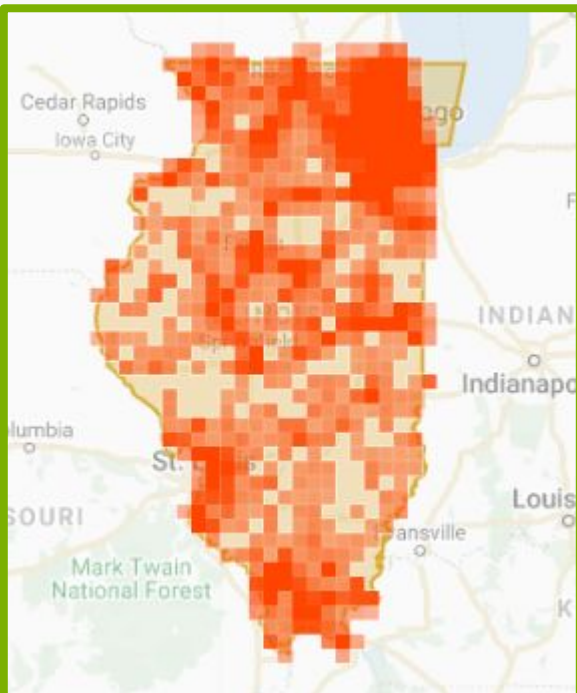
1,470  
IDENTIFIERS

4,045  
OBSERVERS

[Stats](#)

Recent

RG



### Most Species

1st

dziomber 1,152

wildlandblogger 1,136

sanguinaria33 881

sedge 817

elfaulkner 769

johnboldt 758

[View All](#)



iNaturalist

# Adding Place Boundaries

- All states and county boundaries already in database
- Search existing places before adding new ones
- To add a new place to iNat, your account needs a minimum of 50 observations
- Places aren't currently "transferable" - make the place from an organizational account, not a personal one

# DeKalb County Forest Preserve District

[inaturalist.org/projects/dekalb-county-forest-preserve-district](https://inaturalist.org/projects/dekalb-county-forest-preserve-district)





## DeKalb County Forest Preserve District

### About

Leave 9

All preserves in the DeKalb County Forest Preserve District.

[Read More >](#)

Edit Project

NEWS

Overview

930  
OBSERVATIONS

470  
SPECIES

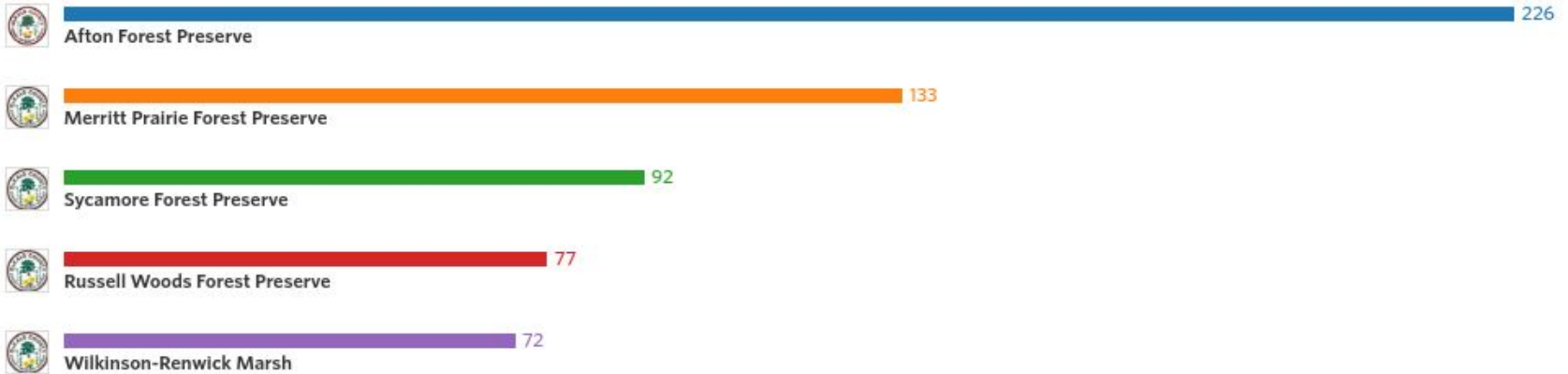
271  
IDENTIFIERS

52  
OBSERVERS

Stats

### Leaderboard

Sort By: [Observations](#) | [Species](#) | [Observers](#)





# DeKalb County Forest Preserve District

## About

Leave 9

All preserves in the DeKalb County Forest Preserve District.

[Read More >](#)

Edit Project

NEWS

### Overview

930  
OBSERVATIONS

470  
SPECIES

271  
IDENTIFIERS

52  
OBSERVERS

Stats







## County Farm Forest Preserve

### About

Members  3

Tucked behind a shopping center along Sycamore Road, the smallest of our Forest Preserves (9 acres) was the wooded back yard, and a dump site, for the old County Nursing Home. With the nursing home and dump both removed, this little green oasis, now sandwiched between housing and commercial development, contains a few of

[Read More >](#)

 Edit Project

 NEWS

Overview

27  
OBSERVATIONS

25  
SPECIES

19  
IDENTIFIERS

6  
OBSERVERS

 Stats



#### Most Observations

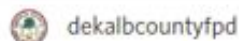
damo87

11



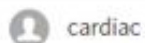
mccrea

7



dekalbcountyfpd

6



cardiac

1



christinelag

1



wild\_ecology

1

[View All](#)

[View Yours](#)



#### Most Species

damo87

11



dekalbcountyfpd

6



mccrea

6



wild\_ecology

1

[View All](#)

[View Yours](#)



#### Most Observed Species

*Celtis occidentalis*

2



*Teucrium canadense*

2



Order Passeriformes

1



*Canis latrans*

1



Class Gastropoda

1



*Hesperis matronalis*

1

[View All](#)

[View Yours](#)



# Getting more help

- FAQ page: [inaturalist.org/pages/help](http://inaturalist.org/pages/help)
- Ask on the forum: [forum.inaturalist.org](http://forum.inaturalist.org)
- General support email is [help@inaturalist.org](mailto:help@inaturalist.org)
- @bouteloua is happy to help!

## Bugs!

- File a bug report on the forum



# Main iNat Tips

- Don't just use the app – more features on the website
- Take multiple, identifiable photos
- Don't be afraid to ask for help  
...or to make mistakes





Thanks!  
Questions?

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Patrick McCrea

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