



City Nature Challenge 2018

Participant Guide

APRIL 27-30, 2018

ST. LOUIS, MISSOURI





iNaturalist is based at the [California Academy of Sciences](http://www.calacademy.org)

55 Music Concourse Dr.
Golden Gate Park
San Francisco, CA
94118

Email: help@inaturalist.org.

iNaturalist. Available from <http://www.inaturalist.org>. Accessed 2017.

Text copyright © 2018 by Missouri Botanical Garden

Cover photo: Catherine Werner, City of St. Louis Mayor's Office of Sustainability
All other photos: Missouri Botanical Garden

The City Nature Challenge and iNaturalist logos and iNaturalist screenshots are
© 2016 the California Academy of Sciences



Table of Contents

Welcome! 2

Project Background 3

 What is a Biodiversity Inventory?.....3

 What is Citizen Science?3

 What is a ‘City Nature Challenge’?.....4

About the St. Louis City Nature Challenge 5

 Schedule5

 2018 Event Guidelines.....6

Using iNaturalist..... 7

 What You Need7

 Getting Started7

 Observations vs Projects.....8

 Creating Observations.....9

Additional Resources 16

 Outdoor Learning Strategies 16

 CNC Age/Grade Level ‘Base Camps’ for Teachers 16

 Local institutions..... 16

 Field Guides..... 17

 Species Identification 17

 Citizen Science Opportunities 18

Taking Part is Easy



Find Wildlife

It can be any plant, animal, fungi, slime mold, or any other evidence of life (scat, fur, tracks, shells, carcasses!) found in your participating city.



Take a Picture of What you Find

Be sure to note the location of the critter or plant.



Share Your Observations

By uploading your findings through iNaturalist or your city's chosen platform.



Welcome!

In 2013, in response to emerging research supporting the notion that urban nature conveys many social, economic and environmental benefits to residents, the City of St. Louis launched the 'Urban Vitality and Ecology (UVE)' initiative. This multifaceted project promotes city-wide programs and practices that advance eco-literacy among residents and strives to ensure all have access to quality natural spaces. In the years since, St. Louis has partnered with local businesses, schools, organizations and residents to improve local parks, create native and pollinator-friendly city gardens, and promote understanding and awareness of environmental concerns that affect our region.

One of the objectives of the UVE initiative is to create an urban biodiversity inventory for the city that can inform policy and planning decisions. If we have a sense of what plants, insects and wildlife are relying on our natural spaces (and which should be, but currently are not), we can take the welfare of these species into consideration when making decisions that affect those spaces. In the surrounding counties, a collaboration of organizations known as OneSTL has initiated a similar effort to create an inventory of the region.

A biodiversity inventory is a huge undertaking! While St. Louis is home to many experts in natural fields, they cannot do it alone! For this reason, we need the help of residents, teachers and students who can document the plants and wildlife they encounter in their neighborhoods.

Thanks to iNaturalist, you can significantly contribute to this project! Take a walk in your neighborhood, snap photographs of plants and animals you encounter, record some simple observation data, and submit them to the iNaturalist site. This manual will provide you with key guidelines to keep in mind, tips for success, and resources that you may find helpful.

By helping us in this effort, you will be making a very real, very important contribution to the urban ecology efforts our city and surrounding region! Thank you!

Project Background

What is a Biodiversity Inventory?

A ‘biodiversity inventory’ is simply a listing of species found living in a given region. As the name implies, the goal is to document the diversity - the variety - of species present, as opposed to counting how many individual organisms might be living there.

These inventories are often created by professionals and used for a variety of purposes. Scientists and conservation agencies create biodiversity inventories to evaluate the ‘health’ of a given ecosystem. Ecosystems in which many different species are contributing are said to have ‘rich’ biodiversity and tend to be healthier overall, while ecosystems with poor biodiversity are less healthy and functional. These inventories help identify



areas that might be good candidates for study, or where ecological restoration efforts should be focused. Similarly, agricultural professionals and city planners may reference a biodiversity inventory in an area targeted for development or cultivation. This information identifies what organisms will be affected by changes to the landscape that result from human activities.

Depending on the purpose of the inventory, the list may be focused narrowly on one group of organisms (i.e. - all of the plants growing in a given lot or field, or fish species living in a given body of water), or it may attempt to include all living things in the area. The latter is called an **All Taxa Biodiversity Inventory (ATBI)**. A truly complete ATBI takes a lot of work and time to compile, but even a partial inventory can tell us a great deal about the natural world around us.

What is Citizen Science?

The larger the area being studied, the more challenging it can be to inventory the biodiversity it supports. Computerized simulations and technological tools have made this easier in some ways, but ultimately the best way to inventory biodiversity is to be out in the field, observing and documenting it firsthand. As our interest in ecosystem functionality becomes increasingly more global, scientists have begun inviting citizens to assist with observing and cataloging the living things around them.



These ‘citizen science’ efforts are a great way to introduce communities to the importance of and practices inherent to science work, notably careful observation and data collection. In most cases, this is accomplished by providing simple guidelines for collecting data, and inviting the public to submit this data using “smart” device applications (apps) and/or websites. Scientists review the submitted data, check it over for accuracy, and include it in their study for analysis.

A wide variety of citizen science opportunities are available today. Some, like iNaturalist, are broadly focused to create an ATBI for a given region. Others are more narrowly focused to document the range of specific species or groups. There are also citizen science projects in which observations are made concerning how living things move and change over time (phenology). For a list of citizen science opportunities that may be of interest to you, see the Resources page at the back of this guide.

What is the ‘City Nature Challenge’?

The City Nature Challenge is a fun, competitive effort to enlist the public’s help to create a “snapshot” ATBI for cities around the globe using the iNaturalist citizen science platform.

The **City Nature Challenge** was organized in 2016 by Lila Higgins at the Natural History Museum of Los Angeles County and Alison Young at the California Academy of Sciences. They challenged the citizens living in and near Los Angeles and San Francisco, respectively, to submit iNaturalist observation reports describing the living things they found in their parks, lawns, schoolyards and public spaces. Over that first eight-day event, more than 1,000 residents submitted observations and documented more than 1600 species.

In 2017, the challenge was taken up by 15 more cities in the United States, and the event became a competition to see which cities could document the most biodiversity in their region. The ‘winner’ in 2017 was Houston, Texas, where 2,419 species were documented.

In 2018, the total number of cities participating - including St. Louis - grew to 65. Our region’s participation will, we hope, inspire local residents to try iNaturalist and practice documenting local biodiversity, while helping the city of St. Louis and the surrounding region create a foundational ATBI that we can continue to grow in the years to come.



About the St. Louis City Nature Challenge

Schedule

The 2018 City Nature Challenge is a 7-day event running from **April 27-May 3, 2018**. All 65 participating cities will be taking part on these dates.

The schedule for the event will run as follows:

Observing: April 27–30, 2018

Residents are welcome to submit valid observations that observe the event guidelines (see page 5) taken anywhere within the designated area on any day of the event. However, special attention will be paid to certain areas on certain days:

- **FRIDAY, APRIL 27 - *Science at School***: Local students and teachers throughout the City of St. Louis and surrounding counties will be encouraged to make observations on or near their campuses.
- **SATURDAY, APRIL 28 - *Neighborhood Naturalist***: Make observations of nature and wildlife found in local residential areas—backyards, nearby paths, local neighborhood parks.
- **SUNDAY, APRIL 29 - *National Park Rx Day***: Celebrate National Park Prescription “Rx” Day with the National Park Service at the Gateway Arch, in Forest Park, Tower Grove Park, or other selected parks.
- **MONDAY, APRIL 30 - *Wildlife at Work***: Check for biological species outside places of work and in business areas of the City and region

Verifying: May 1-3, 2018

During these days, all observations will be reviewed to check and correct identifications. As a participant, you may want to take a moment during this period to review your submitted observations and make corrections as appropriate, based on feedback from reviewers.

2018 Event Guidelines

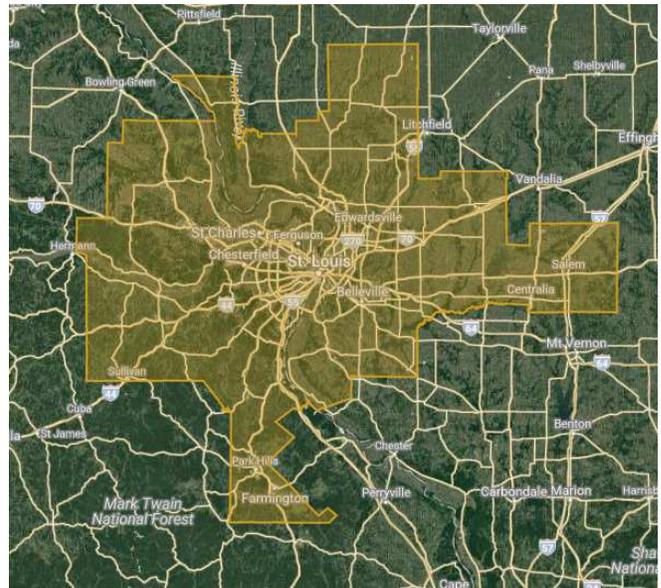
For your observations to be included in the challenge, the following guidelines **MUST** be observed:

- **All observations must be made during the collection period: April 27-30, 2018**
No observations should be submitted using photographs taken or observations made before April 27 or after April 30, 2018.

- **All observations must be made within the region designated.** The St. Louis project will include the following counties in Missouri: St. Louis, St. Louis City, St. Charles, Jefferson, Lincoln, Franklin, Warren, Washington, and St. Francois.

The region also includes the following counties in Illinois: Calhoun, Jersey, Madison, St. Clair, Monroe, Clinton, Macoupin, and Bond.

- **All observations must be added to the St. Louis City Nature Challenge project within iNaturalist.** More information about how to add observations to the project can be found in the next section.



- **Organisms observed should be 'wild'.** Pets, livestock, houseplants, and food plants/crops should not be subjects of observations. Landscape plants, trees, and shrubs that were planted more than six months ago (before September 2017) are acceptable.
- **Media files must be included.** All project observations must include at least one photo (preferably more) or an audio file of calls to be included.

Using iNaturalist

iNaturalist began in 2008 as a Masters' project designed by students at the University of California - Berkeley. Ten years later, the community comprises a population of more than 500,000 users worldwide that has recorded more than 7 million observations. The platform has become the go-to citizen science application for biodiversity study. It is a fun, easy tool to use, and is largely what makes the City Nature Challenge possible!



What You Need

To use iNaturalist effectively, you need the following:

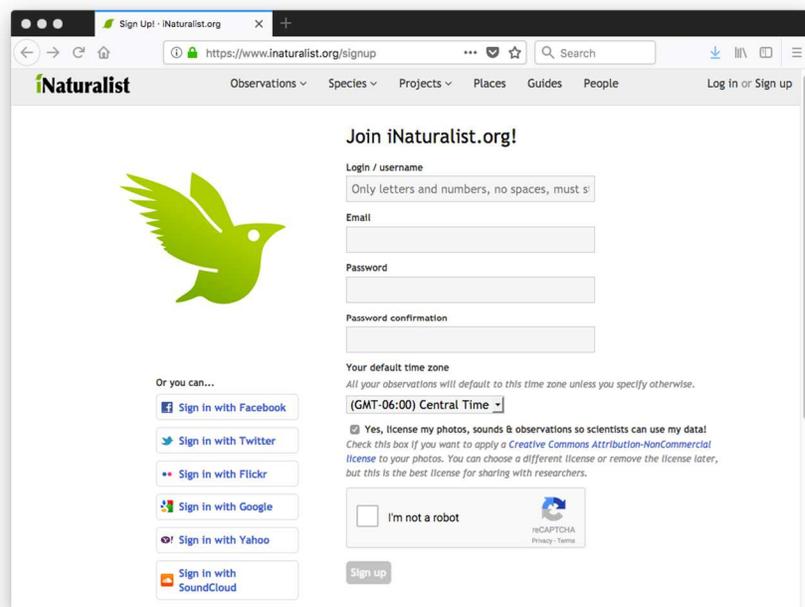
- A digital camera
- A digital audio/MP3 recorder (optional, but handy if you are observing birds, frogs or insects with distinctive calls)
- A means of documenting data
- An internet connection

If you have a tablet or smartphone, you probably have all of these requirements in one device. Otherwise, a digital camera/recorder and a notebook are fine for making observations in the field, and you can upload observations through the iNaturalist.org website when you're done.

Getting Started

Visit www.inaturalist.com and click on 'Sign Up' to create an account.

You can create login credentials specific to iNaturalist, or you can log in using Facebook, Twitter, Google, Flickr or Yahoo:

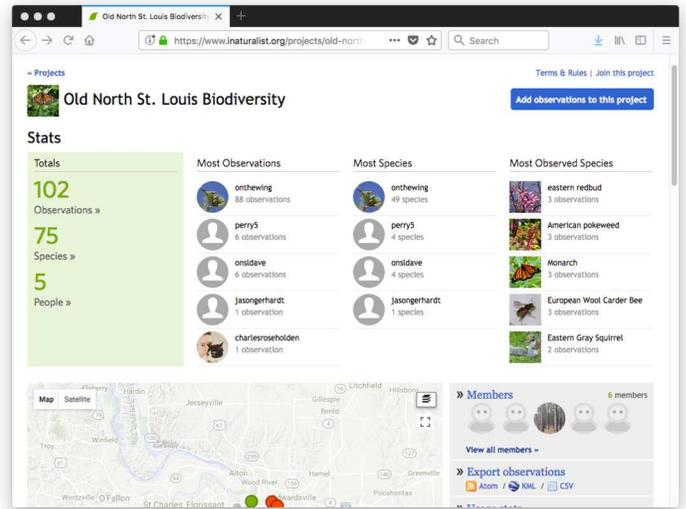


The screenshot shows the iNaturalist.org sign-up page. The browser address bar displays "https://www.inaturalist.org/signup". The page features the iNaturalist logo and a navigation menu with options: Observations, Species, Projects, Places, Guides, and People. A "Log in or Sign up" link is also present. The main content area is titled "Join iNaturalist.org!" and includes a large green bird icon. Below the icon, there are several social media login options: "Sign in with Facebook", "Sign in with Twitter", "Sign in with Flickr", "Sign in with Google", "Sign in with Yahoo", and "Sign in with SoundCloud". To the right of these options, there is a form for creating a new account. The form fields include: "Login / username" (with a note: "Only letters and numbers, no spaces, must s..."), "Email", "Password", and "Password confirmation". Below the form, there is a section for "Your default time zone" with a dropdown menu set to "(GMT-06:00) Central Time". A checkbox is checked for "Yes, license my photos, sounds & observations so scientists can use my data!". Below this, there is a note about Creative Commons Attribution-NonCommercial license. At the bottom of the form, there is a "I'm not a robot" checkbox and a reCAPTCHA logo. A "Sign up" button is located at the bottom right of the form.

Observations vs Projects

An ‘Observation’ is a record of an encounter with an organism. A given observation may be included in one or more projects.

A ‘Project’ is a collection of observations that fit criteria established by project’s creator. Examples of common project criteria are location, timeframe, taxa, and participating users. One might create a long-term project documenting the biodiversity in their neighborhood, for example, or create a project for a Bioblitz event in which participants submit observations made in a given day. You might create a project that invites observations of frogs around the world, or a project to which only members of your class can contribute.



Users wishing to submit observations to a project must first visit the project page and click ‘Join this project’ in the upper right-hand corner of the landing page. Once joined, users have the option to add any observation they make to the project as long as it fits the criteria set by the project’s organizers.

The St. Louis City Nature Challenge is a project:

www.inaturalist.org/projects/city-nature-challenge-2018-st-louis-mo

Observations of any living thing may be added to the project as long as the observation was made:

- between April 27 and April 30
- in the Missouri and Illinois counties designated as the ‘St. Louis region’ for the project
- Includes photos and/or media files





Creating Observations

As noted on page 5, the St. Louis City Nature Challenge has been broken out into themed days. However, these themes are suggestions only, and any observations made during the time period may be included in the project, regardless of the setting in which they were made. However, please remember the following guidelines:

- **Be respectful of private property and avoid trespassing.** Plants and animals on private property should be photographed from the street or sidewalk if possible. If you must enter the property, obtain permission from the property owner first.
- **Also, please be respectful of the organisms you observe.** Do not pick leaves, flowers, or fruits. Small organisms that are safe to handle may be carefully placed in a small container while taking photos, but they should be released immediately and as close to where they were found as possible.

Photography Guidelines

Taking photos in the iNaturalist app on a tablet or smartphone is convenient, but you can also use a standard digital camera in the field and upload photos to the website later. If you are observing in an area where internet access is likely to be unreliable, a digital camera may be preferred.

Please ensure that:

- **Photographs are identifiable.** Avoid blurry photos, and to try to get close enough that the organism's markings and distinctive features can be seen. If your camera has a zoom function, use it to get close to organisms.
- **The photos you upload were taken by you.** You may be tempted to upload a photo from the Internet, especially if you were unable to take a clear photo of what you observed. This is a violation of copyright law, and because the organism pictured is not the specific organism observed, the observation will not be accepted.
- **The subject of photographs is obvious.** Make sure the organism you are observing is central and clear. Try to avoid including other species in the photo if possible.
- **There are no faces in any photographs.** Hands and feet in photographs are fine.
- **Where possible, several photos are included.** A single photo may not provide enough information for a solid identification. Try to include photos taken at different angles to showcase any features that might aid in identification. When observing trees, try to include close-up photos of leaves, branches, and bark. Flowers and fruits are also helpful, if available.

Please avoid duplicate observations! Remember, the point is to document as many different species as possible. Try to avoid uploading multiple observations of the same species within a given 100-ft. radius or so.

Recording Data

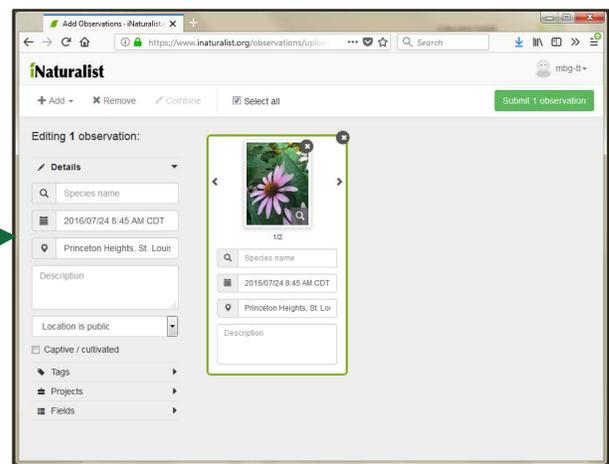
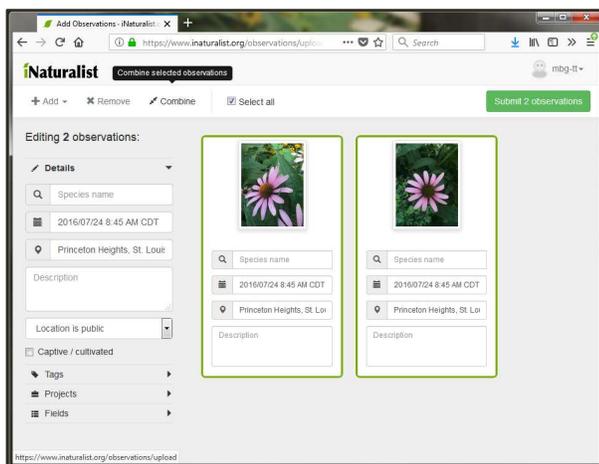
Observations include four key pieces of information in addition to photographs and/or audio files:

1. Where the organism was seen or heard (GPS coordinates)
2. When the organism encounter took place (time and date)
3. Whether the organism is captive/cultivated (cared for by humans)

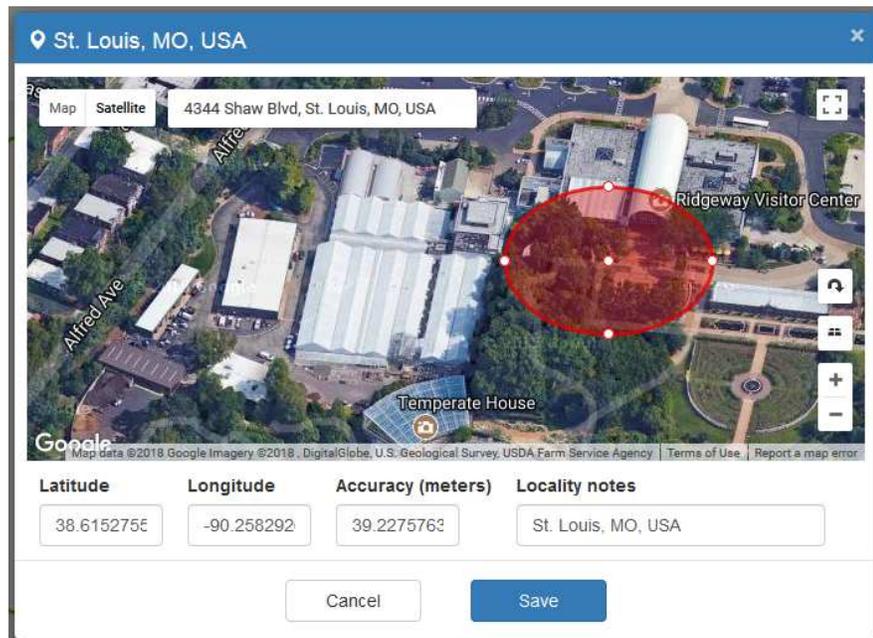
If you are working in the iNaturalist app on a device that is connected to the internet, the app often automatically populates the location and time based if this information is provided by the photo's EXIF data.

If you are using a digital camera, you will need to record your data in the field. An observation data sheet has been provided in the back of this guide that may help! When back at a computer, simply upload your photos and data to the iNaturalist website:

1. Click on your username in the upper right-hand corner of the screen and select Observations→Add.
2. Now click 'Add' in the upper left and select 'Upload photos or sound files'. Click 'Photos or sounds' to open a dialog box and navigate to and select the file you want to upload. (*Note that 'Observations without media' is an option in iNaturalist, but observations without media cannot be submitted to the City Nature Challenge.*)
3. If you want to include more than one photo or media file in a given observation (highly recommended), repeat step 2 to add the additional files. Hold down the shift key and click on both photos to highlight them in green as shown in the following screenshot. The option to 'Combine' will appear in the top menu; click this to merge the records into a single observation.



Complete the ‘Details’ fields on the left-side of the page that are not automatically filled with data from your photos or sound files.



If your media files do not include GPS coordinates, click the ‘Location’ field to call up a map. Enter the nearest address in the search bar to zoom in on the area. Then switch to ‘Satellite’ view and click-drag the red circle to reposition it so that the center rests as close to the site where the observation was taken as possible. Click ‘Save’. The GPS coordinates will be added to your observation.

Observation locations can be set ‘Open’, ‘Obscured’, or ‘Private’. An ‘open’ location is one that is visible to all iNaturalist users. ‘Obscured’ is appropriate if you want to indicate the general area in which a given observation was made without being specific; this is generally appropriate if the species observed is threatened or endangered. Use ‘Private’ if you want to completely obscure your observation’s location from other users.

Identification of Observed Species

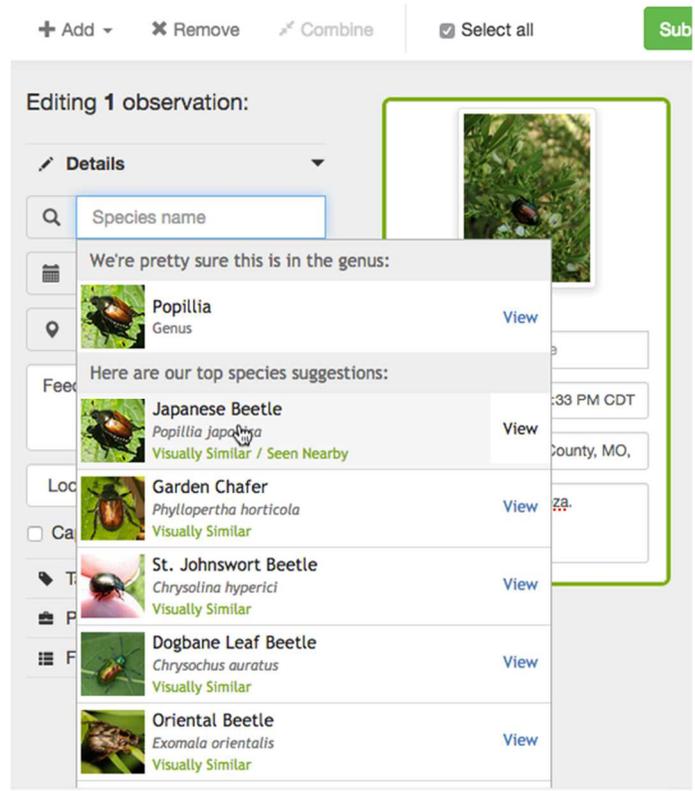
Identifying what you observed can be daunting, especially for those who are not well acquainted with the plant and animal species common to their area.

This is not unusual; so if you fall into this category, **don't worry!**

Provided your photos met the criteria listed above, the iNaturalist website will attempt to analyze the photo and offer suggestions.

Click 'Species Name' under 'Details'. If the iNaturalist AI is able to decipher enough information from your photo to suggest possible IDs, a menu of suggestions for you to consider will appear. Click 'view' to get a closer look at the suggested organisms, and then select the entry that best matches what you observed.

There will be times when iNaturalist cannot identify the organism in the photos or produces matches that are clearly in error. When this happens, you may want explore other references for help, including field guides and dichotomous keys. Here are some great options:



Missouri Department of Conservation – Field Guide

nature.mdc.mo.gov/discover-nature/field-guide/search

A great starting place for all major organism groups that can be found in our area, including: trees, wildflowers, grasses, mushrooms, insects, birds, reptiles, amphibians, mammals and fish.

UNIVERSITY OF MISSOURI
Extension



University of Missouri Extension – Weed ID

weedid.missouri.edu

Another great resource for identifying common yard, field and roadside weeds found growing in Missouri.



The Cornell Lab - Merlin Bird ID

merlin.allaboutbirds.org

Merlin®

The Cornell Lab offers a variety of resources for observing and identifying birds, including several citizen science opportunities. The Merlin site and app are great tools to aid in identification.



The Arbor Day Foundation – What Tree is That?

www.arborday.org/trees/index-identification.cfm

The Arbor Day Foundation offers this beautifully illustrated dichotomous key to aid in identifying trees. Not all Missouri trees are represented here, but enough are to bring you close to an accurate ID.



Insect Identification for the Casual Observer

www.insectidentification.org

This site offers some solid help in identifying insects, as well as spiders and other arachnids.

Remember - it's okay to get it 'wrong'. Identifying species seen in the wild is challenging even for experts! The iNaturalist community was set up to enable users to cross-check identifications, so don't let anxiety over misidentification concern you.

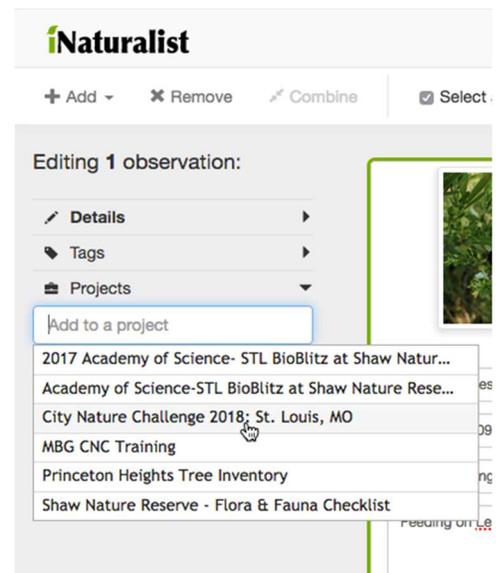
Submitting Observations to the St. Louis City Nature Challenge

Once you have your observation details entered and your organism identified, you can add your observation to the St. Louis City Nature Challenge project.

Click on 'Projects' in the sidebar and a field will appear. If you have previously joined projects, they may appear below the field automatically. (Your list will look different from the one shown here.)

Select 'City Nature Challenge 2018: St. Louis, Mo'. If you want to add the observation to other projects, just click the field again and click the name of that project as well. One observation can be added to many projects.

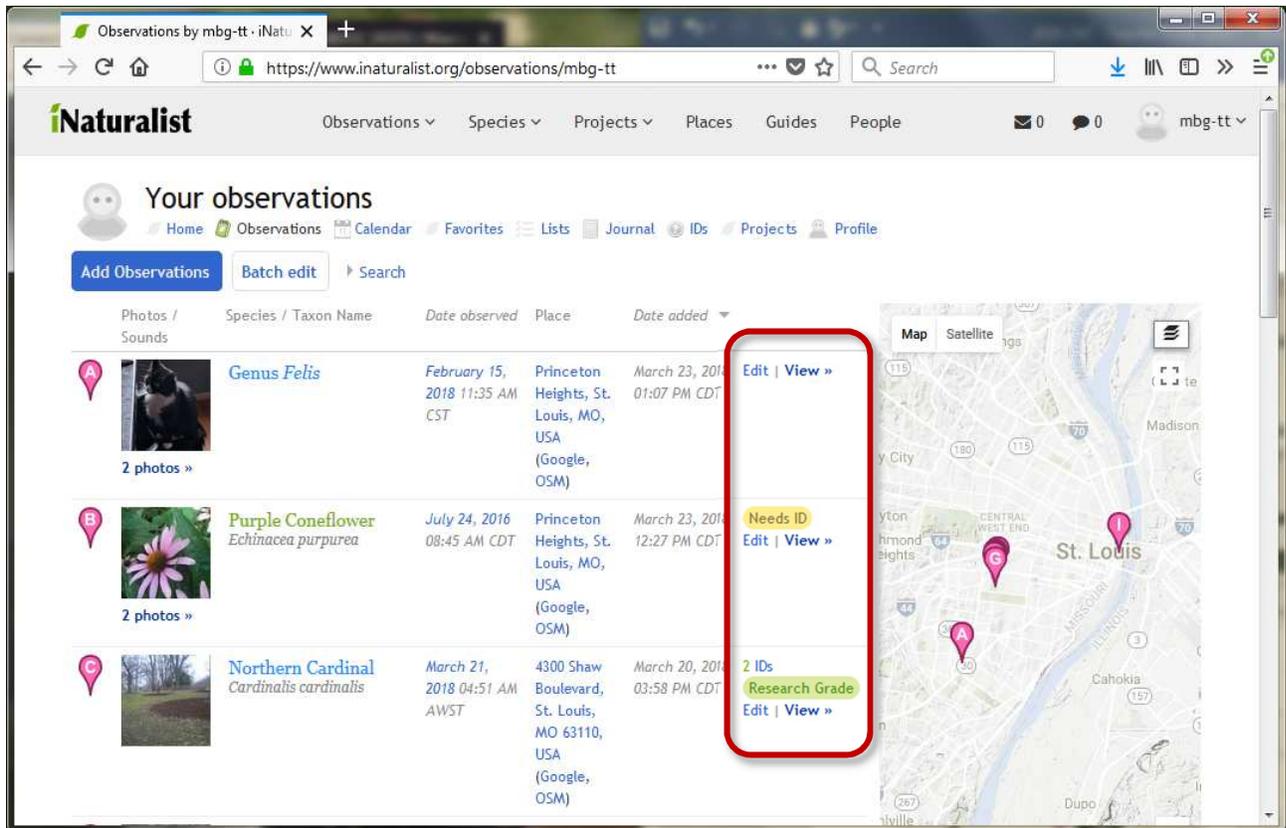
And that's it! Click 'submit' and your observation will be saved and added to the City Nature Challenge project.



Next Steps...

By May 3, 2018, you will want to make sure all observations are identified and added to the City Nature Challenge project. Once complete, the following may happen:

1. A data quality 'grade' will be assigned to the observation.



The grade will be one of the following:

- a. **Casual** - All observations are assigned the 'Casual' grade when they are first created. This grade does not appear in the observation list, but can be seen on the observation itself as a gray flag. A 'casual' grade means one of the following:
 - i. The observation is new.
 - ii. The observation lacks media files or other important information.
 - iii. The observation describes an inappropriate organism (i.e. a pet or a houseplant), or the photos of the organism are in some way inappropriate (i.e. subject isn't obvious, too blurry for ID, etc.)
- b. **Needs ID** - An observation is bumped up to 'Needs ID' grade when all needed information is present and photos/media files are approved. Other users and

- iNaturalist experts will be able review your proposed identification and supply their own.
- c. **Research Grade** - When 2/3rds of the users who review an observation agree on its ID down to the species level, the observation is assigned a 'Research Grade' status. The observation will then be eligible for referencing for scientific purposes, including creating range maps, generating ATBI lists, etc.
2. **Other iNaturalist users and experts may 'follow' you and/or comment on your observation.** iNaturalist is both a recording tool and a social network designed to facilitate cooperation between users in the effort to identify and catalog species observed in the wild. Other users may post comments to or ask questions about your observations in addition to providing their own identification suggestions. Users may also 'follow' your account so they can be notified when you add more observations that might be of interest to them.
 3. **We'll keep you posted!** When we hear how St. Louis' CNC contributions compared with those of other cities, we will post the results to the project website. Wherever we rank in the final standings, though, your contributions to the City Nature Challenge and to iNaturalist itself will help local scientists and policymakers learn more about the wildlife that lives around us!





Resources

Outdoor Learning Strategies

- [CNC - Tips for Teaching Outside](http://education.eol.org/cnc_materials/TipsForTeachingOutside.pdf)
education.eol.org/cnc_materials/TipsForTeachingOutside.pdf
- [Pacific Education Institute - Fostering Outdoor Observation Skills](http://pacificeducationinstitute.org/wp-content/uploads/2017/03/Fostering-Outdoor-Observation_Guide.pdf)
pacificeducationinstitute.org/wp-content/uploads/2017/03/Fostering-Outdoor-Observation_Guide.pdf

CNC Age/Grade Level 'Base Camps' for Teachers

The following documents were curated to include NGSS-aligned activities for each age/grade level.

- [Educator Basecamp for Ages 5-8 \(Grades K-2\)](https://education.eol.org/cnc_materials/EducatorBasecamp_5-8.pdf)
https://education.eol.org/cnc_materials/EducatorBasecamp_5-8.pdf
- [Educator Basecamp for Ages 8-11 \(Grades 3-5\)](https://education.eol.org/cnc_materials/EducatorBasecamp_8-11.pdf)
https://education.eol.org/cnc_materials/EducatorBasecamp_8-11.pdf
- [Educator Basecamp for Ages 11-14 \(Grades 6-8\)](https://education.eol.org/cnc_materials/EducatorBasecamp_11-14.pdf)
https://education.eol.org/cnc_materials/EducatorBasecamp_11-14.pdf
- [Educator Basecamp for Ages 14-18 \(Grades 9-12\)](https://education.eol.org/cnc_materials/EducatorBasecamp_14-18.pdf)
https://education.eol.org/cnc_materials/EducatorBasecamp_14-18.pdf
- [Educator Basecamp for Higher Education](https://education.eol.org/cnc_materials/EducatorBasecamp_Undergrad.pdf)
https://education.eol.org/cnc_materials/EducatorBasecamp_Undergrad.pdf
- [Educator Basecamp for the General Public](https://education.eol.org/cnc_materials/EducatorBasecamp_generalpublic.pdf)
https://education.eol.org/cnc_materials/EducatorBasecamp_generalpublic.pdf

Local institutions

- **City of St. Louis**
 - [City Urban Ecology Website](http://www.stlouis-mo.gov/uve) - *www.stlouis-mo.gov/uve*
 - [Sustainability in the City](http://www.stlouis-mo.gov/sustainability/) - *www.stlouis-mo.gov/sustainability/*
- **Missouri Botanical Garden**
 - [General](http://www.missouribotanicalgarden.org) - *www.missouribotanicalgarden.org*, 314-577-5100
 - [Education/Teacher Programs](http://www.mobot.org/schoolprograms) - *www.mobot.org/schoolprograms*, 314-577-0185
 - [BiodiverseCity St. Louis](http://www.mobot.org/biodiversecitySTL) - *www.mobot.org/biodiversecitySTL*



- Saint Louis Zoo
 - [General](http://www.stlzoo.org) - www.stlzoo.org, (314) 781-0900
 - [Education](http://www.stlzoo.org/education/forteachers/) - www.stlzoo.org/education/forteachers/, (314) 646-4544
- Academy of Science - STL
 - [General](http://www.academyofsciencestl.org) - www.academyofsciencestl.org, (314) 533-8083
 - [For Educators](http://www.academyofsciencestl.org/educators/) - www.academyofsciencestl.org/educators/
- Missouri Department of Conservation
 - [General](http://mdc.mo.gov) - mdc.mo.gov
 - [Discover Nature Schools](http://nature.mdc.mo.gov/discover-nature/teacher-portal) - nature.mdc.mo.gov/discover-nature/teacher-portal

Field Guides

- [Golden Guides, St. Martin's Press](http://us.macmillan.com/series/agoldenguidefromstmartinspress/)
us.macmillan.com/series/agoldenguidefromstmartinspress/
- [Peterson Field Guides](http://www.houghtonmifflinbooks.com/peterson/)
www.houghtonmifflinbooks.com/peterson/
- [Sibley Guides](http://www.sibleyguides.com)
www.sibleyguides.com
- [Audubon Society Field Guides](http://www.audubon.org/national-audubon-society-field-guides)
www.audubon.org/national-audubon-society-field-guides
- [Missouri Department of Conservation](http://www.mdcnatureshop.com)
www.mdcnatureshop.com

Species Identification

- [Missouri Department of Conservation - Field Guide](http://nature.mdc.mo.gov/discover-nature/field-guide/search)
nature.mdc.mo.gov/discover-nature/field-guide/search
- [University of Missouri Extension - Weed ID](http://weedid.missouri.edu)
weedid.missouri.edu
- [The Cornell Lab - Merlin Bird ID](http://merlin.allaboutbirds.org)
merlin.allaboutbirds.org
- [The Arbor Day Foundation - What Tree is That?](http://www.arborday.org/trees/index-identification.cfm)
www.arborday.org/trees/index-identification.cfm
- [Insect Identification for the Casual Observer](http://www.insectidentification.org)
www.insectidentification.org



Citizen Science Opportunities

ATBI

- [iNaturalist](http://www.inaturalist.org) - www.inaturalist.org
- [Project Noah](http://www.projectnoah.org) - www.projectnoah.org

Population Tracking

- [Frogwatch \(AZA\)](http://www.aza.org/frogwatch) -- www.aza.org/frogwatch
- [Feederwatch \(Cornell\)](http://feederwatch.org) -- feederwatch.org
- [Lost Ladybug Project](http://www.lostladybug.org) -- www.lostladybug.org
- [MonarchWatch](http://www.monarchwatch.org) -- www.monarchwatch.org
- [Firefly Watch \(MOS\)](http://legacy.mos.org/fireflywatch) -- legacy.mos.org/fireflywatch

Phenology

- [Nature's Notebook \(USAPN\)](http://www.usanpn.org/natures_notebook) -- www.usanpn.org/natures_notebook
- [Project Budburst \(Chicago Botanic\)](http://budburst.org) -- budburst.org
- [Journey North](http://www.learner.org/jnorth/) -- www.learner.org/jnorth/
- [Picture Post \(UNH\)](http://picturepost.unh.edu) -- picturepost.unh.edu

Miscellaneous/Other

- [CoCoRaHS \(Weather Tracking\)](http://www.cocorahs.org) -- www.cocorahs.org
- [Globe at Night \(Ambient Light Tracking\)](http://www.globeatnight.org) -- www.globeatnight.org