iNaturalist Plant Observation Assignment

developed by Aaron Liston, Oregon State University

March, 2020

email: aaron.liston@oregonstate.edu

iNaturalist: [@aaronliston](https://www.inaturalist.org/people/266181)

Student Instructions for Using iNaturalist

Getting Started:

1. Create an [iNaturalist](https://www.inaturalist.org/home) user account.

2. Submit your username [here](https://oregonstate.instructure.com/courses/1718615/assignments/7543600), and I will invite you to join the [BOT321 2019 iNaturalist project](https://www.inaturalist.org/projects/bot321-plant-systematics-2019).

3. Observations require a photograph and a location. A smartphone is not required, but the iNaturalist App is the simplest way to add observations. Alternatively, you can upload images from a digital camera via your account on the iNaturalist website.

4. Include 2-3 images per observation: leaf, reproductive organ (spore-bearing, cone, flower, fruit), entire plant. If the upper and lower leaf surface differs, include both sides. Most perennial herbs and woody plants will require 3 images; annuals may be documented with 2 images (entire plant and leaf+flowers).

Before starting, please read these 2 guides to plant photography for successful identification:

[Photographing plants for iNaturalist](http://www.sdplantatlas.org/inat/iNatPhotoguide.html)- San Diego Plant Atlas Project, USA

[Getting great plant photos for iNaturalist](https://www.inaturalist.org/projects/abisko-plants-and-phenology/journal/17621-getting-great-plant-photos-for-identification-in-inaturalist) – Abisko National Park, Sweden

5. Please be sure to add your observations to the [BOT321 2019 project.](https://www.inaturalist.org/projects/bot321-plant-systematics-2019)

6. A minimum of 20 observations identified to species (representing at least 15 plant families) are required. **Do not include more than 20 observations in the project. One point will be deducted for each extra plant.**

7. Under **"Description"**give the morphological features that you observed to confirm the identification. For example "5 petals and thick, trifoliate leaves" for *Fragaria chiloensis*. Every description needs to include at least one use of descriptive botanical terminology (e.g. “words to know” on your lab worksheets; the Gilkey & Dennis glossary).

8. Under "**Annotations**" select "flowering, fruiting, and/or budding" from Plant Phenology.

9. **Cultivated plants are not acceptable, and will result in zero points for that observation.**

**10. Please do not identify observations posted by other students in the class.**

11. Up to 3 observations from Field Trip 1 and 6 observations from Field Trip 2 may be included.

12. For all 20 of your project observations, please provide additional information in this [spreadsheet](https://oregonstate.instructure.com/courses/1718615/files/74575815/download): family, genus, species, authority, year published, native or introduced, geographic distribution. Please see the [assignment submission page](https://oregonstate.instructure.com/courses/1718615/assignments/7543599) for details.

13. Project Grading

Each of the 20 observations is worth 5 points, for a total of 100 points. Up to three points will be deducted for incorrect identifications. Typically 1 point for incorrect species, 1 point for incorrect genus, and 1 point for incorrect family. Incomplete observation details (description, attributes, latitude and longitude) or poor images (missing plant parts, out of focus, less than two) will result in the loss of up to 2 points. Incomplete spreadsheet data will result in the loss of up to 2 points per observation.

 **Extra credit** will be given for observations of species that are observed only once in the project:

1 unique species  = 5 points

2 unique species = 9 points

3 unique species =12 points

4 unique species = 14 points

5 unique species = 15 points

**Observations of plants that are sterile or in bud do not qualify for this extra credit.**

14. Due Monday June 3. Five points will be deducted for each day late.

15. I will review identifications of observations made through May 27 (Memorial Day). This means I will "agree" with correct IDs and change incorrect IDs to the correct rank (genus, family, etc.). This is to encourage submission of observations well before the June 3 deadline.

16. You are welcome to use the computer vision "species suggestion." However, note that it is correct about 80% of the time, so it is critical to include a description of the morphological features that you used to confirm the ID. Be especially cautious when the computer ID suggestions include multiple genera and families.

Student Instructions for Spreadsheet Submission

In addition to the[iNaturalist Assignment](https://oregonstate.instructure.com/courses/1718615/pages/inaturalist-assignment) observations, you are also required to submit a spreadsheet with information about each species observed:

Required [Spreadsheet for Submission](https://oregonstate.instructure.com/courses/1718615/files/74575815/download)

Spreadsheet Instructions:

The family, genus and species should match the iNaturalist observation. In some cases, this will differ from Gilkey & Dennis, due to an updated taxonomy. Use the iNaturalist name.

The authority and publication year can be obtained from [GBIF](https://www.gbif.org/) the Global Biodiversity Information Facility. GBIF consolidates plant specimen data from herbaria and several other sources, including iNaturalist.

Native or introduced can be obtained from Gilkey & Dennis. The geographic origin of introduced species is given; if no origin is mentioned, the species is native.

The second worksheet - labelled geography - provides a list of geographic descriptions to use. The geographic distribution can be obtained from the iNaturalist - each species has a map displaying its observations.  Remember to filter for research grade observations only. For a more comprehensive map, use [GBIF.](http://www.gbif.org/species)

Instructor’s Guide

1. To create an iNaturalist project, you need a minimum of 50 observations. This policy was initiated to deter spam/advertising, but does ensure that project administrators have some familiarity with iNaturalist. In a pinch, you can ask someone else to create a project for you, and make you the administrator.

2. iNaturalist has 3 types of project: collection, umbrella and traditional. I prefer the traditional, as it allow me to restrict project membership to students in the class. When you [create a traditional project](https://www.inaturalist.org/projects/new_traditional), choose the “invite-only” option, unless you don’t mind having the project open to any iNaturalist user.

3. I ask the students to submit their iNaturalist username to me via a Canvas assignment. I allow them to use a pseudonym on the site, as some prefer to be anonymous. Alternatives include Google forms or a Qualtrics survey. In either case, you will need to manually invite each user individually to join the project. Use these submissions to make a table with each student’s real name and username.

4. The first field trip is on week 2 or 3 of the term, and includes a demonstration of iNaturalist, and a requirement to submit at least one observation. We also demonstrate traditional plant collection and pressing (but this is not required for this course). Note that this year I will need to replace the field trips, and plan to work with the students to find natural areas near their homes where they can make observations.

5. I provide feedback on every observation submitted before the Memorial Day deadline (one week before the assignment is due). I use “Identify Observations” from “Project Curator Tools” and try to do this once a day. This is to encourage students to work on the project throughout the term, and not just the last week (of course 20% will still do that). If the identification is correct, I agree. If it is incorrect, I identify to the first taxonomic rank that is correct. For example, if the genus is correct but not the species, I identify to genus. Likewise for family, order and above. Students can resubmit identifications as many times as they like and I provide feedback until the Memorial Day deadline – it rarely requires more than two rounds for them to get the ID correct.

6. Due to the time involved in step 5, I limit the number of observations to 20. The first year, I gave extra credit for up to 20 additional observations – most students easily did this, resulting in a lot of work! Changing the extra credit to “unique species” has worked well – motivated students will make the effort to observe less conspicuous species and explore different habitats.

7. When it is time to grade, I use “Export Observations” from the project main page to download all observations. I only include three fields in the download: user\_id, quality\_grade, scientific\_name I then use Linux commands (sort, uniq, join, awk) to compile a list of the unique species (observed only once in the project) sorted by student. This could also be done with R, OpenRefine, or Access. Note that some of these species will only be unique because they are misidentified, so I give these extra attention when grading.

8. In iNaturalist, there are 2 ways to review observations: Explore or Identify. I prefer to use Identify. However, by default, research grade observations do not appear in Identify. To see all of a student’s observations, I use a custom URL in this format:

https://www.inaturalist.org/observations/identify?reviewed=any&quality\_grade=needs\_id%2Cresearch%2Ccasual&project\_id=38834&user\_id=

I use an Excel table to create these custom URLs, by concatenating one column with the above text and a second with the usernames.

9. When grading the project, I like to either “agree” or add the correct ID for each observation. However, if I am uncertain about the ID (due to the difficulty of the taxon or insufficient information) I will generally give the student the benefit of the doubt, but won’t “agree” in iNaturalist.

10. Note that each student submits a spreadsheet that summarizes their observations, and includes additional required information (authorities, geographic distribution, native/introduced status). I also use this as the grading sheet. I record the number of points lost for any observation that does not earn full credit, and the reason(s) why. However, I only add identification corrections in iNaturalist, and do not repeat them on the spreadsheet.