

United Nations Sustainable Development Goals Open Pedagogy Fellowship

Assignment 2: Finding Food for Free



Target 2.1: By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.

Introduction

Plants grow in even the most concrete of inner-city urban jungles. As you walk through the city, if you open your eyes and look at the ground around your feet, you will see many plants growing wildly in nooks and crannies, sidewalk cracks, and open spaces of every type. Most people refer to these plants as weeds because they are growing in undesirable locations. However, these plants could be edible or have medicinal properties that could benefit humans. Weeds could provide fresh greens loaded with essential nutrients for free, helping achieve SDG#2, Zero Hunger by 2030, but first we need to identify the plant species that we call weeds.

Instructions

iNaturalist is a citizen-based science app that can be used to help identify plant and animal species and map their distribution. Horticulture students from Kwantlen Polytechnic University in Langley BC are partnering with Anthropology students from Montgomery College in Maryland, near Washington, DC to observe the bi-coastal distribution of weed species around the campuses. Our goal is to document as many weeds as we can (Weed Bioblitz) and determine those species that are edible and available as free food sources on each campus.

With iNaturalist you will take a picture of a plant, which gets uploaded and recorded into the platform. iNaturalist will help to suggest a species identification, and once submitted the iNaturalist community will discuss your findings and confirm your species ID. iNaturalist tags the location of this species on a map so that it can be viewed by the iNaturalist community. We have started an iNaturalist project with the specific goal of mapping the distribution of the weeds around each campus. The Project website can be located at <https://www.inaturalist.org/projects/kpu-langley-mc-weed-bioblitz>

Once the weed species are identified and mapped we can determine what **edible** species of weeds we have on campus (another assignment) and compare the types, distribution, and abundance of edible weeds between the KPU and MC campuses.

iNaturalist General Steps

1. Go to iNaturalist and register. <https://www.inaturalist.org/>
2. Download the app if you have access to a smartphone; alternatively, you can use a camera and desktop/laptop. Watch the short how-to use the app video <https://vimeo.com/162581545>
3. Email your iNaturalist sign-in name to your instructor so you can be added to the Project as a User. Until you do this, you will not be registered as a Project User.
4. Read all the tabs in iNaturalist and become familiar with the how-to details. This is citizen science, and the information they provide is easy to understand.
5. All photos uploaded to iNaturalist are released under a Creative Commons Attribution - Non-Commercial license, as is this Assignment!

KPU HORT3250 and HORT4440 Instructions

Our goal is to create a comprehensive checklist of weedy species by the end of the semester. Because iNaturalist requires you to indicate a location on the map where you found the plant and took the photo, we will be able to develop sub-lists of weedy species by different vegetation management units (e.g. Logan Creek, Roof Ecology Research Lab, Labyrinth). Of course some spring ephemerals may be missing.

1. Because there is a mapping function to the iNaturalist software, we will use a random meander technique for this inventory. We will cover the **entire** KPU Langley Campus (North Campus - Field Lab, and South Campus - Logan Creek) - wherever your feet can take you around campus - ditches, parking lots, etc.
2. Find at least 50 weedy plants (50 of a single species or 50 different plant species). While you must submit your own plant records (individually and independently), it's OK to wander around with a classmate for safety, and to help each other with ID. Feel free to work on the Project outside class time, whenever you have a few minutes.
3. Some possible search strategies -
 - a) find 50 different locations for the same plant species by wandering around campus wherever you feel like e.g. 50 different records for *Rumex acetosella* or *Iris pseudacorus*.
 - b) find all the weedy species in several geographically-defined areas of campus e.g. Music Garden.
 - c) wait for a class lab when we will collectively blitz an area of campus that no one has been to.
4. Take a photo and upload to the Project iNaturalist site, turning on the satellite image tab on the map and then zooming in to pinpoint where you took the photo. Again the website is at <https://www.inaturalist.org/projects/kpu-langley-mc-weed-bioblitz>

For advice on how to take a better photo watch this one minute video <https://vimeo.com/167341998>

5. When you submit a photo, iNaturalist will make some suggestions for the name of the plant. A list will pop up. Do not simply click on the first suggestion. As you are in upper-level degree courses, you must tentatively identify the plant Genus and Species. Family is not good enough, and that is often what pops up first. Because this is a research quality project, your identification must be verified by 2 experts. Expect rejections, and suggestions for changes to your original ID.

6. If you are unsure what the weed is, collect a specimen and try keying it out or asking someone for suggestions. PLEASE do not randomly pick a name off the suggestion list that pops up, and do not just pick the Family or Tribe names. This is a chance to test your knowledge and build confidence in identifying plant by visual recognition.
7. Once the Project Map starts to populate, we will have a better idea of where we will try doing a collective blitz (see 3(c)) above.
8. We are looking for quality and consistency in data collection. The data will give us an idea of relative abundance and availability for harvesting limited or bountiful quantities.
9. Even though this is not a race you will note that iNaturalist keeps track and a tally of the photos/data you upload.
10. If you know the full botanical name of a plant submitted by someone else in the Project, feel free to confirm their record.

Montgomery ANTH215 Instructions:

We will carry out this “bio-blitz” as an actual archaeological survey. To do so we will act as one field team walking transects across the Montgomery College campus identifying weed species visible within each of our transects based on the methods introduced in class.

1. Go to iNaturalist and register. <https://www.inaturalist.org/> Download the app if you have access to a smartphone; alternatively, you can use a camera and desktop/laptop. The app is ready to use if you have an Android, look for an email to finish installing if you have an Apple phone.
2. Read all the tabs in iNaturalist and become familiar with the how-to details of the app. Watch the how-to videos on Vimeo - how to use the app <https://vimeo.com/162581545> and how to take a better photo <https://vimeo.com/167341998>
3. Begin writing in your field notebook with an entry for this field session. Follow the field notebook guidelines distributed in class. Remember, you must include today’s date, a description of the field task, why we are doing this, and observations as you carry out the survey.
4. Begin walking your assigned transect or grid, taking pictures of any weed species you find and submitting it to iNaturalist. Ideally, you will locate between 10-20 weedy plants for ID. Don’t worry if everyone in the class finds the same plant species. That data will give us an idea of relative abundance and availability for harvesting limited or bountiful quantities.

Notes + Questions



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