Leveling up your Field Trips: Integrating Geospatial Skills and Citizen Science

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Welcome!!!

Please take a sticky note and write down your favorite place to take a field trip!!

Agenda

- Ways to integrate mapping into field trips (20 minutes)
- Cool tech tools! (60 minutes)
  - Field maps- 20 minutes
  - ArcGIS- 40 minutes
- Q & A- resource slam (10 minutes)
  - QGIS
  - Google MyMaps

Ways to bring mapping in to your field trips

- Focus
  on Citizen Science and data collection!

- Create StoryMaps

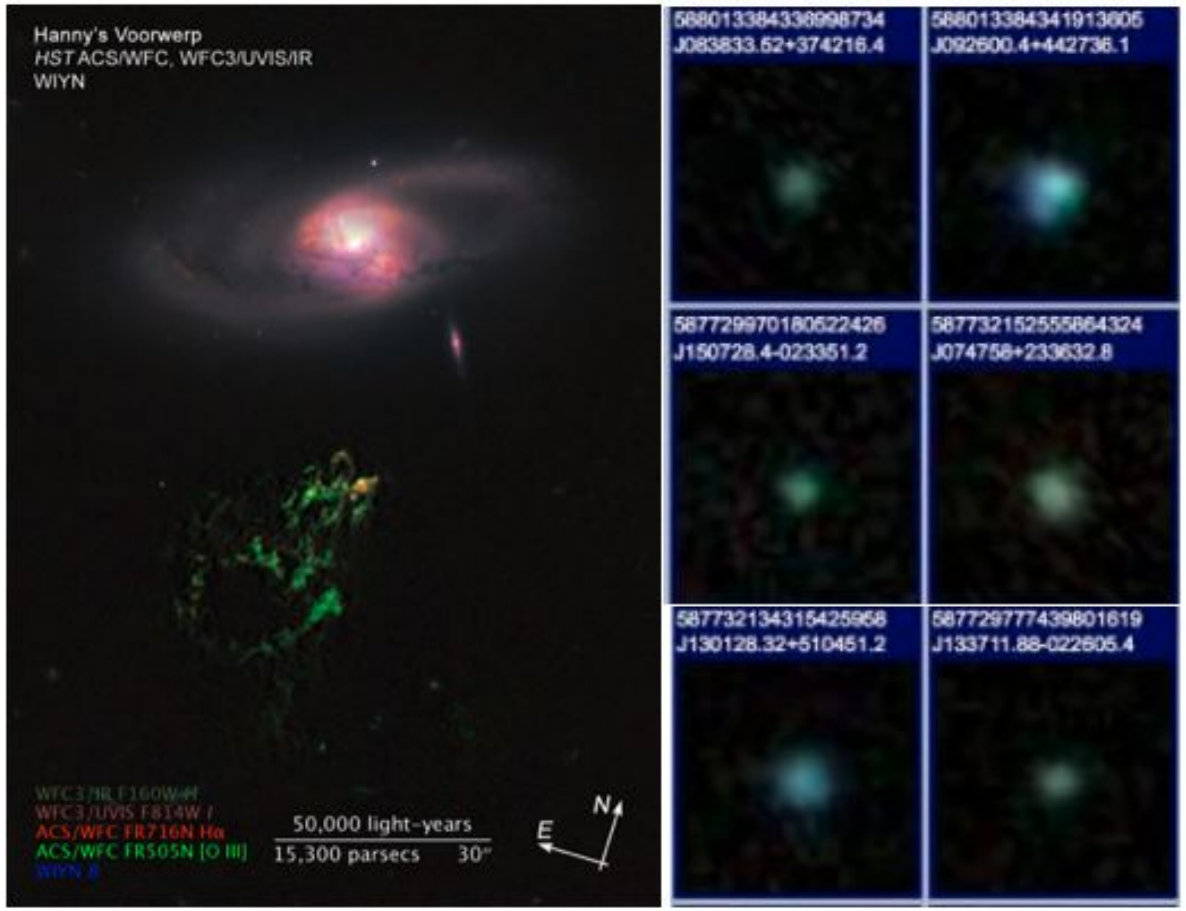
Citizen science - Julia

The Crowdsourcing and Citizen Science Act (2016) defined citizen science as “a form of open collaboration in which individuals or organizations participate voluntarily in the scientific process in various ways.”

Other terminology: “community science,” “participatory science,” “Public Participation in Scientific Research,” etc.

Popular projects and platforms

- Wildlife monitoring
  - Audubon Christmas Bird Count
- Environmental monitoring
  - GLOBE Observer
- Astronomy
  - Galaxy Zoo



scistarter

Science we can do together.

https://www.zooniverse.org/projects/zookeeper/galaxy-zoo-weird-and-wonderful/about/research

CHRISTMAS BIRD COUNT

Why use citizen science in the classroom?

- Active, hands-on learning
- Skill development
  - Supports a scientifically literate community
- Place-based relevance
  - Identify areas of interest in the community
- “Anyone, anywhere can be a scientist”
  - Community engagement, lowers barriers to entry
- Improve student understanding and confidence
  - Empowers them to take ownership of a project

https://www.nps.gov/jela/citizen-science-at-the-baratari a-preserve.htm

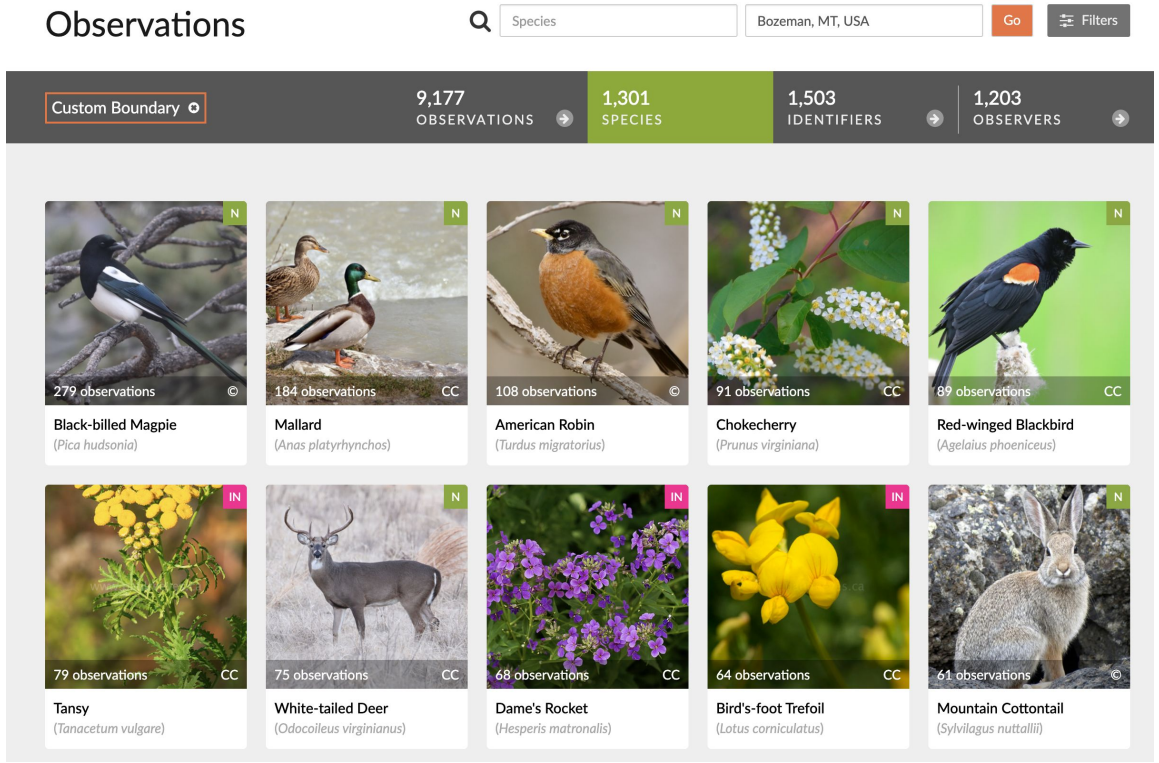
Field study: Local biodiversity

Visit a local park and document wildlife using iNaturalist

1. Make observations
2. Develop questions and hypotheses
    - Ask questions pre-project... what species might you see here, are they different than other species you might see at home, why, etc.?

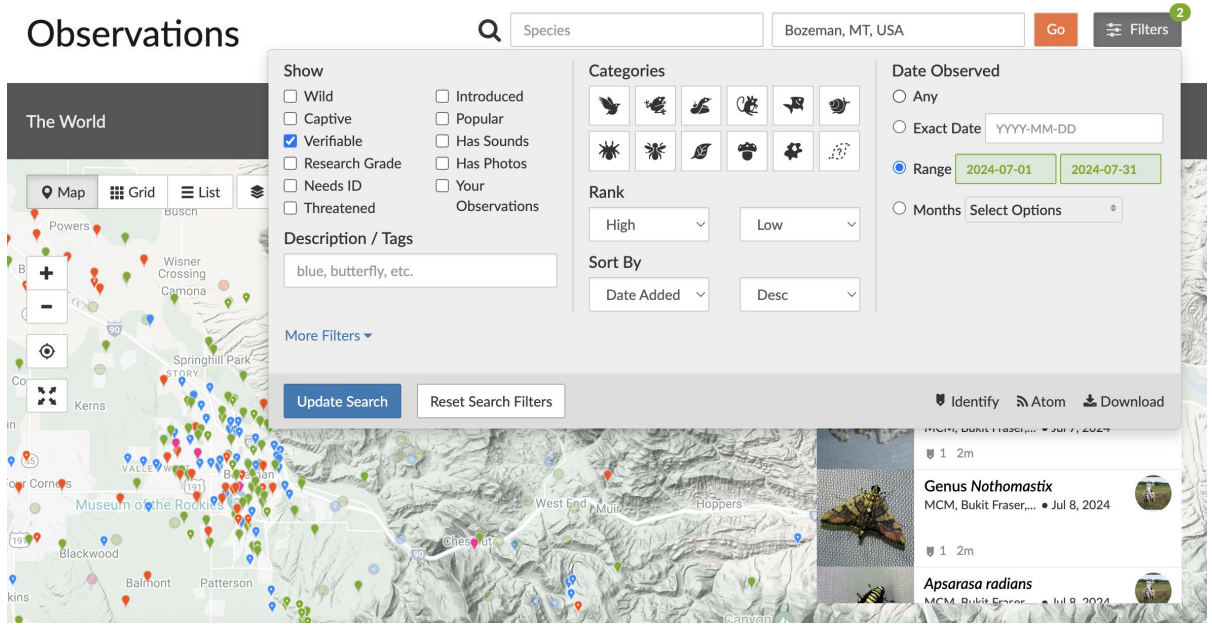
Field study: Local biodiversity

1. Develop a plan
   - Gather notebooks/data sheets, field guides, and smartphones (for iNaturalist app, pictures, and GPS)
   - Decide on search area
   - Have students note species names, GPS coordinates (latitude and longitude), date and time, photos (optional), additional notes/information on their datasheets



Field study: Local biodiversity

1. Analyze and interpret data
   - Consolidate data into one Google/Excel sheet (or use FieldMaps!)
   - Double check student findings for accuracy and make sure species names are consistent
2. Organize evidence and share results
   - Upload data to ArcGIS Online!



Online platforms

iNaturalist

Citizenscience.gov

Zooniverse

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Story Maps- Jeannie

- Multiple software platforms can allow you to create StoryMaps, which combine the power of storytelling with the concepts of mapping. We have some examples of StoryMaps that can be used in multiple settings!
  - https://nativeland.info/storymaps/
  - https://storymaps.arcgis.com/stories/578fc5ff411b43c1968ce4233b89839b (Shakespeare's play settings)
  - https://storymaps.arcgis.com/stories/0c32c5fbe984498883912d1993df8976

Cool tech tools!

- We would like you to make a public ArcGIS account while we are "playing around"
- All educators are also able to make a free educator account and this can then be used to make student accounts (ask during Q & A session if you want to know more!).
- If you can, we would also love for you to download FieldMaps, which is also an ESRI product that let's gather data in the field to map back in the classroom.

ArcGIS quick overview-Jeannie

- ArcGIS is essentially a digital mapping program. It has both online and downloadable versions.
  - Let's play around on ArcGIS online for a bit!

ArcGIS Field Maps-Jeannie

- If you have a phone, feel free to download ArcGIS FieldMaps. This is one of *several* ArcGIS-related apps that are handy for taking field measurements that will sync with your online ArcGIS account!

Using ArcGIS to map

Q& A/ Other cool tech mapping tools!

- QGIS
- Google MyMaps
- NatGeo Map Maker

Wanna hear from other educators?