"DOCUMENTING THE OCCURRENCE THROUGH SPACE & TIME OF AQUATIC NON-INDIGENOUS FISH, MOLLUSKS, ALGAE, & PLANTS THREATENING NORTH AMERICA'S GREAT LAKES" [GLIS]

Aim (Plant side): digitize specimens of 43 [49] genera of plants from North America that include species known to be invasive in the Great Lakes region.

19 [28] Great Lakes participants

lead: WIS

"Hubs": F, MICH, MOR, NY

Other participants:

- BHO, BUT, ILL/ILLS, MIL, MIN, MSC, MU, ND, NYS, UWL, UWM, UWSP
- Michigan Small Herbarium Initiative (10 in yellow)
- Canadensys (http://www.canadensys.net/)
- currently has 800K vasc. plant records from 12 herbaria

One advantage: ILL/ILLS, MICH, MIN, MU, WIS worked with NY on imaging for the Tri-Trophic TCN

https://www.idigbio.org/content/digitization-tcn-great-lakes-invasives-collaborator-map

GLIS WORKFLOW – COLLECTION MANAGER/CURATOR

Prepare specimens for imaging [Pre-curation]

- **Specimens already barcoded** (e.g., in-state specimens) **- only imaging needed**
  - Data may be complete or "minimal"; *ideally*, assume data ***is*** present if barcoded.
  - Nomenclature *likely* is current - if not, see "Check/Update nomenclature" below.
  - "First barcode" tag marked with name of taxon and inserted above 1st specimen of that taxon
  - Mark genus/case as ready for imaging
- **Specimens not barcoded** (e.g., out-of-state specimens)
  - Will be barcoded (skeletal records created) and then imaged
  - Check/Update nomenclature – we use "filed by" names in project
    - Check names against Tropicos/FNA; *not* a formal annotation (ID NOT checked). Folders tagged so Herbarium Assistant can pencil new name on sheets
    - May result in some collection rearrangement/refoldering (add/remove genera, species)
  - Segregate any needing repair
  - Mark multiple sheet and mixed collections, pull duplicates, discover types
  - "First barcode" tag marked with name of taxon and inserted above 1st specimen of that taxon
  - Mark genus/case as ready for imaging

(Later) Mark genus/case as completed

GLIS WORKFLOW – EIT'S AND PROJECT MANAGER

Electronic Imaging Technicians [EIT]

- Retrieve specimens from collection as directed by CM/Curator; mark pigeonholes
- Barcode specimens + create skeletal record (Excel, Access, App) – if needed
  - Skeletal record = barcode + taxon name [+collector,#, state]
- Add barcode # to "First Barcode" tag when starting a new taxon
- Image the specimens [lightbox]; image name = barcode #
- Return specimens to Collection
- Move to next genus

Project Manager

- Process the images – Adobe Lightroom; add metadata, color correct, create DNG/JPG
- Rename files, adding "MICH-V-" as a prefix
- Use "First Barcode" tag to help sort/store all images by taxon locally
- Load images + data (complete or skeletal) records to Symbiota portal(s)
- OCR performed at WIS on images with skeletal data loaded to portal
- Perform Label Transcription (via Symbiota GL portal), Georeferencing as necessary