

REAL WORLD CHALLENGES

In Managing Data



THE HOLLY CHALLENGE

All these data management tools sound impressive but can they really solve all of our data management issues?

And there is the challenge!!!

So what about...

SCENARIO #1

Russian Nesting Dolls- samples within samples

For Example:

Fish > Gonads

Lizard > Stomach Contents > Parasites

Coral head > Crabs > Tissue samples

Plant > All bugs from plant > Single type of bug



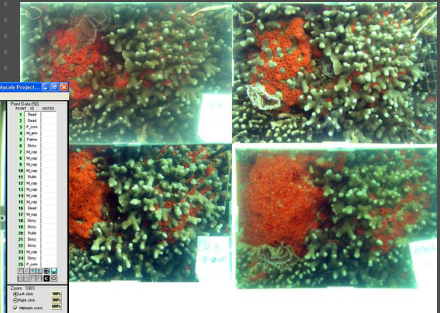
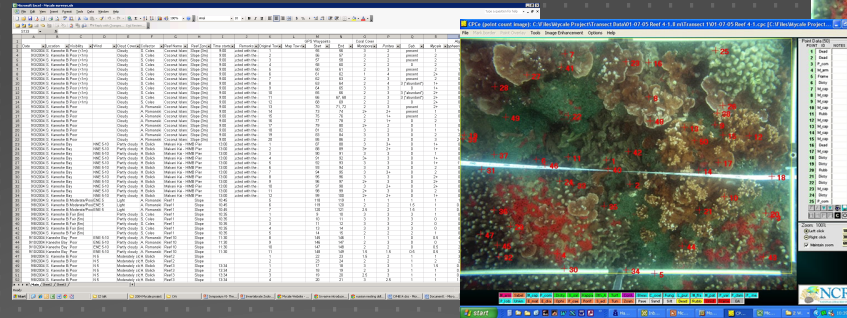
SCENARIO #2

Multi-media linkage (and accessibility)

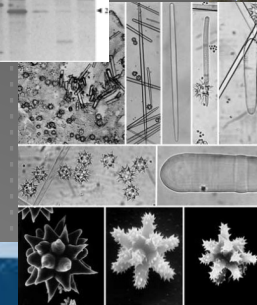
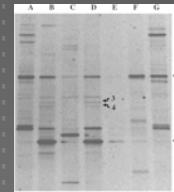
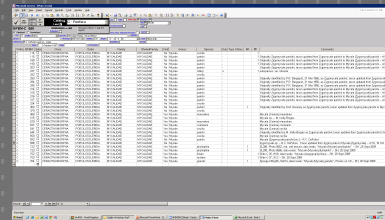
Specimen with:

- Field notes
- Field pictures/videos
- Other data collected in field
- Full collection data (specimen metadata)
- Taxonomic analyses (SEMs, measurements)
- Genetic analyses (sequence data, haplotypes)
- Biogeographical, chemical, and other research analyses
- Reports, manuscripts, monographs
- Websites or other online resources
- Educational or outreach informational links

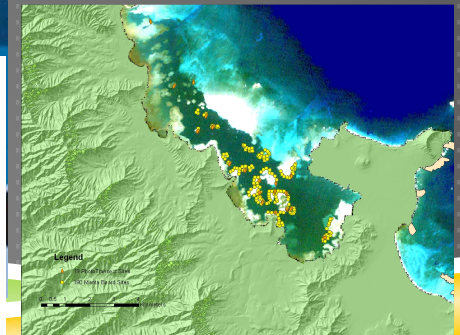
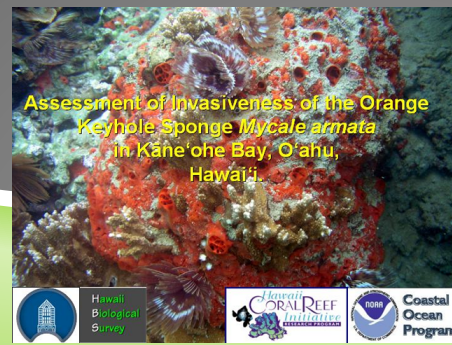
► Pre-curation



► Curation



► Post curation



SCENARIO #3

Multiple occurrence data

Resampling of a whole organism (not collected initially, only sampled)

Different types of information gathered for different research purposes

For Example:

- Shark that is tagged, released and tracked over time
- Tree that is revisited and resampled
- Coral head that is revisited and resampled



SCENARIO #4

“Many to many” relationships

One physical object collected with multiple taxa on it... and you can't (or don't want to) break apart the object!

How do you register, database, and store these?



For example:

- A coral rubble rock with multi-phyla samples on it (sponges, bryozoans, boring bivalves, crabs and shrimp, tunicates)
- A fossil rock with multiple paleo samples in it
- A fish specimen with multiple parasites that are left intact



SCENARIO #5

Specimen “soups”



Container of mixed plants or animals

How do you manage metadata for these things to make it available for researchers even though it's unsorted, unidentified, and unregistered?

For example:

- Jar of ocean (plankton tow, harbor piling scrape sample)
- Stream sample (insect specimens and body parts)
- Soil sample (various flora, fauna & microbes)
- Algal samples (diatoms, seagrass, coralline algae, etc.)

SCENARIO #6

Biological occurrence data from non-biological collections (Ethnology)

For Example:

- Octopus lure with cowrie shell and wooden stick
- Feather capes and ornaments with bird feathers
- Woven mat with plant material
- Fish hooks and jewelry made of bone or shell
- Ceremonial hats made with fish skins



SCENARIO #7

Your turn 😊
Time for discussion!

Questions/Comments?

Thank you!

