[E2] Research Support Services and the Role of the Libraries in the Lone Cabbage Oyster Reef Restoration Project

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Date: Tuesday, June 14, 2022 **/** 1:15 pm – 1:30 pm

Event: 17th International Digital Curation Conference (IDCC22)/Virtual

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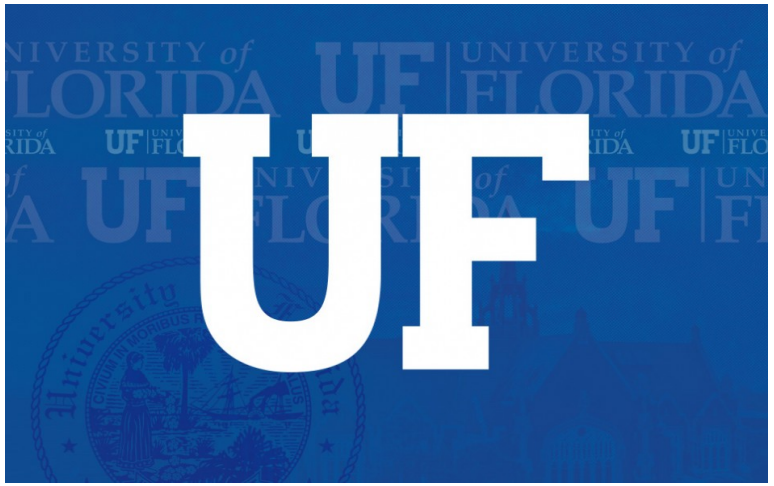


- Established 1853
- Carnegie classification – R1: Doctoral Universities – Highest Research Activity
- Public land grant university on 2,000 acre campus
- 54,000+ students; 5000+ faculty
- No. 5 for Public Universities in U.S. (U.S. News & World Report Ranking)
- Located in Gainesville, Florida USA
- State University System of Florida

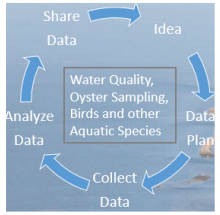
Lone Cabbage Oyster Reef Restoration Project

- Title: Recovery and Resilience of Oyster Reefs in the Big Bend of Florida
- Funder: National Fish and Wildlife Foundation (NFWF) grant
- Funding amount: $8.3 mil.
  - Sub-award to Libraries: $73,673
  - Start date: 9/1/2017
  - End date: 8/31/2022

Project background and research support services

8 year lifecycle

- Plan Reef construction
- Develop Monitoring
- Construct reef
- Post monitoring
- Outreach
- Data management
- Project administration



Data management

- Database development and implementation
- Geographic information systems support
- Data versioning, storage, and archiving
- QC/QA, visualization, and reporting

UF Libraries' ARCS

- Academic Research Consulting & Services
- Successful DMP led researchers to ARCS
- Sub-award
- Coordinate/integrate with researchers/staff
- Weekly project mtgs.
- In-house consultants with expertise for each phase of project's DMP

Fig. 1 – Some project background, activities, and project setup tasks

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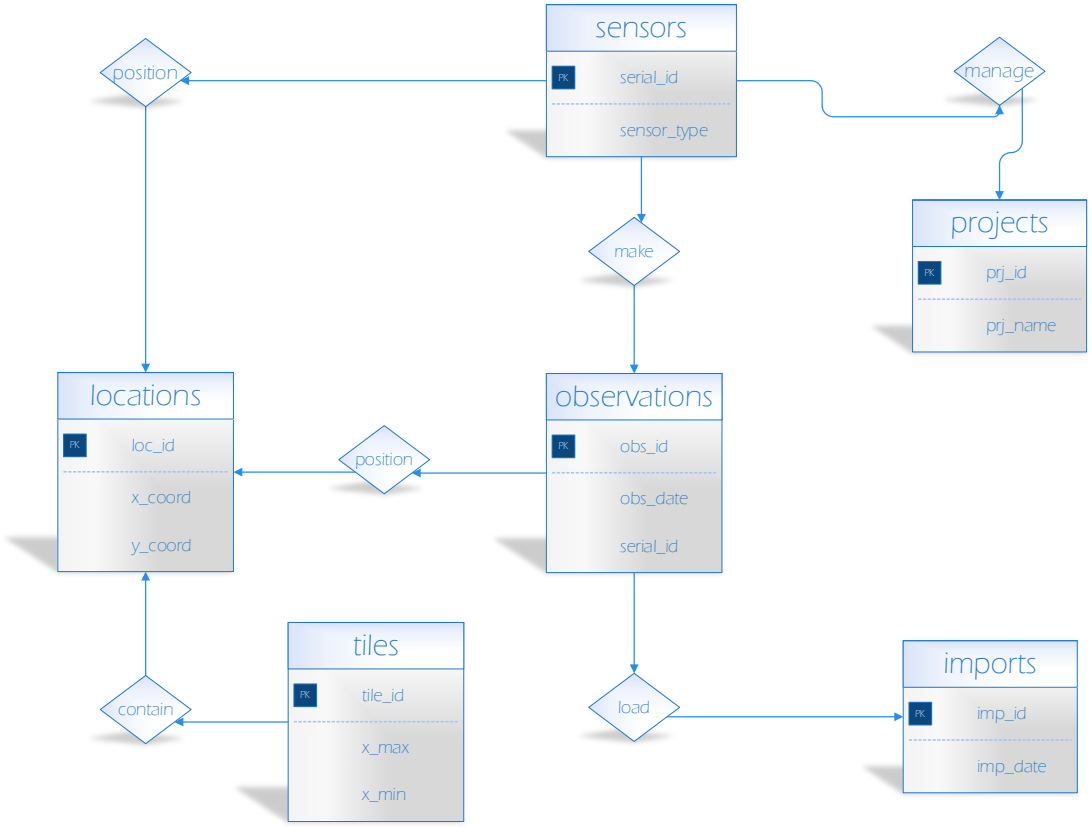
The sensor database model design and definitions



sensor_id	**PK – internal id assigned to each sensor by MySQL.**	**N/A**
project_id	FK- referecing the project that is linked to the sensor	
Location_id	a location identification number that can be given to fixed sensors, PK – internal id assigned to each location by MySQL	
sensor_type	The type of sensor. Valid values include: ‘Fixed’,’Mobile’,’Human’ as stored in table lookup_values with lookup = ‘sensor_type‘	N/A

Fig. 2 – Developed by the Informatics Librarian

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The water quality physical data model

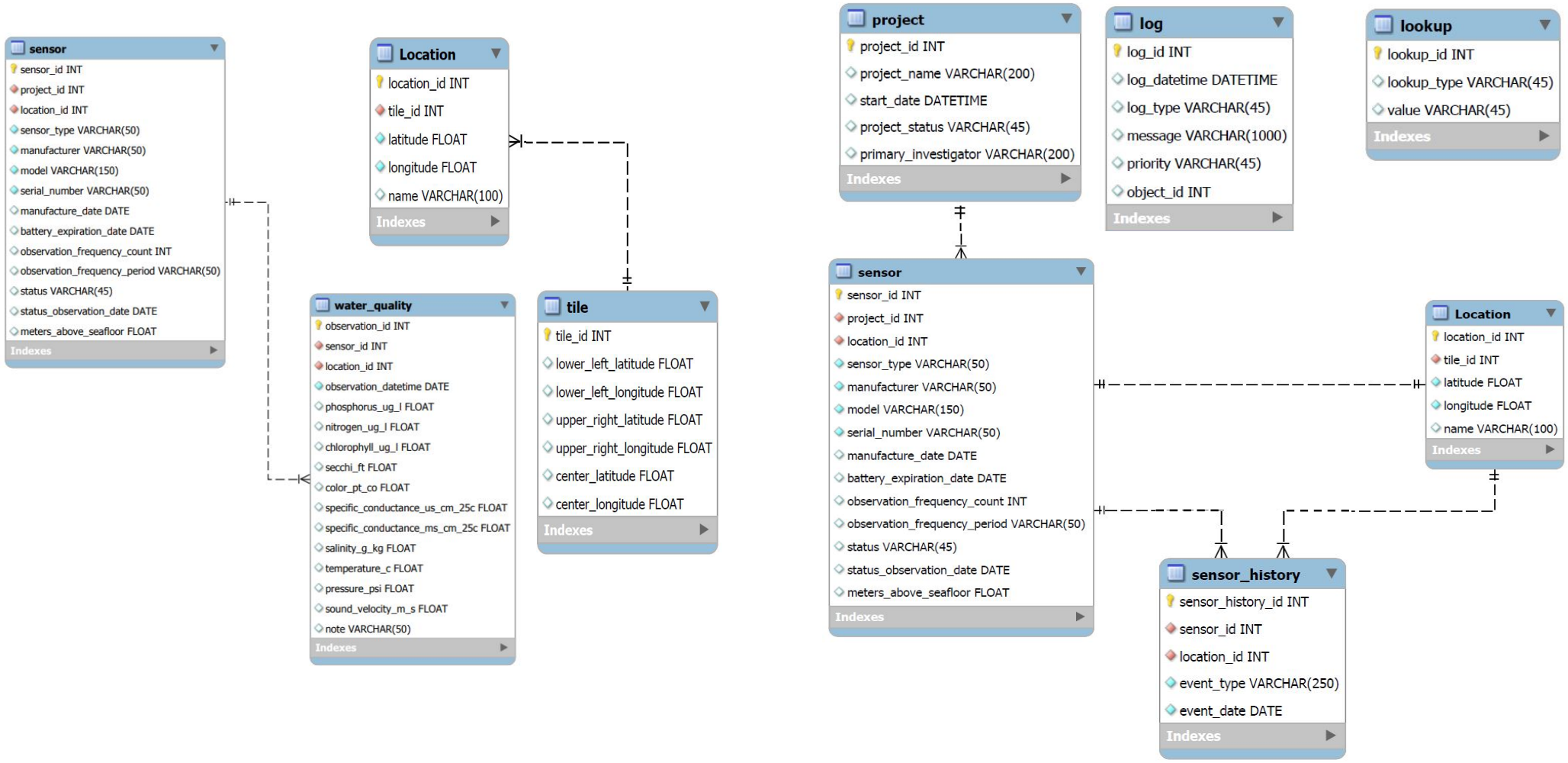
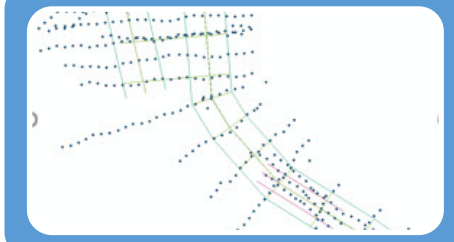


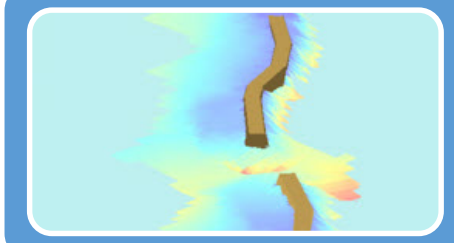
Fig. 3 – Developed by the Informatics Librarian

Surveys, Rasters, and Contours



Surveys, Triangulated Irregular Networks (TINs), Rasters, and Contours

Modeled Reef Restoration Pad TIN and Raster



3D Oyster Reef Construction Model and Estimated Fill Volumes

Fig. 4 – Developed by the GIS Librarian

Lone Cabbage Oyster Project in generalist data repository with final datasets

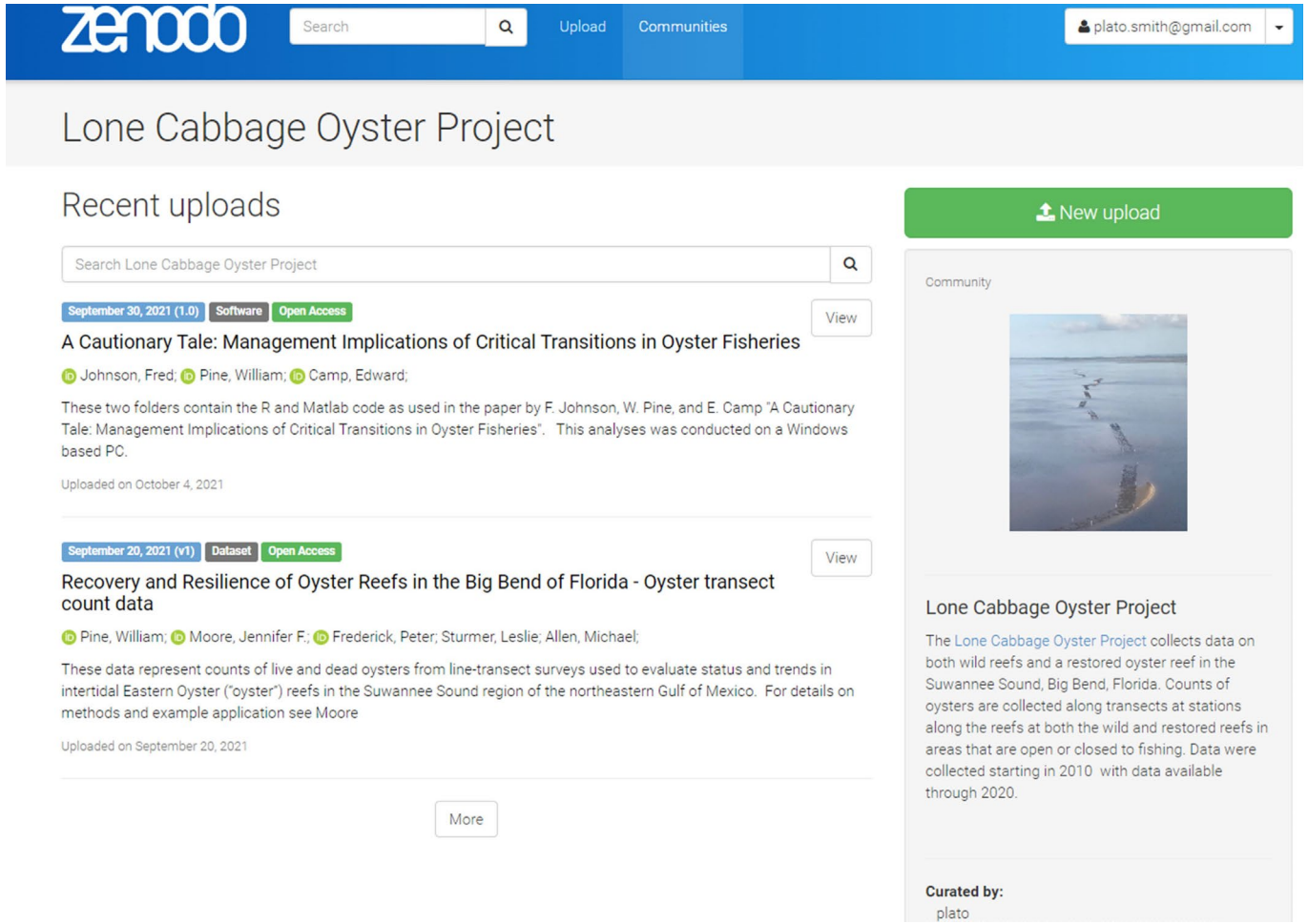


Fig. 5 – Developed by the Data Management Librarian

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A few lessons learned

Commitments made in the grant

- Long-term grants in Academic programs have challenges of staying focused
- Multiple graduate students working on project with varied research ideas and methods
- Solution: use a series of rigidly enforced definitions, guidelines, and methods (protocols)

Project management

- Integrating the Libraries into campus departmental project management is being flexible to the departmental differences in investigative organizational cultures (people/process)

Exit strategy

- Research support consulting services make the project self-supporting after 3 years
- The Libraries provided institutional knowledge of the project to enable continuity amongst the turnover of PIs, staff, and students

Brief assessment questions for one of the co-PIs regarding research support services

1. How did the Libraries provide research support services for your Lone Cabbage Oyster Reef Restoration Project?
2. Did collaboration with the Libraries meet your expectations?
3. How can the Libraries improve research support services for other funded projects in the future?

Answers from the co-PI regarding the Libraries' Research Support Services and Role

1. "**The Library provided critical guidance** to create a modern 'living data' platform and workflow to inform the restoration of Lone Cabbage oyster reef in Suwannee Sound. The platform developed with the library team has worked exceptionally well to help inform research and guide restoration efforts as well as efficiently meet standard reporting requirements to funding agency.
2. Far exceeded.
3. I will always include the library program in future funding efforts. I think some improvements could be made such as "hosting" the database we developed under the UF library and not UF IT umbrella, but that is really it**. I also wish we could bump up your salaries for your help**."

Blue-ribbon cutting ceremony

- The blue-ribbon cutting ceremony was December 10, 2018.
- It was next to a floating barge 12 miles off the coast of Cedar Keys.
- The ceremony included many researchers, scientists, students, contractors, and prominent residents of Cedar Key.
- The Libraries were acknowledged and given commemorative oysters with Lone Cabbage Reef Restoration and date stamp.
- The Libraries' representatives included a UF Libraries IT Developer and the Data Management Librarian.
- The Director of UF Nature Coast Biological Station shared the Libraries helped him secured a $285K NSF grant.
- One researcher shared, "I did not know the Smathers Libraries do this kind of work [assisting researchers/ARCS]."
- A drone circled above recording the blue-ribbon cutting ceremony.

Dedication

This presentation is dedicated to Robert Phillips

References

- Aufmuth, Joe. (2018, March 23). UF's Lone Cabbage Oyster Reef Restoration Project: a use case in implementing a data management plan (DMP). Zenodo. https://doi.org/10.5281/zenodo.1206154.
- Lone Cabbage Oyster Project. (2021). https://zenodo.org/communities/uf_ifas_oysterproject/.
- Pine, William. (2021). Recovery and Resilience of Oyster Reefs in the Big Bend of Florida - Data Management and Access Plan. Zenodo. https://doi.org/10.5281/zenodo.5522969.
- Pine III, W. E., Johnson, F. A., Frederick, P. C., & Coggins, L. G. (2022). Adaptive Management in Practice and the Problem of Application at Multiple Scales—Insights from Oyster Reef Restoration on Florida's Gulf Coast. *Marine and Costal Fisheries*, *14*(1), e10192. https://doi.org/10.1002/mcf2.10192.

Thank you

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