**Lone Cabbage Reef Restoration Project: Research Coordinator Duties/Status**

Prepared February 7, 2020 by Steve Beck

Location: T:\Oyster Project\oyster\_project2\project\_task\_working\t8\_proj\_admin\beck\

Weekly summaries: Given multiple project PIs and frequent changes in project plans, these summaries are required to keep record of daily activities/time management and to notify project PIs of current priorities. Summaries should include daily breakdowns of tasks completed, time spent per task, and dates when guidance is received in relation to expected completion dates.

Examples: T:\Oyster Project\oyster\_project2\project\_task\_working\t8\_proj\_admin\beck\weekly\_summaries

Expense Reports: These should be completed as soon as possible after purchases are made. Hard copies are kept in a folder in the desk drawer. Save scans of receipts and expense reports in the same folder, labeled with date of submittal to WEC Fiscal. Past purchases, template form, state tax exemption certificate, amazon UF account setup instructions, and amazon purchase history are here:

T:\Oyster Project\oyster\_project2\project\_task\_working\t8\_proj\_admin\purchase

Tips: - LC Project charge codes are here: T:\Oyster Project\oyster\_project2\project\_task\_working\task\_list.doc

* The amazon purchase history is vitally important, see title column
* International online purchases will flag your card and online purchases will be prohibited
* Theresa Loper is the PCard office contact for issues.
* You need a special Walmart card from customer service to make tax exempt Walmart purchases
* At time of purchase simply say you are with UF and the purchase is tax exempt
* We have UF WEC accounts at the Cedar Key hardware store and Southern Cross seafood. Make sure they don’t confuse you with Leslie’s group/account.
* Ask for an itemized receipt at the Suwanee Marina (their normal receipts just show the total)

Truck/Boats: Truck logs need filled out after each use and scanned/emailed to WEC Fiscal and Cameron Carter by the fifth of each month. Oil changes/UF inspections are done at UF Motor Pool, all other repairs are to be done elsewhere. We usually take them to Computatune on 34th. Periodically check fluids, tire pressure, and monitor for issues that may require repair (odd noises, performance issues, etc). Trucks should be refueled if below ¾ of a tank.

The gasoline fob to use at Motor Pool is kept in the dash for the Chevy and the F-150, and on the truck key for the F-250. All extra truck logs are kept in the clip board in the F-150.

Past truck logs are here: T:\Oyster Project\oyster\_project2\project\_task\_working\t8\_proj\_admin\logs\truck\_logs

Current Trucks: 2017 F150 (5584), 2005 Chevy Silverado (3783), and 2020 F250 Diesel (6156).

Boat logs are filled out roughly monthly and are meant to track general trailer mileage and repairs. General trailer checks should be completed before each field trip (lights, bearing tightness, winch strap, safety chains). Tire pressure checks and greasing bearings should be conducted quarterly. Oil changes should be done every 50 motor hours. Fuel should be emptied and motor run out if no anticipated field use planned. Boats should be run once a month (Newnan’s Lake). We currently use Dallas at Midnight Marine for onsite boat repair (scheduling: 352-328-4757, his phone: 386-965-4676).

Boat logs are here: T:\Oyster Project\oyster\_project2\project\_task\_working\t8\_proj\_admin\logs

Current boats/REPAIRS NEEDED:

Levitator/Alumitech airboat: None

Carolina skiff: odd mild screeching noise, sounds like a bad belt (motor cuts out when trying to start it after a few hours of use)

Scandy: Motor cuts out at odd times. Possible fuel line issue per Cameron.

Phlips Boat: Definite fuel line issues in motor, switch is to be replaced by Dallas

Safety/Hurricane Plans and Injury Forms:

T:\Oyster Project\oyster\_project2\project\_task\_working\t8\_proj\_admin\plans

Field Planning: I review primarily weather underground, NOAA, and Windfinder for weather forecasts, and the NOAA Cedar Buoy and Suwannee River Entrance station on Tides.net for tides (links below). I typically wait until the day before to email float plans due to weather (template below), but make sure field help and backups are given as much notice as possible. RECOMMEND GETTING SPOT DEVICES

Tips: - For 50% chance of storms days: If the forecast stays the same for a week, I’ll be more likely cancel, but if the forecast is variable, I’ll be more likely to go for it

* Winds >10knts out of the NE for a day or two can really drop the tides lower than forecast
* Completing the WQ sensor servicing trips is difficult at the lowest tides.
* Tide code for estimating oyster sampling work dates/times is here: <https://github.com/LCRoysterproject/tide_inundation>

Links:

-<https://www.wunderground.com/forecast/us/fl/cedar-key/32625?cm_ven=localwx_10day>

-<https://marine.weather.gov/MapClick.php?lon=-83.11347758789061&lat=29.254686739685155#.Xj2UdzFKiUl>

-<https://www.windfinder.com/forecast/cedar_key>

-<https://tidesandcurrents.noaa.gov/waterlevels.html?id=8727520>

-<https://www.tides.net/florida/2690/>

Float Plan Template:

|  |  |
| --- | --- |
| Date |  |
| ​Meeting place (time) |  |
| Launch (time) |  |
| Destination |  |
| Vessels |  |
| Trucks |  |
| Expected Time Off Water |  |
| Backup |  |
| Participants |  |
| Activity |  |
| Required Gear | -Weather-appropriate amphibious clothing  -Field day bag |
| Emergency Contact | **Field Crew:**  Boat issues:  call backup  Medical/Safety/Security Emergency:  call 911    **Backup:**  No response from field crew:  1)      Check launch for trailer:  -Cedar Key: call NCBS: **Kenny McCain** cell (352-493-3150)  -Suwannee Marina  (352-542-9159)  If trailer still at launch and 1-hour past check-in time, call and request help searching the area:  **2)      Kenny McCain**  3)      LSNWR: **Larry Woodward** cell (352-493-3151) |

Datasheets: All known original datasheets are stored in binders in cabinet above my desk and saved in a sheet in the data packet for each sampling type.

Misc Office Equipment: There is a blank external hard drive, several jump drives, SD cards, and SD readers, and extra keys in cabinet above my desk.

T-drive Organization: Guides to T-drive organization are found in README.txt files found throughout. Currently, most work is occurring in the T5 and T7 folders. The number of people accessing T-drive files should be limited to as few people as possible. Files should be sent to Mel for filing in T-drive.

Geospatial Database: This contains all point data associated with the project. It is up-to-date through through January 2020. I am currently waiting on the RTK elevation data from Andrew Ortega for the water bottoms at all WQ stations. There may be an issue converting to NAVD88. The data base is located here: T:\Oyster Project\oyster\_project2\project\_task\_working\t7\_data\_management\gis\master\_geospatial

A field that should be added to the database is sample “period” since that is now how we are referring to sample seasons. Dates are all ballpark

GIS file management: T:\Oyster Project\oyster\_project2\project\_task\_working\t7\_data\_management\gis

Files are stored here and meant to be copied to local machines for use. I uploaded several Arc Project folders so maps can be recreated, but working with Arc through the server is slow and painful.

Oyster Sampling Random Draws: Materials and instructions are provided here: T:\Oyster Project\oyster\_project2\project\_task\_working\t7\_data\_management\gis\shapefiles\oys\_station\_draw

Juniper Geode GPS: The protocols for using this unit in conjunction with ArcGIS and ARCGIS Online are here with the example from winter 2019-20 sampling: T:\Oyster Project\oyster\_project2\project\_task\_working\t7\_data\_management\gis\juniper\_geode

In order to use Arc GIS Online, Tom Barnash needs to add you as a “researcher” and you need to join the “Lone Cabbage All Stars” group. All logins are done through Enterprise using your UF name/password. Jaime and Tyler R are trained in this process.

Oyster Sampling Followup: Scan datasheets and place pdfs in appropriate T5 folder with pictures and protocols. Enter data using dual entry system into the appropriate packets found on the project git page (can request from Mel). Once data is QA-QCd, upload to git, or send to Mel. Export GPS coordinates from ArcGIS Online into generic ArcProject, add XY coordinates and update master geospatial database and lc\_oys\_station shapefile.

Water Quality Sensor Servicing Trips: All Gear is either in lab or boat shed cage. Tyler R and Jaime are trained with servicing these sensors and conducting lakewatch sample collection. They will send WQ sensor files and scanned datasheets to Mel after each trip. There is a hard copy of the protocol/ datasheets and maps of sensors in the water quality clipboard. Electronic Protocol/datasheets/supply lists are located here:

T:\Oyster Project\oyster\_project2\project\_task\_working\t7\_data\_management\wq\protocol

**Tips**

* Plug lap tops in the night before
* Don’t forget to bring the numbered zip lock bags for spat plates
* The protocol says this is ideally done with 3 people but is still very doable in one day with two people.
* The big orange buoy is not attached to the sensor/spat plate. You’ll need to locate the small red buoy that is usually just under the surface with in a few feet of the big orange buoy.
* If you cannot find the small buoy, run the boat hook down the line connected to the big orange buoy, the sensor/spat chain gets tangled on that line sometimes
* If a diver needs to be brought back to the lab, you can clean off any fouling by submerging the diver in vinegar overnight (there is a big bottle in the cabinet under the computers in the lab)

Spat Collector Sampling/Data: Jaime and Tyler R are trained in this process and will send data files to Mel after monthly sampling events. Protocols are found here:

T:\Oyster Project\oyster\_project2\project\_task\_working\t7\_data\_management\oyster\spat\protocol

**Tips**

* The protocol says there are oyster shells deployed but there are not, just the spat tiles
* Deploy new tiles with the bottom (rough side) facing the knot
* Tiles can be frozen until there’s time to count them, just dunk them in water to defrost them when you’re ready to count them
* There are clicker counters in the lab
* Barnacle coverage is categorized by none, light (covers less than a third of the side) moderate, and heavy (covers more than 3/4s of a side)

The code to create the quarterly report figures and other analyses are here: <https://github.com/sbeck1/Beck_LC_R/tree/master/Oyster/Spat>

I generated a summary report which mainly contains summary figures. I began running analyses looking at relationships with water quality metrics with known meaning to oyster reproduction/biology. There are several preliminary GAMs that have been run with the goal of forming a model for predicting the major spatfall events. Model fit is not great, need to try temp change metric instead of thresholds…

Invertebrate Data:

Summary figures and draft report are found here:

<https://github.com/sbeck1/Beck_LC_R/tree/master/invert>

I discussed this thoroughly with Tyler C. After generating summary figures I dove into the literature to determine the next steps for analysis (in T3 invert folder). I thought the BENFES index using the AMBI values looked promising (Sanchez-Moyano et al. 2017). Next step was to look at species-environment interactions (CCA) and compare results to Brooks and Sulak 2005 and Harris et al. 2005. We have supplies if it is determined we need more sampling, and the pole corer is in the boat shed cage. Besides community change through time/salinity effects, I’m curious if LC Reef could increase sediment organic carbon content inshore of the reef (a dam for organic material).

Sonar Data: Rob Ahrens Sonar unit is in my office. Data from the June 2018 surveys is in the T3 sonar folder and I discussed with Tyler C. Suggest surveying small areas only with a small timeframe around high tide. The sub-tidal oyster reef area around northern LC Reef is massive and should be mapped as well, perhaps just with basic poling surveys.