



IRL COUNCIL STEM ADVISORY COMMITTEE

Minutes from the Tuesday, November 5, 2019 Meeting

Up the Creek Farms, 3590 Valkaria Road, Grant-Valkaria, FL 32950

Attendance: Anne Birch, David Cox, Robert Day, Frank Golan, Barbra Welch for Patti Gorman, Charles Bostater for Kevin Johnson, Rich Poperno, Beth Powell, Leesa Souto, Megan Stolen, Chad Truxall, Eddie Widder

Agenda Item 1: Call to Order and Pledge of Allegiance

Dr Jacoby called the meeting to order at 9:09 a.m. and led those present in the Pledge of Allegiance.

Agenda Item 2: Agenda Revisions

None

Agenda Item 3: Minutes Approval

Requested Action: Approval of Minutes from STEM meeting on August 6, 2019.

A MOTION WAS MADE BY DAVID COX, SECONDED BY ANNE BIRCH TO APPROVE THE MINUTES FROM THE AUGUST 6, 2019 MEETING. MOTION CARRIED UNANIMOUSLY.

Agenda Item 4: Introductions

Members, guests and IRLNEP staff introduced themselves. Duane De Freese introduced Kaylene Wheeler as the new Special Projects Coordinator for the IRLNEP.

Agenda Item 5: Public Comment

None

Agenda Item 6: Water Quality Report

- a. Dr. Chuck Jacoby, northern and central IRL
Chuck Jacoby gave the water quality report for the northern and central portions of the IRL.
- b. Katie Bowes, Martin Co., southern IRL
Chuck Jacoby gave the water quality report for the southern portion of the IRL, including Lake Okeechobee, from data relayed by Katie Bowes.

Agenda Item 7: Presentation/Panel Discussion:

Mercury contamination in the Indian River Lagoon, Derek Tremain, FFWCC; Megan Stolen, HSWRI; Adam Schaefer, HBOI/FAU; David Krabbenhoft, USGS

- Derek Tremain talked about Mercury concentrations in key fish of the Indian River Lagoon. It started as a collaborative effort between the FDEP, FDOH and FWS, that effort has ceased and the FWS has continued on with the effort. The key fish tested are Red Drum, Sheepshead, Sea Trout and Snook. Legal size ranges for key estuarine fishery species in the IRL are effective at protecting the public from excessive mercury exposure. Mercury levels in predatory species can be linked to their forage base, which is intrinsically tied to local habitats and environmental conditions. Mercury levels in IRL fishery species can vary among individuals, over time, and over spatial scales, in general, IRL fish are on the low end of the Hg spectrum across the Florida landscape.
- Megan Stolen talked about mercury in stranded bottlenose dolphins from the Indian River Lagoon. Mercury has been found in high levels in marine mammals worldwide, Selenium and mercury may bind so that the toxic effects of mercury are lessened, for at least part of their lifetime. Toxic effects on marine mammals include fatty liver degeneration, liver disease and decreased nutritional state, presumed neurological effects. Next steps: Evaluate results based on age estimation and sex using teeth, compare high Hg values with pathology results, collaborate with Dr. Krabbenhoft to understand sources of Hg in dolphins at various life stages and geospatial differences
- Adam Schaefer talked about Coastal and Human Health, specific to Mercury. Mercury Concentrations in IRL Dolphins is associated with changes in the function of key organs and Alterations in immune function. Mercury was found higher in multiple species in the northern areas of the IRL in multiple species often specifically the Saltmarsh impoundments, organic sulfate-rich sediment, limited tidal flushing.
- David Krabbenhoft talked about Mercury Sources in the IRL. Mercury concentrations and isotope abundances in water, sediment and fish across the IRL all show considerable variability – but consistent trends are apparent. Mercury and methylmercury in surface water and fish are highest in the northern IRL, and this area also has the highest proportion atmospherically derived mercury. Mercury concentrations in sediments, are generally highest in the southern portion of the IRL, and the greatest portion of locally derived mercury source. Snook and Spotted Sea Trout exhibit the highest Hg concentrations, but only the Spotted Sea Trout are consistently above the USEPA fish consumption advisory level.

a. Planning Documents – Brief Progress Updates

- i. Monitoring Plan; Duane De Freese for Dr. Dennis Hanisak, HBOI: gave a brief overview on the project and the team heading up the tasks. Next task will be to Organize the Steering Committee (including addition of new members) and have initial meeting; Develop draft “trial balloon” for the criteria to be included in a monitoring plan, e.g.: Monitoring vs. sampling, currently active vs. legacy data and QA/QC activities. Develop a draft Table of Contents for the report, this will help develop a scope of what will be in the report and a metric for progress toward the report.
- ii. Habitat Restoration Plan, Rob Baron, Tetra Tech, Inc: Discussed their current Scope of Work which include stakeholder meetings, develop plan scope, draft habitat restoration plan, incorporate comments, final habitat restoration plan. Additionally he spoke about how they will be aligning all outcomes with the CCMP wheel. The projected goals of the project were discussed.

- iii. State of the Lagoon Technical Report/Asset Mapping, Dr. Claudia Listopad, Applied Ecology, Inc.: The State of the Lagoon Technical Report presentation consisted of the report projected outcomes. Partners were identified and the multi year approach, tasks, timeline and outputs were presented. They will be requestinf representatives for a steering committee to guide the process soon. The asset mapping report presentation consisted of a project diescription including the ultimate goal and intregrating the data into a single repository. The fully developed program will consist of; thematic maps, cloub based mapping applications, spatial analytics and visual and analysis tools. As this will be a multi year project yeat 1 outputs were offered as well as task overviews and project timelines.
- iv. Boaters Guide; Dr. Leesa Souto, MRC: gave an brief overview of the current outdated boaters guide. Talked about the partnership between MRC and FWC/FWRI and each of their roles in the process. Discussed the outcomes expected and gave a timeline of deliverables, asked for volunteers to contribute and review. The primary contents of the new guide will be: boat ramps, clean marinas, pump outs, fishing piers, recreational facilities.

b. FL Tech overview of 2019 research funded by Florida Legislature, Dr. Ralph Turingan

Dr. Turigan offered a presentation for discussion on the Restoring Lagoon Inflow which included the three primary research tasks:

- Task 1 Modeling and Engineering: Hypothesis: controlled water exchanges can be engineered to improve flushing and water quality without the negative impacts on littoral sediment budgets linked to permanent stabilizaed inlets. Selection of locations. Setup and Calibrate a system of nested hydrodynamic and transport models. Test the potential for improved circulation and flushing of based on controlled ocean inflows to IRL. Produce a 20% percent design for water control structures at two locations that can produce the modeled inflows.
- Task 2 Biological Monitoring document baseline biological characteristics in vicinity of proposed inflow locations. Goal is to understand the current biology of proposed sites, seagrasses and drift algae, benthic fauna, phytoplankton/harmful algae, Ichthyoplankton, fishes, environmental DNA. Assess the likely biological responses to a pilot inflow project at proposed locations, environmental tolerances published in the literature, known distributions, and, in some cases, historical data to evaluate the likely impact of restored lagoon inflow on those species.
- Task 3 Geochemical Baseline: impacts of pumping on concentrations of nutrients calculate the quantity of nutrients potentially discharged into the coastal ocean. Determine if data from few existing water quality sensors can be extrapolated to determine conditions in bottom water near proposed pumping locations.

Agenda Item 8: Old Business

None.

Agenda Item 9: New Business

STEM AC discussion: issues/speakers for next meetings.

Agenda Item 10: IRLNEP Executive Director Report: Year-end highlights and looking ahead to 2020.

- a. Calendars will be printed and distributed before Christmas;
- b. 174 active projects in the IRL watershed in addition to in-house projects that are ongoing;
- c. 24 new projects for a total of 51 active projects;
- d. Multi-year communication plan is being worked on;
- e. Annual report is expected in early January;
- f. A Climate Ready Estuaries document will be developed for the public and local governments by the end of the fiscal year. The OneLagoon.org website will be finished over the next several months and the current website will be retired.
- g. Staff is in the process of developing a quarterly newsletter For the Management Conference and the public.
- h. Vital Signs video will expand into more videos on the website covering each of the vital signs as an introduction to each section of the CCMP.

Agenda Item 11: Final Comments (Committee, Staff, Public)

None

Agenda Item 12 Adjourn

Adjourned at 12:36 p.m.