Using collaborative science to assess the current and potential role of shellfish in improving water quality

Project Team Collaboration Charter
VERSION 1

Background

The overall goal of the "Using collaborative science to assess the current and potential role of shellfish in improving water quality" (Guana Nuts) project, funded through the NEERS Science Collaborative, is to assist with the development of restoration and management plans for the Guana Estuary by generating new data about the water quality and shellfish ecosystem services in the Guana Estuary (GE). Our main objectives include: 1) identifying sources of nutrients to the GE, and determining how nutrient loads from the lake to the river are affected by hydrology and land use; 2) mapping current shellfish distributions across the GE; 3) quantifying the amount of water filtered and nitrogen removed and cycled by shellfish in the GE; 4) conducting field and laboratory experiments to assess shellfish-water quality feedback and contributions to nutrient removal; 6) producing a list of management recommendations to improve water and habitat quality within the GE; and 7) creating materials and communication products to support water quality for stakeholders to understand the impacts watershed actions have on water quality. We are employing a collaborative science process to ensure that this project is useful to our intended users. The process will be largely defined and conducted through a Project Team that integrates research and management end-users. This Charter describes the purpose, structure, principles, operations, and outputs of the collaborative Project Team.
This Guana Nuts Collaborative Charter is

- A living document to be maintained and modified by the Project Team to help us finish the project as strongly as we started it!
- A procedural guide describing the project's collaborative work operation and how Team members commit to interacting constructively in good faith.
- An informal agreement among Team members and does not have any legal standing.
- A public document available for anyone to read and review. Comments about this document should be addressed to the co-Collaborative Lead, Kaitlyn Dietz and Technical Lead, Ashley Smyth.

Purpose of the Project Team

Project Team members' unique knowledge and skills will guide the project by making recommendations and providing key information. The Project Team will provide input at various stages of the project to assess project progress and gather feedback, specifically about the following outputs:

- Experimental Design (e.g. dataset selection, experimental treatments, etc.)
- Sampling Protocol (number and location of sampling sites, sampling frequency, etc.)
- Data Management (metadata, data storage, etc.)
- Analysis and interpretation of research findings (preliminary data, final report, etc.)
- Technical and annual reports (will detail the methods, experimental design, results, and lessons learned for the grantors and end users needing details to inform their future restoration and water quality management plans)

- Publications (synthesis of image datasets for shellfish distribution and habitat maps, synthesis of shellfish filtration and nitrogen removal, synthesis of water quality and hydrogeochemical modeling data, etc. for the broader scientific and management communities)
- Outreach materials (ArcGIS Story Map, webinars, Summary document for management recommendations, etc.)

Project Team Members

- Dr. Ashley Smyth, University of Florida (Project Lead)
- Kaitlyn Dietz, GTM-NERR (co-Collaborative Lead)
- Dr. Nikki Dix, GTM-NERR (co-Collaborative Lead)
- Dr. AJ Reisinger, University of Florida (co-Technical Lead Water Quality Team)
- Dr. Christine Angelini, University of Florida (co-Technical Lead Shellfish Team)
- Dr. Peter Ifju, University of Florida (co-Technical Lead Drone Team)
- Dr. Shirley Baker, University of Florida (co-Technical Lead Shellfish Team)
- Hallie Fischman, University of Florida (Research Team)
- Jess Lee, GTM-NERR (Research Team)
- Jenna Reimer, University of Florida (Research Team)
- Justina Dacey, University of Florida (Research Team)
- Kristie Perez, University of Florida (Research Team)
- Andrew Ortega, University of Florida (Research Team)
- Kirstin Thompson, GTM-NERR (Collaborative Team)

Roles and Responsibilities

- The Project Team will be coordinated by the Project Lead, Ashley Smyth, & co-collaborative lead, Kaitlyn Dietz, who will be responsible for convening and facilitating meetings, researching and summarizing end user needs and feedback, developing and disseminating Guan Nuts project-related materials, and other coordinating tasks as necessary.
- Team members will serve as the Guana Nuts Project's main point of contact to their respective focus area teams, gathering needs and suggestions from their partners, keeping their information organized and other members of the project team informed of relevant Guana Nut activities, and bringing information and perspectives from their research to bear on Project Team business.
- Team members are expected to read any meeting preparation materials before the meeting takes place and to attend all meetings, if possible.
- Additional roles and tasks for individual Project Team members may be identified and agreed upon by the Project Team during work and will be appended to this document.

Project Teams

A. Management team: The Management Team will provide leadership and coordination for the project and its milestones. It will be *coordinated by Ashley Smyth*, and includes Kaitlyn Dietz, Nikki Dix. This group is responsible for the following milestones:

- Fiscal administration and technical team coordination: Ashley
- Facilitate/schedule meetings, webinars, and workshops: Kaitlyn & Ashley
- Create, coordinate and connect other work and advisory groups: Kaitlyn & Nikki
- Ensure project deliverables are progressing and completed, as noted by the project timeline: Ashley

- Coordinate data management and archival in the CDMO: Ashley & Nikki
- Facilitate input from end-users, and ensure incorporation into data visualization & analyses: Kaitlyn

B. The Water Quality Technical Team is responsible for reaching the outputs described below. It will be *coordinated by Ashley Smyth*, and includes AJ Reisinger, Nikki Dix, Jess Lee, Justina Dacey, Jenna Reimer,

- Source tracking: AJ & Jenna
- Sediment flux: Ashley & Justina
- Water column bioassays: AJ & Justina
- Water quality monitoring: Nikki, Jess, AJ & Jenna
- Hydrobiogeochemical model: AJ & Jenna
- Whole lake nitrogen budget: Whole Team
- Recommendations for future water quality research, monitoring, and management: Whole Team

C. The Shellfish Technical Team is responsible for reaching the milestones described below. It will be *coordinated by Christine Angelini*, and includes Ashley Smyth, Shirley Baker, Justina Dacey, Hallie Fischman, Kristie Perez

- Shellfish denitrification: Ashley & Justina
- Filtration and nitrogen content: Shirley & Kristie
- Shellfish survey: Hallie, Kristie, Shirley & Christine
- Manipulation experiment: Hallie & Christine
- Workshop on shellfish & water quality: Whole Team
- Recommendations for future shellfish research, monitoring, and management: Whole Team

D. The Mapping Technical Team is responsible for reaching the milestones described below. It will be *coordinated by Christine Angelini*, and includes Peter Ifju, Hallie Fischman, Andrew Ortega

- Drone survey and data processing: Peter & Andrew
- Reef laser scanning and data processing: Hallie & Andrew
- Habitat maps: Peter, Hallie, & Christine
- Presentation about workflow: Whole Team
- Recommendations for future mapping work: Whole Team

E. Collaboration Team is responsible for reaching the milestones described below. It will be *coordinated by Kaitlyn Dietz*, includes Kirstin Thompson and Nikki Dix.

- Advisory committee formation and engagement: Nikki & Kaitlyn
- Stakeholder workshops: Kaitlyn, Abby, Kirstin
- Community assessment of scenarios: Nikki, Kaitlyn & Kirstin
- Recommendations output: Nikki, Kaitlyn & Kirstin

Team Communication

Full Team Meetings

- Meetings will take place monthly. The Project Team will aim to limit meetings to 1 – 1.5 hours, but some topics may require longer meetings.
- Meetings will be conducted virtually. When in-person gatherings are possible, meetings will be held in locations convenient for most of the Team, with virtual participation available when feasible.

- Meeting dates and times will be determined using an online scheduling tool (e.g., When2Meet) or discussion at team meetings to ensure maximum attendance.
- Meetings will consist of a round-robin style of updates related to the objectives. Emails for additional agenda items and meeting reminders will be emailed at least seven days before the meeting.
- Meeting notes will be drafted by Project Lead Ashley Smyth and reviewed by the Project Team.
- In addition to regularly scheduled meetings, Team members may be asked from time to time to review, in a timely manner, documents, offer opinions, or consult individually or in groups with Team members including stakeholder meeting agendas and notes.
- Microsoft Teams will be used to store and share documents.

Ongoing communication

- **Full team updates:** The management team will use Microsoft Teams & email to keep all team members updated with overall project progress, information needs, and plan changes from various components, meeting dates, etc. All documents relevant to requests for input will be shared in Teams.
- **Sharing and creating documents:** The management team will use Microsoft Teams to store and share documents for this project. Members can also use Teams to create and store drafts but that is not required. All team members need to be comfortable with this platform; if anyone has difficulties accessing, Ashley will provide technical assistance. Folders for Microsoft Teams will be kept up to date by component leads and organized according to the project's major milestones and functions:
    - General (Full team resources & Reference Documents)
    - Project Management
    - Shellfish Team
    - Water Quality Team
    - Mapping Team
    - Collaboration Team
    - Final products
- **Data sharing:** The management team will coordinate data management and archival in the CDMO. Project Team members agree to facilitate access to datasets as outlined in the Data Sharing Plan within Microsoft Teams (not publicly accessible). Each Project Team will be responsible for maintaining proper documentation and metadata for all datasets generated. Each project data set is expected to include the following information:
    - Title of dataset
    - General description of data
        - Brief description of the data, including why data were collected
    - Search keywords
        - List of any web or catalog search keywords that would be useful in discovering this dataset
    - More about the data
        - Provide specific information about data such as measured variables and units, abbreviation definitions, data collection methods, and experimental design.
    - Data collection period [Month, Year] to [Month, Year]

- Geographic extent
- File format and size
- File name(s)
- Maps and schematics for data collection: include a map of the project area and/or data collection sites. If relevant, include a schematic to explain the data collection methods and experimental design.

An example metadata document:
https://nerrssciencecollaborative.org/media/files/Dix_Dataset_description(1).pdf

Compensation

Team members will be reimbursed for pre-discussed travel costs associated with participating in Project activities, as outlined in individual subawards. No other monetary compensation will be provided.

Operating Protocols

General Principles of Collaboration

Using the following general principles of collaboration, Guana Nuts Project Team members agree to:

- Commit to expending the time, energy, and organizational resources necessary to meet the project objectives, including attending project meetings and review of materials (i.e., meeting agendas, meeting notes, and annual reports).
- Engage with team communications and contribute to file management through Microsoft Teams.
- Commit to organizing data thoughtfully and writing thorough summary documents (i.e., metadata and technical reports) so that information from the project can be used widely after the grant period is over.
- Recognize the validity and value of differing points of view.
- Recognize the complexity involved in environmental monitoring, ecological systems, and the multiple considerations of management strategies.
- Be prepared to listen intently to understand others' views.
- Regard disagreements as problems to be solved, not battles to be won.
- Coordinate research logistics at the GTM through Jess Lee, jessica.lee@FloridaDEP.gov.

Decision Making

The Project Team will strive for consensus in decision-making on substantive issues and recommendations; however, the team will tailor their decision-making based on the scenario in question and adapt as needed. Functional decision-making will result in efficient, clear decisions and all team members feeling heard and respected.

Conflict Resolution

Should a disagreement arise among Team members (e.g., over data sources or interpretation, project outputs, etc.), the group will strive to resolve the disagreement internally with the assistance of the Project Lead (Ashley Smyth) and co-collaborative Lead (Kaitlyn Dietz) and referencing the project proposal, research plans, etc.

Co-authorship

Project Team members agree to co-authorship on project publications (manuscripts, posters, outreach products, and other published materials) for project team members who have significantly contributed to the publication in

question. This may include writing, data collection, data analysis, or other contributions related to the publication content. A score above 25 on the "Co-authorship Scoring System" warrants co-authorship. There is no expectation of blanket co-authorship for all project members on all publications. Project Team members agree to share publications with the entire group to consider co-authorship and provide an opportunity for review before submission. Project team members who review publications agree to avoid discussing/sharing externally before publication. The Project Lead (Ashley Smyth) will decide on any issues over authorship.

Project Timeline:

Milestone Schedule for Q8 to Q12 as of January 2023. The schedule is subject to change by the project lead.

- Jan 12, 2023: Project Team Monthly Meeting
- Feb 9, 2023: Project Team Monthly Meeting
- Feb 16, 2023: **In-Person** GTM State of the Reserve Symposium (www.stateofthereserve.org)
- March 9, 2023: Project Team Monthly Meeting,
- March 2023: Annual Report Due, List of Datasets Due
- April 13, 2023: Project Team Monthly Meeting
- May 11, 2023: Project Team Monthly Meeting,
- May 17, 2023: **In-Person** Stakeholder Meeting: Focus on Scenarios
- June 8, 2023: Project Team Monthly Meeting
- July 13, 2023: Project Team Monthly Meeting
- August 10, 2023: Project Team Monthly Meeting
- August 18, 2023: Stakeholder Newsletter delivery (content due by 8/4/23)
- September 2023: Project Team Monthly Meeting (*date to be set in July/ August 2023)*
- October 2023: Project Team Monthly Meeting (*date to be set in July/ August 2023)*
- November 2023: Project Team Monthly Meeting (*date to be set in July/ August 2023)*
- November 15, 2023: **In-Person** Stakeholder Meeting
- December 2023: Project Team Monthly Meeting (*date to be set in July/ August 2023)*;
- January 2024: Project Team Monthly Meeting (*date to be set in November/ December 2023)*
- February 2024: Project Team Monthly Meeting (*date to be set in November/ December 2023)*
- February 2024: State of the Reserve & **In-Person** synthesis meeting (*date TBD)*
- March 2024: Project Team Monthly Meeting (*date to be set in November/ December 2023)*
- April 2024: Final Report Due; Data Sharing Information for Data Sets Complete
- April 23, 2024: **In-Person** Sip & Science Presentation at the GTM

Agreement by Team Members
By adding my name, I acknowledge and agree to the terms outlined in this document.

Ashley Smyth
Hallie Fischman
Kirstin Thompson
Nikki Dix