Tyndall AFB Stakeholder Working Group

Date: February 5, 2026

Time: 1-2:30 pm Central/2-3:30 pm Eastern

Location: Teams

Prepared by: SASJBEP

Attendees: Garey Payne (USAF AFCEC CFDP), Jonathan Feldman (AFCEC REPI Program Manager), Cheri Moon (Tyndall AFB), Jessica Graham (SASJBEP), Jeff DeQuattro (TNC Gulf Program), Christine Shepard (TNC Gulf Program), Katie Konchar (TNC Gulf Program), David Bell (Jacobs), Mike Sharp (NFWF), Kent Smith (FWC), Simeon Yurek (USGS), Jessica Black (NOAA Restoration Center), Eric Christianson (Emerald Coast Regional Council), Melanie Kaeser (USFWS), Stephanie Dohner (Naval Research Lab), Nigel Temple (University of South Alabama), Joy Brown (Northwest Florida Sentinel Landscapes), Darryl Boudreau (NWF WMD), Carter DuVal (NRL), William Chavez (AF REPI San Antonio), Renee Carlton (NFWF), Andrew Altieri (University of Florida), Matt Chasse (NOAA), Jonathan Cornman (MRP-APHIS-325 FW Flight Safety), Keith Bryant (Bay County), Erin Graham (Visit Panama City Beach), Iacopo Vona (UCF), Jenny Shinn (Rutgers), Victoria Anduray (Mott MacDonald), Cale Madden (Mott MacDonald), Katherine Baltzer (TNC), Patrick Saldana (UFL), BC (unknown), Aleighsa Wright (SASJBEP), Sierra Ortiz (TNC), Michelle Peppina Covi (UGA), Scott Rikard (Auburn University), Jocelyn Borcuk (Tyndall).

Thirty-eight (38) attendees representing approximately twenty-four (24) organizations participated in an information sharing session focused on ongoing work in and around Tyndall Airforce Base including updates on the Reefense project, Tyndall's Coastal Resilience efforts including phase 2, the newly approved Scientific Monitoring Plan. The SASJBEP staff also revealed the new Tyndall Stakeholder website.

Meeting Objective: The objective of this meeting was to inform stakeholders of ongoing work in and around Tyndall, raise awareness of the Scientific Monitoring Plan that had recently been approved, and reveal the new Tyndall Stakeholder Working Group website.

Meeting Summary:

Dr. Jessica Graham with the St. Andrew and St. Joseph Bays Estuary Program (SASJBEP) started the stakeholder working group meeting by welcoming everyone and requesting that they enter their name and organization into the chat for attendance. Jessica reviewed the agenda and reminded everyone to stay muted unless presenting. She then handed the meeting to Garey Payne (USAF) for an official welcome.

ST. ANDREW & ST. JOSEPH BAYS ESTUARY PROGRAM at FSU PANAMA CITY

Meeting Details:

Mr. Garey Payne (USAF) welcomed the attendees and thanked them for their participation today and hinted at the progress that has been going on to date including permitting almost completed for the three nature based solution projects with one project that currently has an open Request for Proposals (RFP).

Reefense Project Updates

Jenny Shinn (Rutgers) and Iacopo Vona (UCF) provided an update on progress, design, monitoring results, and next steps for the DARPA-funded Reefense program. The project is a multi-institutional, international effort involving 11 organizations with many acknowledgements given to numerous partners and supporters. The team noted that while the Reefense program was prematurely terminated from DARPA funding in November 2025, the Reefense Collaborative has since been formed to continue advancing this work.

The project began in 2022 with reef breakwaters and mosaic habitat features installed at Baker's Point off Tyndall Airforce Base in 2025. The reefs were made from low carbon concrete materials and monitoring that occurred through late 2025 showed that the structure effectively attenuated waves, reduced flow velocities and promoted sediment depositions. Design decisions were strongly influenced by site-specific water-level measurements, which are different from long-term NOAA averages and required adjustments to the breakwater placement.

Biological monitoring showed successful oyster and mussel recruitment on reef structures and shell bags with some oysters reaching substantial size in the first year. Genomic selection techniques produced oysters with significantly improved disease resistance, and these oysters were successfully deployed as larvae to jump start reef colonization. Vegetation results were mixed with Juncus persisting and expanding modestly, while Spartina plantings were lost due to storm impacts shortly after installations.

The project officially concluded in November 2025, Rutgers University assumed ownership and maintenance responsibility of the reef. The newly formed Reefense Collaborative is pursuing follow-on research, reporting, and future installations in New Jersey and Australia to build on the project's outcomes.

Floor Opened for Questions and Discussion

- Joy Brown asked if there were any testing for thermal tolerance of the oysters.
    - Jessica answered based on experience monitoring under the FSU pier it may not have been experimental but there was a lot of thermal stress experienced.
    - Scott Rikard answered stating that they used up-selected genomic selection compared to phenotypic selection, average genomic selection, and wild controls. We did not use heat shocked oysters but did test for thermal tolerance to high

temperatures. Genomic selected oysters performed and survived better under thermal stress.

- Simeon Yurek asked if the elevation panel referenced to the same baseline elevation or referenced to the starting data separately for each panel.
    - Iacopo Vona explained that for plot D-E-F the baseline was the same (Nov 2024) for plot A, B, C the baseline is referenced to the starting data separately for each panel.
- Joy asked if the team was waiting for sediment deposition from the reefs to occur before planting.
    - Jenny answered that unfortunately the timeline for the project did not allow for waiting for the sediment deposition to occur. The team waiting for a few months and had to plant them.
- Jeff DeQuattro asked if there was a name for the reef modules
    - Jenny answered that they are working on trademarking, but they are Reefense modules.
- Andrew Altieri described that they saw season recruitment of drift seagrass that was then lost over the winter and they attributed that loss to burial from bioturbation and was detailed in a recently published paper that is: Marin-Diaz, B., Angelini, C., Pezoldt, C., Konchar, K. and Altieri, A.H., 2025. Testing biodegradable interventions to disrupt plant–animal feedbacks and promote seagrass establishment. *Restoration Ecology*, p.e70235.
- Katie Konchar asked if the stability was influenced at all by the concave-convex placement without interlocking the modules?
    - Nigel answered that he didn't' believe they had any stability issues but that there was concern with scour at the toe that may have influenced stability, but we addressed that during installation with some small rock placement at the toe for additional protection.
- Stephanie Dohner asked how the elevation was measured and asked for an outline of methods, sensors, accuracy and uncertainty and if it was walked in a grid or profiling manner.
    - Iacopo answered that elevation was measured using an RTK GPS to monitor elevation changes, emild RX device and the accuracy of the device was +/- cm vertically and horizontally. They monitored pre-defined vertical and horizonal transects as well as a detailed survey of each reef module to monitor any subsidence of the structures.
- Matt Chasse asked when looking at survivorship of the oysters planted on the reefs were you looking at survivorship or more specially looking at mortality related to Dermo vs. other causes (oyster predation (i.e., oyster drills))?
    - Jenny answered saying that when looking at survivorships on the oysters that were planted on the reef, we did not conduct any disease testing but did do some visual inspections to see if there was evidence of predation from drills or crabs as best as

we could see, but nothing more detailed than that. We do have some baseline data though from wild populations nearby that were sampled monthly for disease.

- Scott Rikard added that they currently have a student working on the project and results are scattered and of course there are more factors affecting them than just Dermo so they are still working on teasing out the data.

Scientific Monitoring Overview

Katie Konchar (TNC), Patrick Saldana (UF), and Stephanie Dohner (NRL) provided an overview of the Tyndall Coastal Resilience Project, which integrates multiple strategically located nature-based solutions designed to protect critical base infrastructure while enhancing coastal and estuarine habitats. TNC is leading four key projects including the Oyster Reef Breakwater in East Bay, which is intended to protect the drone runway by attenuating wave energy, creating new oyster reef habitat, and enhancing adjacent seagrass beds. Construction of the Oyster Reef Breakwater is expected to occur from summer through fall of 2026, with scientific monitoring conducted before construction and for three years afterward.

Scientific monitoring is a core component of the project and is designed to evaluate ecosystem services and coastal resilience benefits while informing future nature-based solutions at Tyndall and similar sites. The monitoring plan was developed collaboratively by The Nature Conservancy, the University of Florida, and the U.S. Naval Research Laboratory, with funding provided by REPI through the National Fish and Wildlife Foundation. Monitoring will focus on ecological, physical, and geospatial metrics to assess project performance.

The proposed Oyster Reef Breakwater will consist of six limestone reefs placed in East Bay adjacent to existing seagrass beds, with goals of protecting approximately 2,000 feet of shoreline, reducing wave energy by 80-90 percent, creating 1.25 acres of oyster reef habitat, and enhancing roughly 30 acres of submerged aquatic vegetation. Ecological monitoring led by the University of Florida will assess oyster recruitment, reef biodiversity, benthic assemblages, and seagrass health using permanent transects, quadrats, and photographic documentation, with comparisons to control areas and nearby reefs.

The U.S. Naval Research Laboratory will complement ecological monitoring with geospatial and physical data collection using drones, sonar, and in-situ instrumentation. These methods will track seagrass and marsh extent, reef elevation and rugosity, hydrodynamics, water quality, sediment transport, shoreline position, and bathymetric change. Together, these integrated monitoring efforts will provide a comprehensive assessment of how the Oyster Reef Breakwater influences coastal processes, habitat resilience, and shoreline stability at Tyndall Air Force Base.

Tyndall Coastal Resilience – Phase 2 projects

Jeff DeQuattro (TNC) provided an overview of long-range planning for future nature-based solution concepts at Tyndall Air Force Base, emphasizing the extended timelines are required to move projects from concept to implementation. While construction of the Oyster Reef Breakwater is

expected in 2026, many of the current efforts originated from stakeholder discussions. To support forward planning, TNC secured private funding from Lockheed Martin and worked with Jacobs to evaluate future phases of coastal resilience projects at the base.

The resulting analysis assessed a range of potential nature-based solutions using a structured set of objectives, criteria, and site-suitability factors, including coastal flooding risk, cultural resources, and submerged aquatic vegetation. Rather than ranking preferred projects directly, stakeholders prioritized evaluation criteria, which were then applied consistently across sites. This process resulted in the identification of 17 potential projects, from which several were prioritized for deeper evaluation and project profiling to support future funding proposals.

Three priority concepts advanced: a large-scale barrier island project focused on nature-based protection, a nearshore oyster reef breakwater designed as a highly visible and volunteer-friendly project accessible from shore, and a whole-system approach on the north side of the base combining marsh enhancement, subtidal and intertidal oyster reef breakwaters. The top-ranked project involved dune and dune-field enhancement on the barrier island, building on prior U.S. Fish and Wildlife Service research and pilot plantings, with the goal of strengthening the dune system as the base's first line of defense against coastal hazards.

Melanie (USFWS) added that they completed the coastal dune replanting project about two years ago and have done continuous monitoring. She mentioned that it is much tricker of a process than meets the eye. There were difficulties working with shorebird folks and the timing of planting which we were bound to and many of the plants weren't big enough which all affected survival. She advised ensuring coordination with the shorebird folks and to be prepared for some resistance. She finished by offering to discuss offline.

New Tyndall Stakeholder Working Group Website Reveal

Jessica moved the meeting to the website reveal and gave some background on the working group and evolution that has been integrated briefly into the website. Jessica then took the group through the different sections of the website including the available resources. Katie Konchar added that this has been a long time coming and really designed to be a one stop shop for everything that's been completed through the planning and design of the four keystone NbS for Tyndall AFB plus forthcoming updates on NbS construction and scientific monitoring.. Jessica credited Aleighsa who has been working with Garey and Katie to put everything together and thanked Garey and Katie for digging and finding a lot of the necessary information.

Announcements from Partners

Joy Brown announced that the Northwest Florida Sentinel Landscape Partners meeting was coming up in Milton on February 25th and 26th with the 25th a field day out on NAS Whitingfield and the Blackwater Forest. The second announcement was that they are working with Mark Belton from Throwe Environmental again in anticipation for the 2026 NCRF RFP release.

ST. ANDREW & ST. JOSEPH BAYS ESTUARY PROGRAM at FSU PANAMA CITY

Garey then shared his screen to review an issue that was more recent and in need of more immediate work on some shoreline stabilization close to Buck Beach. Crooked Island East is experiencing significant erosion and they are looking for solutions so this sediment doesn't continue to erode and likely affect other habitats such as nearby seagrass beds etc. It is also one of the last barriers protecting Highway 98 that goes through Tyndall Air Force Base. Garey provided his email address for anyone that may have ideas to contact him to discuss further. It will likely need some wave attenuation done prior to any sand placement in order to keep the sand in place.

Jessica thanked everyone for attending and the presenters for providing such great information.