Datasets: People of the Apalachicola System: Exploring Cultural Heritage to Support Ecosystem Planning, Management, and Adaptation

This document provides detailed information about five datasets that were generated through a 2023-2024 catalyst project titled *People of the Apalachicola System: Exploring Cultural Heritage to Support Ecosystem Planning, Management, and Adaptation.* This webpage provides information about the project. The project was supported by the National Estuarine Research Reserve System (NERRS) Science Collaborative, which is funded by the National Oceanic and Atmospheric Administration. All Science Collaborative supported projects that collect new data adhere to federal data sharing and archiving requirements.

About the Associated Project

Project page: https://nerrssciencecollaborative.org/project/Grinnan23
Grant Type: Catalyst
Focus Area(s): Climate Change, Ecosystem Service Valuation
Keyword(s): cultural ecosystem services, sea level rise, community engagement, heritage

Reserve(s): Apalachicola, FL

Project Duration: November 2023 - September 2024
Grant Amount: $104,967.00

Project Contacts:
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Project Description

The Apalachicola River and Bay system is a landscape rich in natural and cultural heritage. Over 12,000 years of human history are embedded in the Apalachicola system's archaeological record, demonstrating the profound connections that many communities of people have had to the landscape. To better understand the interconnected human and natural histories of the area, this project sought to identify the ecosystem services that people, past and present, use and value in the Apalachicola National Estuarine Research Reserve (ANERR).

Community conversations, hosted as “Community Conversations on Heritage at Risk,” revealed that many residents feel a deep connection to the region’s fisheries, historic structures, and waterfront traditions, but see them as threatened by changing economic realities and climate impacts. Archaeological site monitoring in the ANERR likewise established that coastal cultural heritage sites, in particular, face active risks from storm surges and sea level rise. Further, predictive modeling using a Sea Levels Affecting Marshes Model (SLAMM) suggested that a majority of these culturally significant places may transition into regularly flooded marshes by 2050 under moderate sea level rise scenarios, underscoring the urgent need for proactive documentation of local heritage.

Considered together, these findings illuminate how cultural practices like oystering, beekeeping, or gathering in historic neighborhoods are integral to local identity and economic well-being. Much of this heritage remains under-documented in the face of ongoing environmental and demographic shifts in the Apalachicola area. Leveraging project data, land managers can prioritize at-risk heritage sites based on specific climate projections, implement monitoring strategies that address both tangible and intangible heritage, and ensure that residents’ voices guide the next steps in preserving their cultural landscape. This integrated approach will strengthen decision-making for both environmental stewardship and the safeguarding of cultural traditions that define the Apalachicola system.

Overview of Datasets
Five related datasets are described in this document:

- **Dataset 1: Apalachicola NERR SLAMM Archaeological Triage Assessment (ATA)**
  This dataset includes a collection of raster-based expectations of shoreline change in Apalachicola NERR over time given certain sea level rise scenarios. This dataset can be accessed here: https://osf.io/cphsy

- **Dataset 2: Qualtrics Survey Data**
  This dataset includes de-identified responses to an online survey administered via Qualtrics in 2024 to assess current uses of, and connections to, the coastal heritage of the Apalachicola area. This dataset can be accessed here: https://osf.io/2e64v

- **Dataset 3: Community Conversations Data**
  This dataset includes redacted PDF transcriptions from three one-hour community focus group workshops on heritage at risk hosted from January-March 2024 in communities near/in the project area. This dataset can be accessed at https://osf.io/wsvgk/ in the “Community Conversations about Heritage at Risk” folder.

- **Dataset 4: Heritage Monitoring Scouts Report Data**
  This dataset includes data from in-field monitoring of archaeological sites, historical cemeteries, and historical structures within the ANERR. Data were conducted using the Florida Public Archaeology Network’s (FPAN) Heritage Monitoring Scouts (HMS) program

site assessment form supported by the HMS Florida Monitoring Database, referenced as Scout Reports. This dataset can be accessed here: https://osf.io/wf2kv

- **Dataset 5: Shoreline Mapping Data**
  This dataset includes vector-based data collected January through August 2024 for shoreline analysis of monitored archaeological sites within the ANERR. This dataset can be accessed here: https://osf.io/h2d6q

Questions about these datasets can be directed to:
Nicole Grinnan, Florida Public Archaeology Network, ngrinnan@uwf.edu

About the Project Datasets

Detailed dataset descriptions are provided below.

Dataset 1: Apalachicola NERR SLAMM Archaeological Triage Assessment (ATA)

Data overview
This dataset includes a collection of raster-based expectations of shoreline change in Apalachicola NERR over time given certain sea level rise scenarios.

More about the data:
The overarching data are a collection of raster-based expectations of shoreline change over time given certain sea level rise scenarios. This dataset includes all input data: DEM, Slope, Aspect, ANERR property boundaries, and SLAMM boundaries for this project. The purpose of the dataset was to use the open source Sea Levels Affecting Marshes Model to estimate the impact of climate-driven shoreline change to archaeological cultural heritage sites within the NERR. The product here includes both the SLAMM datasets produced, as well as the Archaeological Triage Assessment. The latter dataset uses all known archaeological sites within the ANERR to estimate which cultural heritage sites are currently safe, threatened, damaged, destroyed, or likely to be safe, threatened, damaged, or destroyed in 5-year increments from 2006-2100 given a 1.5m GMSLR and a 2m GMSLR. In addition to raw input data and processed datasets and graphics, the file package also includes a narrative report detailing methods, findings, and implications of this study.

This model was created using the open source program Sea Levels Affecting Marshes Model (SLAMM). The data input are: DEM/LiDAR, slope, and wetland characteristics of an AOI from the National Wetlands Inventory (NWI). Franklin County has excellent quality Lidar-derived DEMs available at a 1.5-meter interval. The program uses three types of data to create estimates of wetland reallocation at user-generated time intervals based on sea level changes estimated from the Intergovernmental Panel on Climate Change (IPCC). The start date of the model was predated from 2006 and run until 2100 at both 5- and 25-year intervals (2006, 2025, 2050, 2075, 2100). Results from the 25-year interval model for a 2-meter SLR are presented in this report; full data are available in the data package.

Search keywords:
SLAMM, Sea Level Rise, Climate Change, Shoreline Change, ANERR, NERR,

Data collection period:
August 2023 to October 2024

Geographic extent:
The extent of this model is based on a rectangle drawn to encompass the borders of ANERR:
South_West_Bounding_Coordinate: 85.2262138W 29.5874966N
South_East_Bounding_Coordinate: 84.6911889W 29.5874966N
North_West_Bounding_Coordinate: 85.2262138W 30.2149592N

North_East_Bounding_Coordinate: 84.6911889W 30.2149592N

File format:
The total file size is compressed into a 751 MB .zip file. It includes:

1. GIS package is an ESRI ArcGIS Layer Package contained within a .zip file.
2. Graphics are .png, .jpg, and .giff files
3. Tables are Excel spreadsheet .xls and .xlxs files
4. SLAMM input data are .txt, .xls, and ESRI project files
5. Summary report is a PDF document (.pdf)

File name(s): People_of_Apalachicola_Modeling_Cochran_Public.zip

Data access and archival:
A public version of these files with sensitive information redacted can be found at https://osf.io/cphsy.

Request the original, unredacted data by contacting: Nicole Grinnan, Assistant Director, Archaeology Institute, University of West Florida, Email: ngrinnan@uwf.edu or the Archaeology Institute Collections Facility, University of West Florida, Email: archaeology-collections-group@uwf.edu

Maps and schematics for data collection:

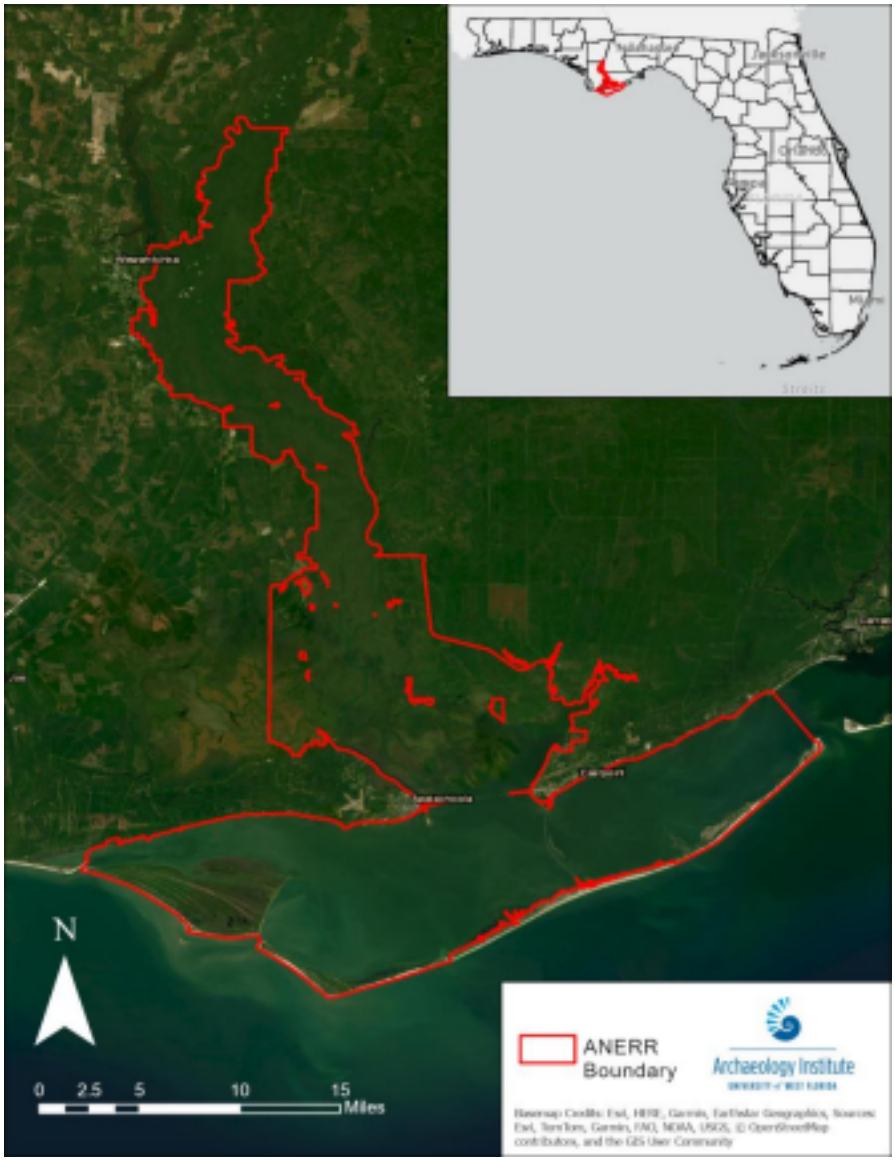

Figure 1: Area of Interest, Apalachicola National Estuarine Research Reserve (ANERR).

Dataset 2: Qualtrics Survey Data

Data overview
This dataset includes de-identified responses to an online survey administered via Qualtrics in 2024 to assess current uses of, and connections to, the coastal heritage of the Apalachicola area.

More about the data:
The data are de-identified responses to an online survey. The survey included 23 questions and received 15 responses. Not all respondents answered all questions in each survey. The data includes basic demographic variables of the respondents and their answers to questions about how people have utilized and expressed value for ecosystem services historically, how they continue to use them today, and how they can respond to future threats.

The survey responses were collected using Qualtrics software and analyzed using QDA Miner Lite and a qualitative data analysis codebook designed for this project. As per IRB review, personally identifiable information was not collected from participants and, if present, was redacted from the data by the PI.

Search keywords: climate change, survey, ANERR, Apalachicola, qualitative data, community engagement

Data collection period:
January 2024 through September 2024

Geographic extent:
Responses were submitted through an online link; the survey has no geographic extent.

File format:
PDF files (.pdf) and Excel spreadsheet .xlsx file

File name(s):
1. People of the Apalachicola Survey.pdf
2. People of the Apalachicola Survey Results.pdf
3. People of the Apalachicola CCHAR and Qualtrics Analysis Final Codebook.xlsx

Data access and archival:
All Qualtrics Survey data are available on the "People of the Apalachicola System" project OSF page at https://osf.io/wsvgk/ in the "Qualtrics Survey Data" folder. The original survey is available at https://osf.io/xyajv. The Survey results are available at https://osf.io/2e64v. The qualitative data analysis codebook is also available at https://osf.io/c6be4.

Dataset 3: Community Conversations Data

Data overview
This dataset includes de-identified responses to an online survey administered via Qualtrics in 2024 to assess current uses of, and connections to, the coastal heritage of the Apalachicola area.

More about the data:
"Community Conversations on Heritage at Risk (CCHAR)" workshops asked small focus groups eight questions about heritage at risk in the project area.

These included:

1. What is your favorite thing about living in the Apalachicola, Florida, area?
2. How do you define cultural heritage?
3. What is significant about the Apalachicola area's cultural heritage resources?
4. If we can't do further research at, or take action to preserve every cultural heritage site, how should we decide which sites to prioritize?
5. What are the threats facing Apalachicola-area cultural heritage resources?
6. What are your aspirations for Apalachicola-area cultural heritage by 2030?
7. What needs to happen to get there? In order to achieve aspirations, where do roles and responsibilities lie? If work to preserve sites is required, who should pay for this work? (Local community, local authority, national heritage agencies, other?)
8. What would be the impact on Apalachicola if we lost cultural heritage sites? How do you think people here would feel about it?

As per IRB review, personally identifiable information was not collected from participants and, if present, redacted from the data by the PI. Any instances of facilitator names were also removed from transcriptions.

Data collection period:
January 2024 to March 2024

Geographic extent:
Three workshops were held in three different locations near/in the ANERR. The first workshop was held on 25 January 2024 at the Holy Family Community Center in Apalachicola, Florida. The second workshop was held on 22 February 2024 at the Community Center at Battery Park in Apalachicola, Florida. The third workshop was held on 14 March 2024 at the ANERR Visitor Center in Eastpoint, Florida.

File format:
PDF files (.pdf)

File name(s): Community Conversations about Heritage at Risk

1. 01_2024-POTA Transcript for Community Conversation-Redacted
2. 02_2024-POTA Transcript for Community Conversation-Redacted
3. 03_2024-POTA Transcript for Community Conversation-Redacted
4. People of the Apalachicola CCHAR and Qualtrics Analysis Final Codebook.xlsx

Data access and archival:
Data are available on the People of Apalachicola project OSF page at https://osf.io/wsvgk/ in the "Community Conversations about Heritage at Risk" folder.

Dataset 4: Heritage Monitoring Scouts Report Data

Data overview
This dataset includes data from in-field monitoring of archaeological sites, historic cemeteries, and historic structures within the ANERR. Data were conducted using the Florida Public Archaeology Network's (FPAN) Heritage Monitoring Scouts (HMS) program site assessment form supported by the HMS Florida Monitoring Database, referenced as Scout Reports.

More about the data:
Monitoring activities were conducted using the Florida Public Archaeology Network's (FPAN) Heritage Monitoring Scouts (HMS) program site assessment form supported by the HMS Florida Monitoring Database, referenced as Scout Reports. The Scout Report form includes verification of site location, condition assessment, assessment of cultural and environmental threats, observed artifacts, and recommendations for future monitoring. The form is submitted along with in-field photos. Data were collected by project team members with the help and assistance of ANERR land managers and their intern volunteers. Scout Reports and associated photos were uploaded to the HMS Florida Monitoring Database as they were created. Database users who have a login can access reports for cemeteries and structures in the Database. Logged-in users granted permission to access the archaeological sites that were monitored can view the Scout Reports and photos there.

Search keywords: HMS Florida, monitoring, assessment, heritage at risk, ANERR, Apalachicola, archaeological sites, cultural resources

Data collection period:
January 2024 through August 2024

Geographic extent:
Apalachicola NERR

File format:
Excel spreadsheet .xlsx file
File name(s): ANERR Monitoring Scout Report Data Public.xlsx

Data access and archival:
Scout Reports and associated photos are uploaded to the HMS Florida Monitoring Database as they are created. Database users who have a login can access reports for cemeteries and structures in the Database. Logged-in users granted permission to access the archaeological sites that were monitored can view the Scout Reports and photos there.

The monitoring Scout Report spreadsheet is available on the People of Apalachicola project OSF page at https://osf.io/wf2kv. You can also request full data by contacting Nicole Grinnan, Assistant Director, Archaeology Institute, University of West Florida, Email: ngrinnan@uwf.edu or the Archaeology Institute Collections Facility, University of West Florida, Email:

archaeology-collections-group@uwf.edu

Maps and schematics for data collection:

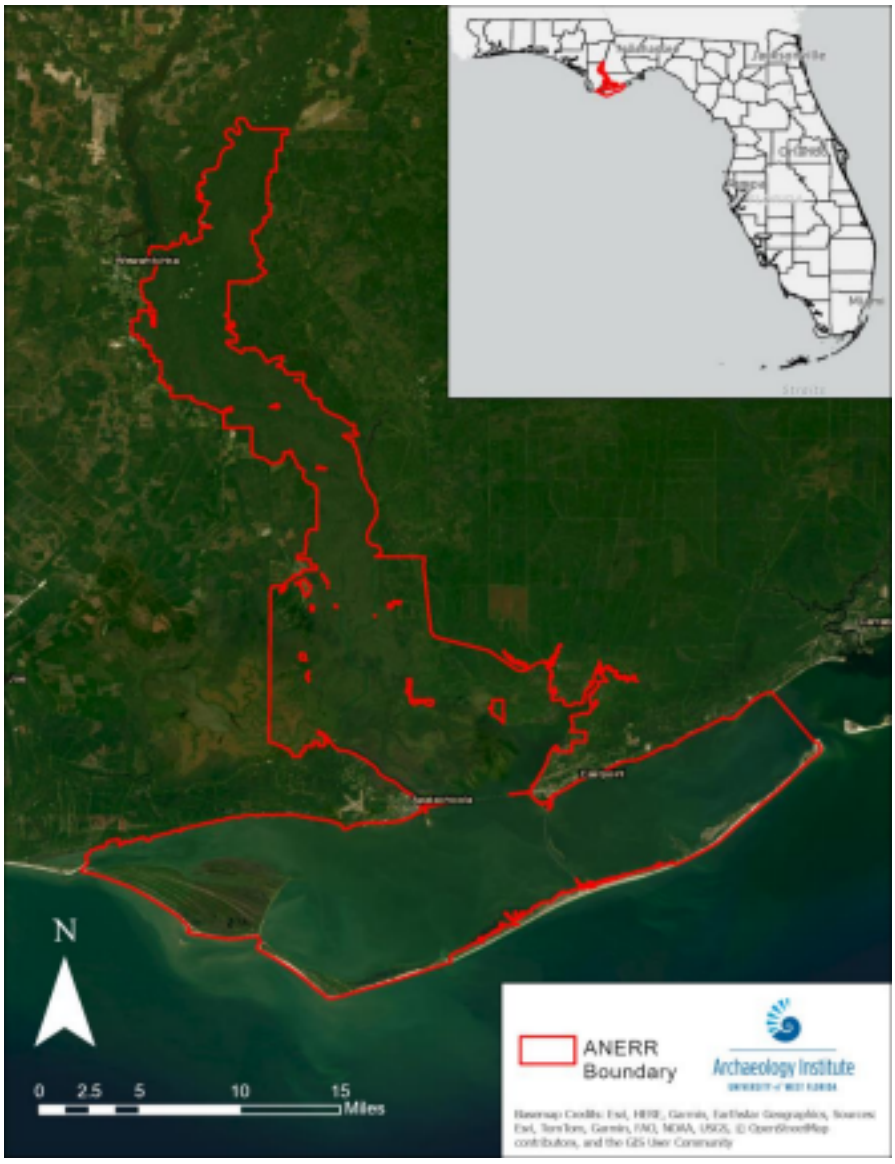

Figure 2. Monitoring activities were limited to the Apalachicola NERR boundary.

Dataset 5: Shoreline Mapping Data

Data overview
This dataset includes vector-based data collected January through August 2024 for shoreline analysis of monitored archaeological sites within the ANERR.

More about the data:
This dataset includes vector-based data for shoreline analysis of some of the monitored archaeological sites within the ANERR. This includes three shapefile lines (two in the case of 8FR00359) collected at archaeological sites representing the vegetative edge of each site (which, for all sites, also represented the upland erosional edge). For three of these sites, the data also includes an arbitrary baseline, transects, and original and adjusted transect files, which calculated the estimated rate of change between the three shapefile lines for each site. Measurements were taken between these lines to calculate shoreline change, which are also provided.

The shoreline data was gathered using an Arrow Gold GNSS receiver and the ArcGIS Field Maps application to collect points along the vegetative edge of each archaeological site. In all cases, the vegetative edge was perceived to also be the upland erosional edge, as it was clear that saltwater intrusion via storm surge and wave action had affected vegetation. The GNSS receiver was connected to the Florida Permanent Reference Network (FPRN) to receive real-time kinematic position (RTK) corrections to achieve the most accurate data possible, sometimes down to sub-centimeter accuracy. Lines of data were collected as individual points rather than a continuously tracked line. This method allowed the team to collect points while safely navigating unstable shorelines, heavy vegetation, and other obstacles. The data were downloaded from ArcGIS Online and cleaned by removing erroneous points. Lines of data for each site were combined into one file for the duration of the project.

The field team attempted to capture the last place where intact archaeological deposits could be found, which was often a vegetative/upland erosional edge where present. This line often reflects the extent of archaeological resources with higher degrees of overall site integrity and the areas most vulnerable to impacts like erosion and boat wake action. The interpretation of the exact location of the vegetative/upland erosional edge was determined by the project team members and volunteers mapping each shoreline during data collection.

For three of the mapped shorelines, the lines of data were compared visually, and changes were calculated using the Digital Shoreline Analysis System v.6.0 (DSAS). DSAS is a standalone application created by the U.S. Geological Survey to measure shoreline change. The DSAS uses an arbitrary baseline to calculate shoreline measurements. The project team created baselines for each of the three mapped shorelines by adding a 100 m buffer to the most recently mapped shoreline line, extending outwards from the land. All shoreline data were compiled into a single shapefile and projected in WGS 1984 UTM Zone 17N. General parameters were defined as suggested in the DSAS manual, and the uncertainty of the shoreline placement was based on the worst horizontal accuracy (in meters) field calculated automatically based on the accuracy of the GNSS receiver when the data was collected. Transects were calculated at 10 m apart. The DSAS tool calculated the estimated rate of change between the oldest and youngest shoreline lines at each transect in meters (a metric known as the Net Shoreline Movement or NSM within

the DSAS tool). DSAS calculates a number of other metric rates but the NSM was the focus of this analysis. Outliers in the transect calculations were omitted from the analysis to provide more accurate numbers since many were in dynamic beach environments where the eroding shoreline was harder to define. The team also omitted measurements showing attrition since the project goal was to measure loss. The mapped shorelines, baselines, transects, and adjusted and original rates of change are provided in the geodatabase file. The results of these calculations are provided in spreadsheet format.

Search keywords: shoreline analysis, heritage at risk, ANERR, Apalachicola, archaeological sites, DSAS, archaeology, cultural resources, monitoring

Data collection period:
January 2024 through August 2024

Geographic extent:
Apalachicola NERR

File format:
The shoreline data is in a zipped ESRI ArcGIS file geodatabase (.zip folder of a .gdb file). The shoreline analysis calculations from the DSAS tool are provided in an Excel spreadsheet (.xlsx file).

File name(s): ANERR_Shoreline_Analysis.gdb.zip and ANERR DSAS Shoreline Analysis Data.xlsx

Data access and archival:
Data access and archival: The ANERR DSAS Shoreline Analysis Excel data are available on the People of Apalachicola project OSF page at https://osf.io/h2d6q.

The shoreline geodatabase data are associated with archaeological site locations which are protected by law in the state of Florida. These data are available by request only. Request data by contacting: Nicole Grinnan, Assistant Director, Archaeology Institute, University of West Florida, Email: ngrinnan@uwf.edu or the Archaeology Institute Collections Facility, University of West Florida, Email: archaeology-collections-group@uwf.edu