



# SUNS

SCALING UP NATURE-BASED SOLUTIONS

**Building Capacity and Partnerships to Plan and Implement a Portfolio of Nature-Based Coastal Resilience Actions in Three Florida Panhandle Counties**

The Nature Conservancy



USNA



Northeastern University





# Icebreaker Activity

## Icebreaker

1. Turn on video (if you are able)
2. Share your name, organization, location
3. **What was your first job?**
4. Anna Jane will pass it on.



## Working Group Kickoff

**July 2021**

*State of Resilience  
Planning & Projects  
in the Hurricane  
Michael Region*

## Portfolio Development Process & Feedback

**September 2021**

*Conservation Priorities  
and Regional Strategies*

## Portfolio Development Process & Feedback

**August 2021**

*Hazards and NBS  
Project Types*

## Portfolio Development Process & Feedback

**October 2021**

*Regional Strategies and  
Priority Locations*

## Characterizing Project Benefits

**April 2022** *Preparing  
Community Dialogues*

*Regional Strategy  
Workshops  
January-April 2022*

*Building the  
Portfolio*

*Community  
Dialogues*

*Community  
input on projects*

## Portfolio Finalization

**July 2022**

*Review community  
feedback, finalize  
selection of portfolio  
projects*



## Working Group Kickoff

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## Characterizing Project Benefits

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January-April 2022***

*Building the  
Portfolio*

***Community  
Dialogues***

*Community  
input on projects*

## Portfolio Finalization





**July 2022**

*Review community  
feedback, finalize  
selection of portfolio  
projects*





# The Plan for Building the Portfolio

Regional Strategy	Description	NBS	Hazard
 <p><b>Greenspace in the Floodplain</b> <i>January 13</i></p>	Mitigates flooding by maintaining open space for floodwater storage and fish and wildlife habitat in the floodplain	Land Conservation, Coastal Wetlands	Flooding SLR Storm Surge
 <p><b>Community Stormwater Management</b> <i>February 10</i></p>	Leverages NBS to manage stormwater, mitigate urban flooding, protect coastal and riparian habitat, enhance recreation opportunities and protect property values	Stormwater Parks, Culvert Upgrades, Coastal Wetlands	Flooding SLR
 <p><b>Shoreline Protection</b> <i>March 10</i></p>	Stabilizes the shoreline, mitigates erosion, provides coastal habitat, and increase recreational and property value with techniques that mimic the natural shoreline	Living Shorelines, Beaches & Dunes, Coastal Wetlands, Oyster Reef Restoration	SLR Storm Surge Erosion
 <p><b>Regional Recreation Economy</b> <i>April 14</i></p>	Aligns Nature-based Solutions with recreation opportunities and supports local/regional economic development	Land Conservation, Stormwater Parks, Living Shorelines	Flooding SLR Erosion

# Updates to the Map App

1. Updated **Priority Locations** and **Existing Projects** and **SUNS Project Ideas**
2. Track Map Updates here:  
<https://tnc.box.com/s/ar4itdi901i3jv79m4f89vp7g7qt8t3y>
3. Added **Shoreline Protection** layers and **reorganized the layers** by Regional Strategy Workshop
4. Made adding projects to the Map App Simpler (drop down menus)



# Scaling Up Nature-based Solutions Map App

Legend

Bookmarks

Layers

Info

Edit

SUNS Counties

Existing Projects

SUNS Project Ideas

Parcels

SUNS Working Group Priority Location

SUNS Workshop 3: Shoreline Protection

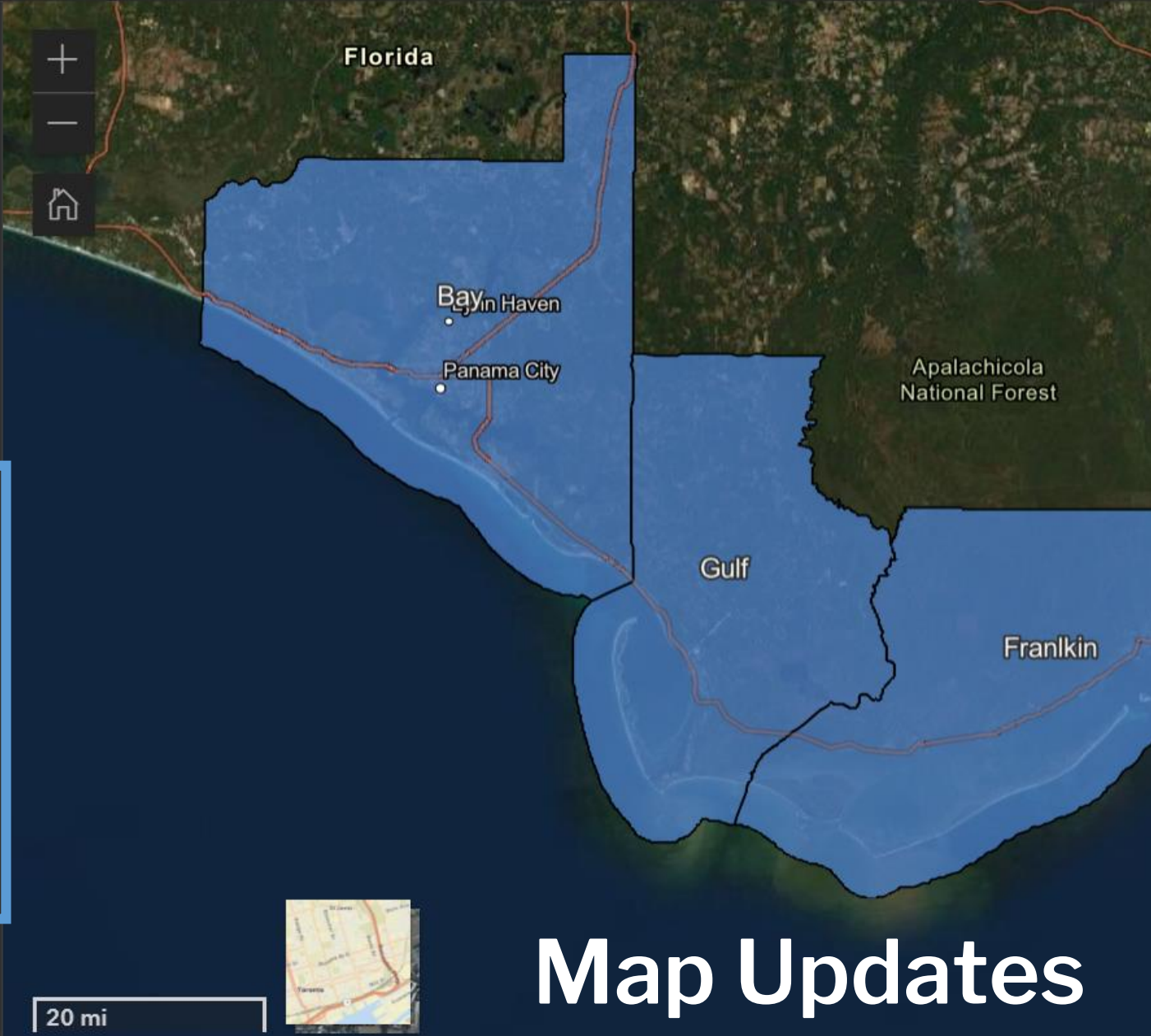
Supporting Layers

SUNS Workshop 1: Greenspace in the Floodplain

SUNS Workshop 2: Community Stormwater Management

Sea Level Rise Projections

<< Collapse



# Map Updates

# Scaling Up Nature-based Solutions Map App

Legend

Bookmarks

Layers

Info

Edit

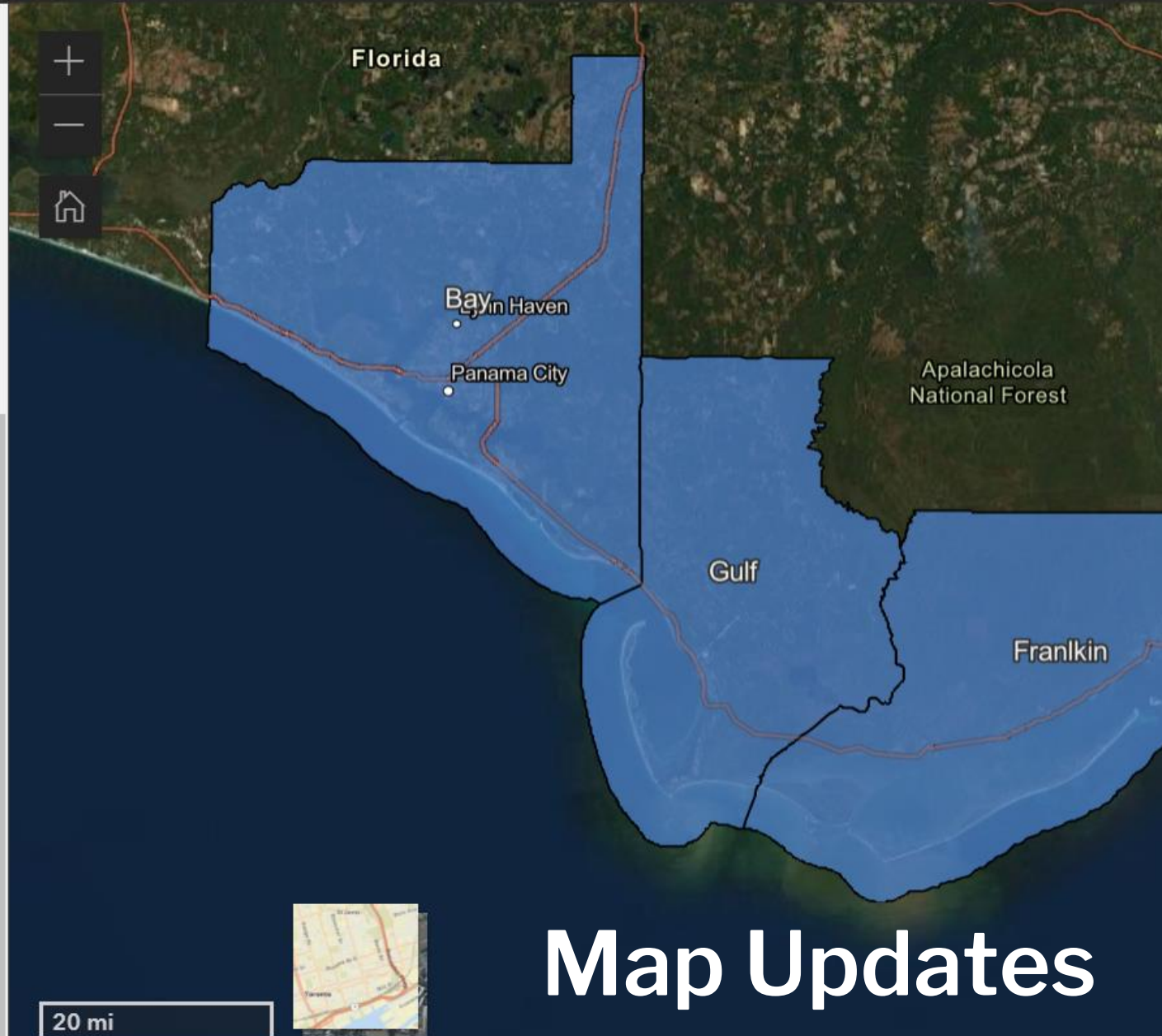
<< Collapse

## ▼ SUNS Workshop 1: Greenspace in the Floodplain

- 👁 Opportunity Areas for Protecting Wetland Migration Pathways
- 👁 Potential Suitable Areas for Protecting Wetland Migration Pathways
- 👁 Opportunity areas for Protecting Coastal Wetlands
- 👁 Potential Suitable Areas for Protecting Coastal Wetlands
- 👁 Opportunity Areas for Conserving Land in the Floodplain
- 👁 Potential Suitable Areas for Conserving Land in the Floodplain

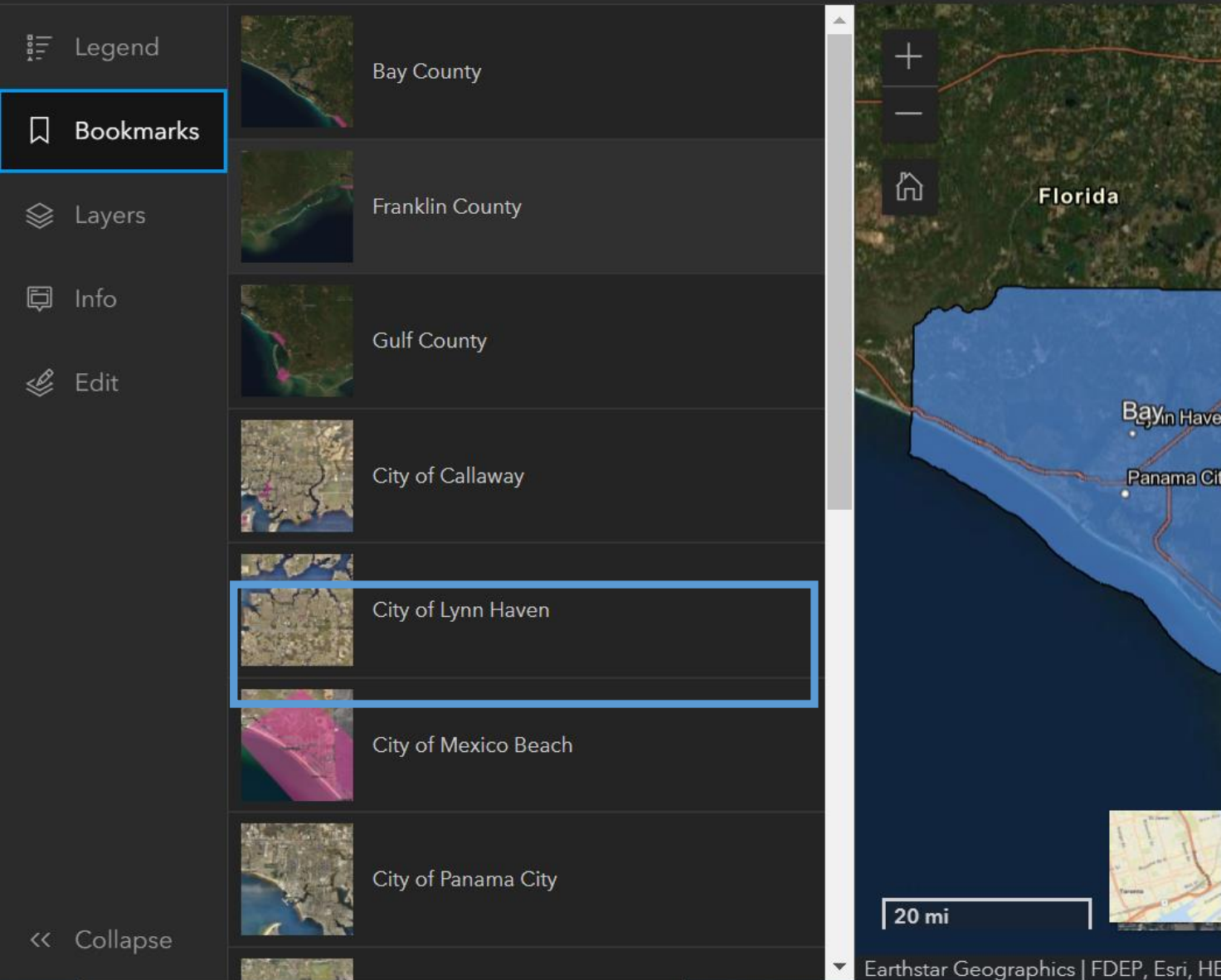
▶ 👁 SUNS Workshop 2: Community Stormwater Management

▶ 👁 Sea Level Rise Projections



# Map Updates



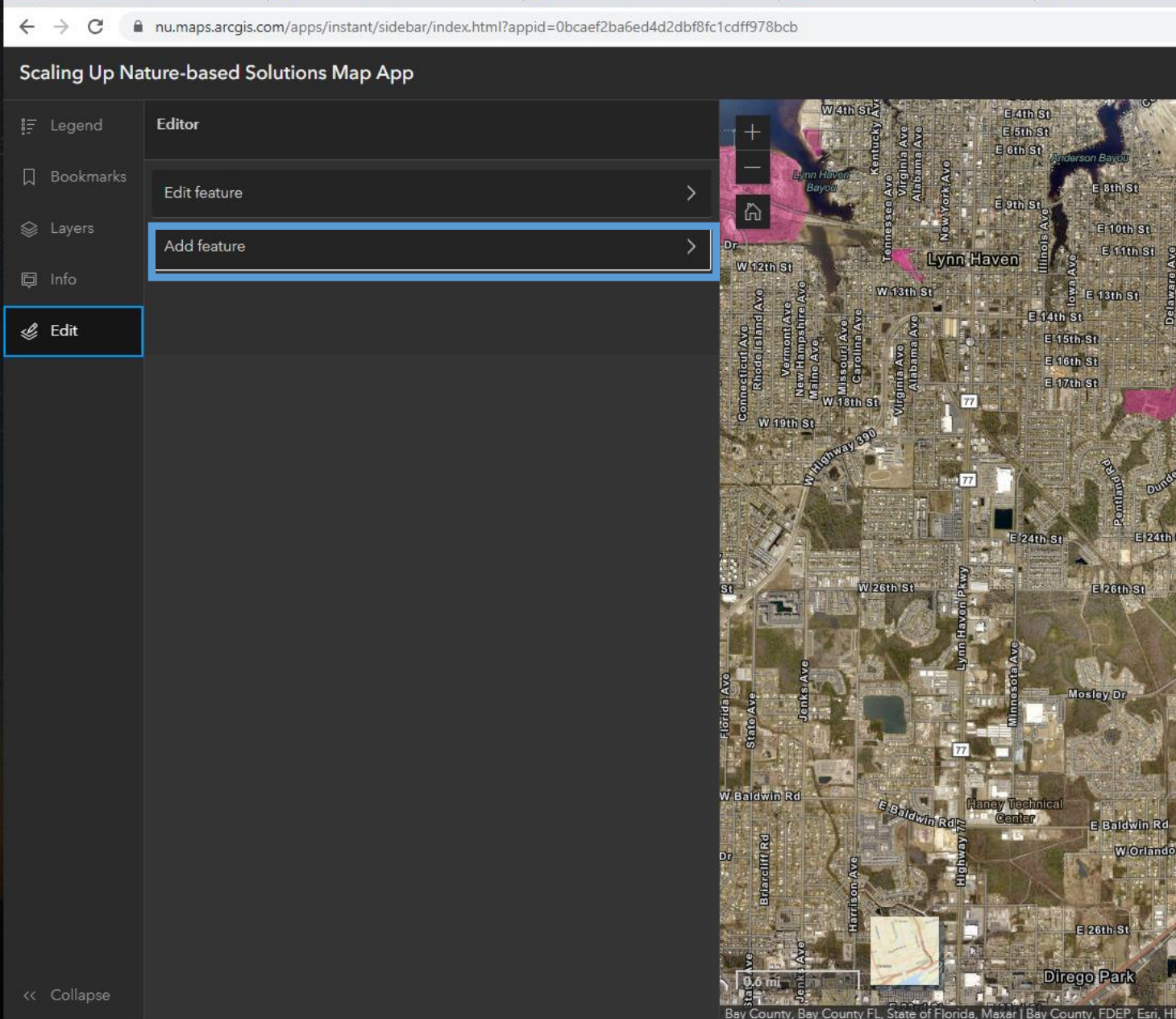


## Adding Projects to the Map App

To add a project to the Map:

1. Navigate to the Map (*link in chat*)
2. Use **Bookmarks** tab to navigate to your jurisdiction.
3. Zoom to where you would like to place the project





# Adding Projects to the Map App

4. Select “Edit” Tab

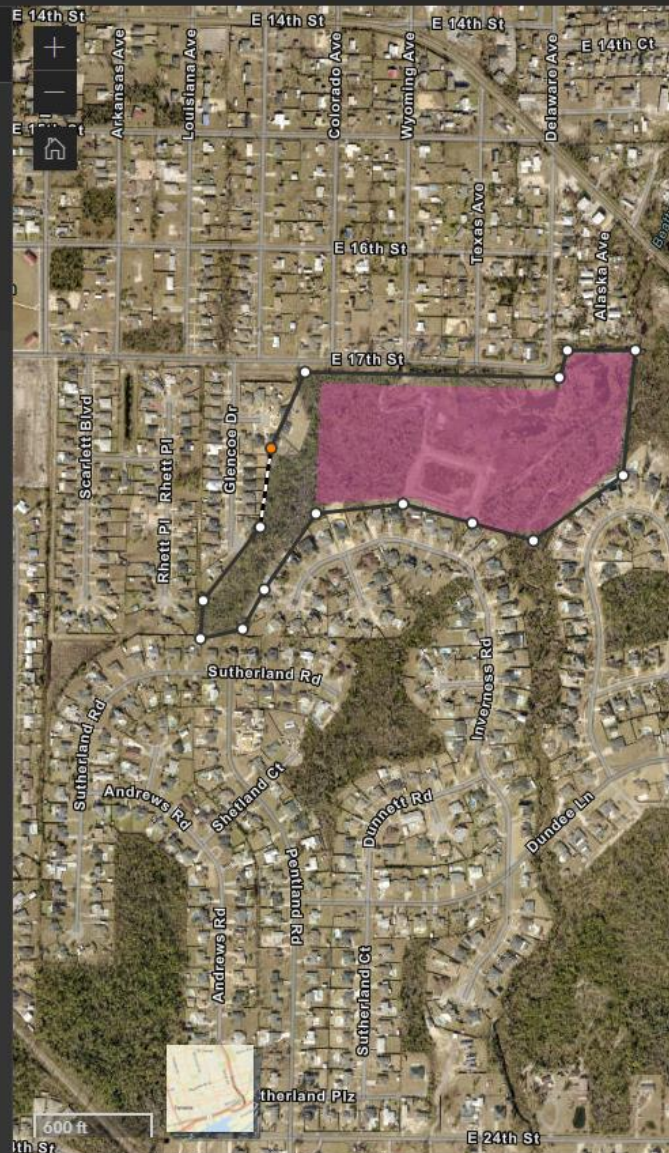
5. Click “Add Feature”



## g Up Nature-based Solutions Map App

Place feature

Click on the map to continue drawing then double-click to complete.



# Adding Projects to the Map App

6. Click a point on the map to start drawing polygon. Trace outline of polygon.
7. Double click to close the polygon



- Legend
- Bookmarks
- Layers
- Info
- Edit

<

Untitled Feature

Organization

Lynn Haven

Project Name

17th Street Stormwater Wetland

Priority Location

Yes

Issue

Flooding

NBS Type

No value

No value

Greenspace: Conserving Land in the Floodplain

Greenspace: Protecting Coastal Wetlands

Greenspace: Protecting Coastal Wetland Migration Pathways

Stormwater: Stormwater Wetland Parks

Stormwater: Culvert Assessment or Improvement

Shoreline Protection: Beaches & Dunes

Shoreline Protection: Living Shorelines



# Adding Projects to the Map App

8. Fill in information about the project:

- Organization
- Project Name
- Priority location (Y/N)
- Issue (Select)
- NBS Type (Select)
- Notes (include details)



Legend

Bookmarks

Layers

Info

Edit

<< Collapse

< Untitled Feature

Organization

Lynn Haven

Project Name

17th Street Stormwater Wetland

Priority Location

Yes

Issue

Flooding

NBS Type

No value

Other Notes

Add

+

-

Home

5th

Arkansas

Louisiana

Glencoe Dr

Rhett Pl

Scarlett Blvd

Sutherland Rd

Andrews Rd

600 ft

Bay County, Bay County FL, State of Florida

Map

600 ft

# Adding Projects to the Map App

9. Click “**Add**” before navigating away from the Edit tab



An aerial photograph of a coastal wetland. In the foreground, there is a large area of brown, marshy land with some small pools of water. A winding waterway or canal cuts through the marsh. To the left, a long wooden pier or breakwater extends into the water. The background shows a vast expanse of blue water under a clear blue sky.

# SHORELINE PROTECTION





# Shoreline Protection

**Purpose:** Stabilizes the shoreline, mitigates erosion, and provides coastal habitat with techniques that mimic the natural shoreline

## Types of NBS

- Beach & Dune Restoration
- Living Shorelines (traditional and hybrid including oyster reef component)
- Coastal Wetlands Protection and Restoration



# BEACH & DUNE RESTORATION







# Beach & Dune Restoration

*Restoring beaches & dunes moves beyond simple beach renourishment and is inclusive of revegetation strategies that help stabilize dunes, offering a means of buffering storm surge and erosion impacts, simultaneously providing wildlife habitat and recreation opportunities*

## **Benefits**

Strategic beach and dune restoration is a viable nature-based solution for reducing erosion and flood risk.

Potential co-benefits include tourism and recreational opportunities, wildlife habitat, increasing property values near the beaches & dunes, increased buffer against erosion and storm surge.

## **Suitability**

For SUNS, we mapped existing beaches and dunes (FWC, FNAI land cover data) and removed Coastal Barrier Resources System unit areas.



# Beach & Dune Restoration: Existing Efforts in the Panhandle





# Beach & Dune Restoration Opportunity Map

Scaling Up Nature-based Solutions Map App



Legend



Bookmarks



Layers



Info



Edit

## SUNS Working Group Priority Location



Areas of Interest

## SUNS Workshop 3: Shoreline Protection

### Areas of Beaches & Dunes



## Opportunity Areas for Beach & Dune Restoration



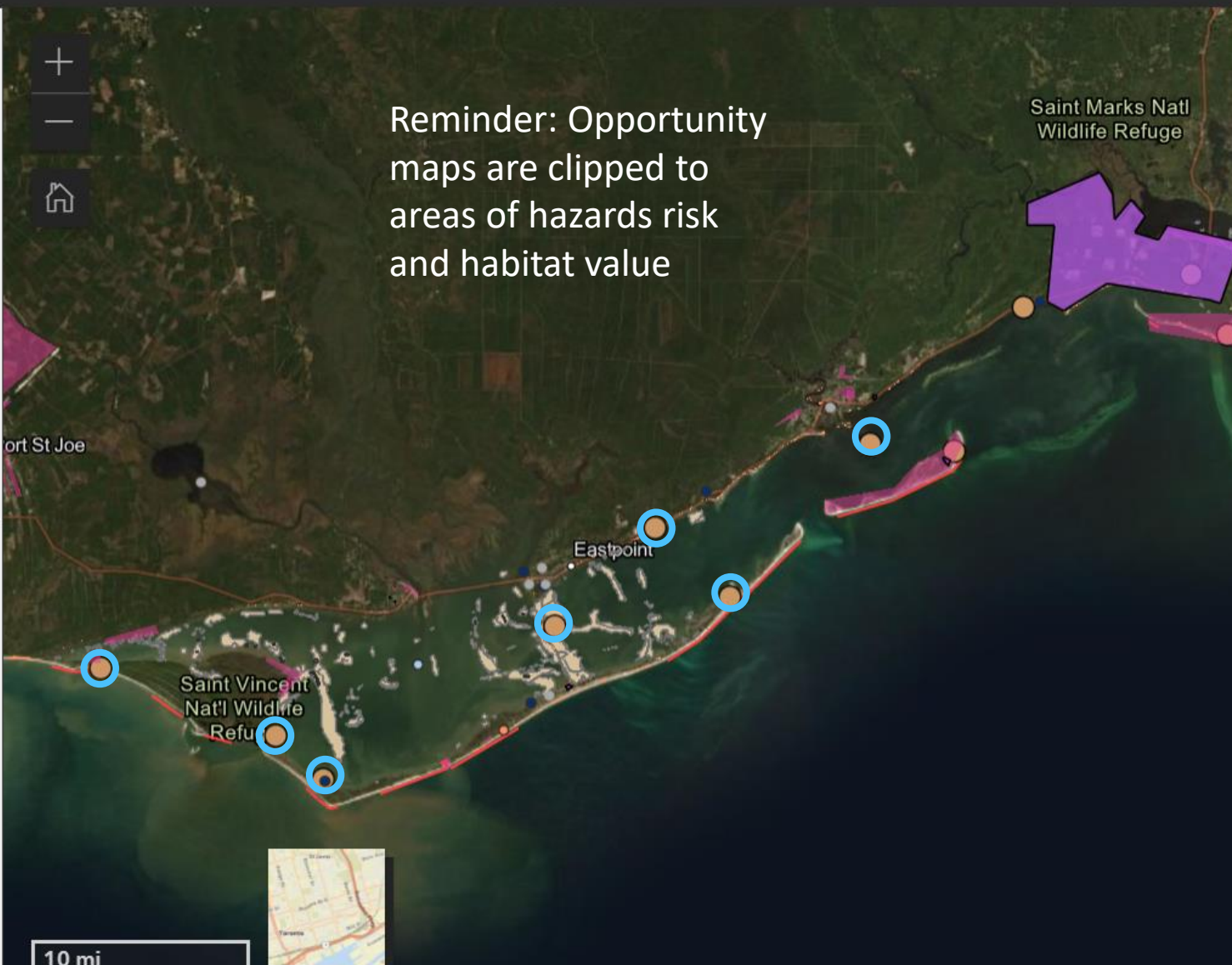
## Critical Erosion Areas



## Current Oyster Beds



<< Collapse



# Beach & Dune Restoration Opportunity Map

Scaling Up Nature-based Solutions Map App



Legend

Bookmarks

Layers

Info

Edit

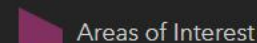
Existing Projects (Footprints)



SUNS Project Ideas



SUNS Working Group Priority Location

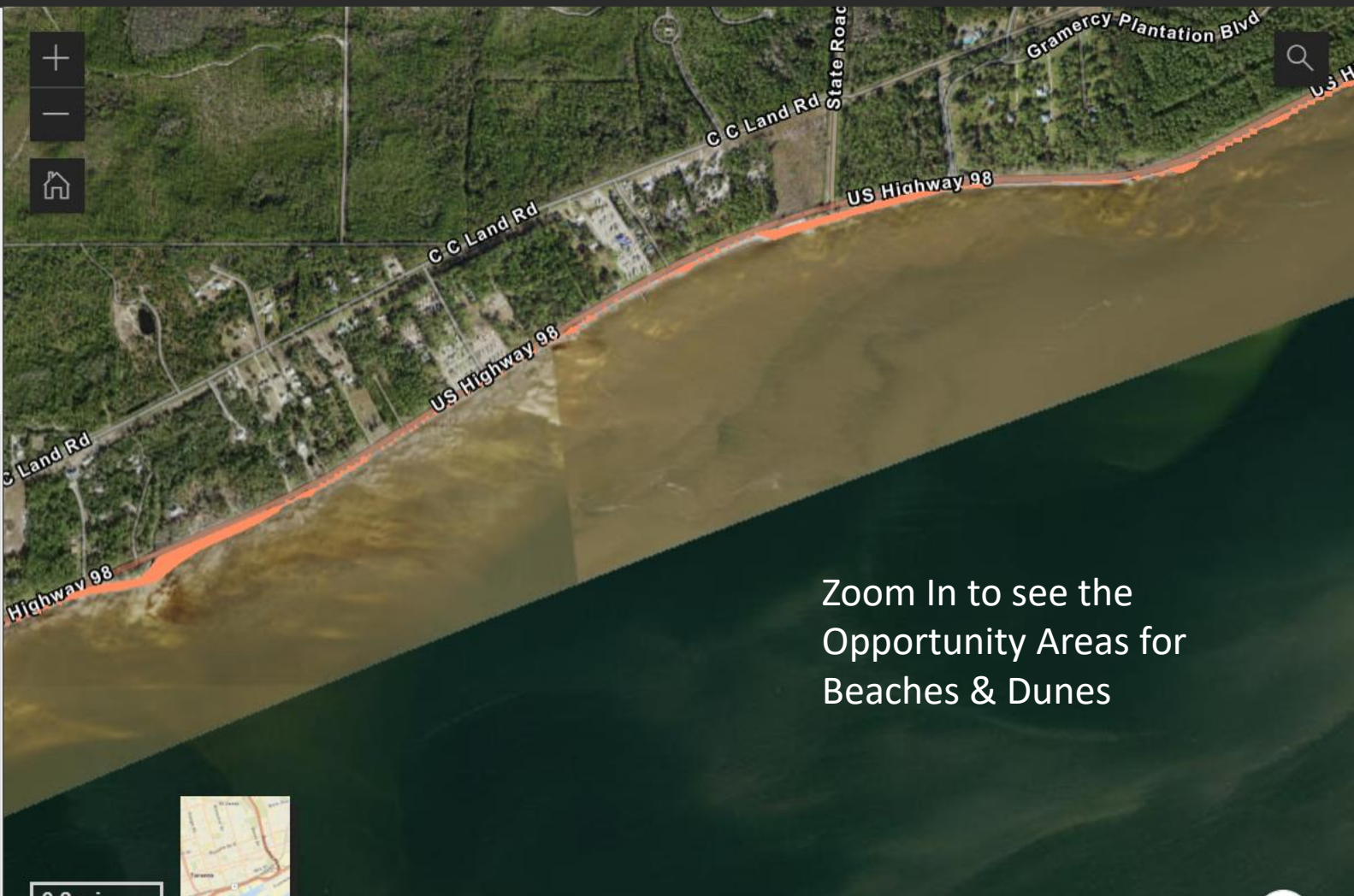


SUNS Workshop 3: Shoreline Protection

Opportunity Areas for Beach & Dune Restoration



Critical Erosion Areas



Zoom In to see the  
Opportunity Areas for  
Beaches & Dunes

Photo:






An aerial photograph of a coastal wetland. In the foreground, there is a large area of brown, marshy ground with some small pools of water. A winding, narrow waterway or channel cuts through the marsh. To the left, a long wooden pier or boardwalk extends from the land into the water. The water is a deep blue, and the sky is a clear, bright blue. The overall scene depicts a natural coastal environment.

## **IDENTIFYING POTENTIAL PROJECTS: Beach & Dune Restoration**



 Legend

 Bookmarks

 Layers


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 SUNS Working Group Priority Location


▼  SUNS Workshop 3: Shoreline Protection


 Opportunity Areas for Living Shorelines

 Potential Suitable Areas for Living Shorelines

 Areas of Beaches & Dunes


 Opportunity Areas for Beach & Dune Restoration

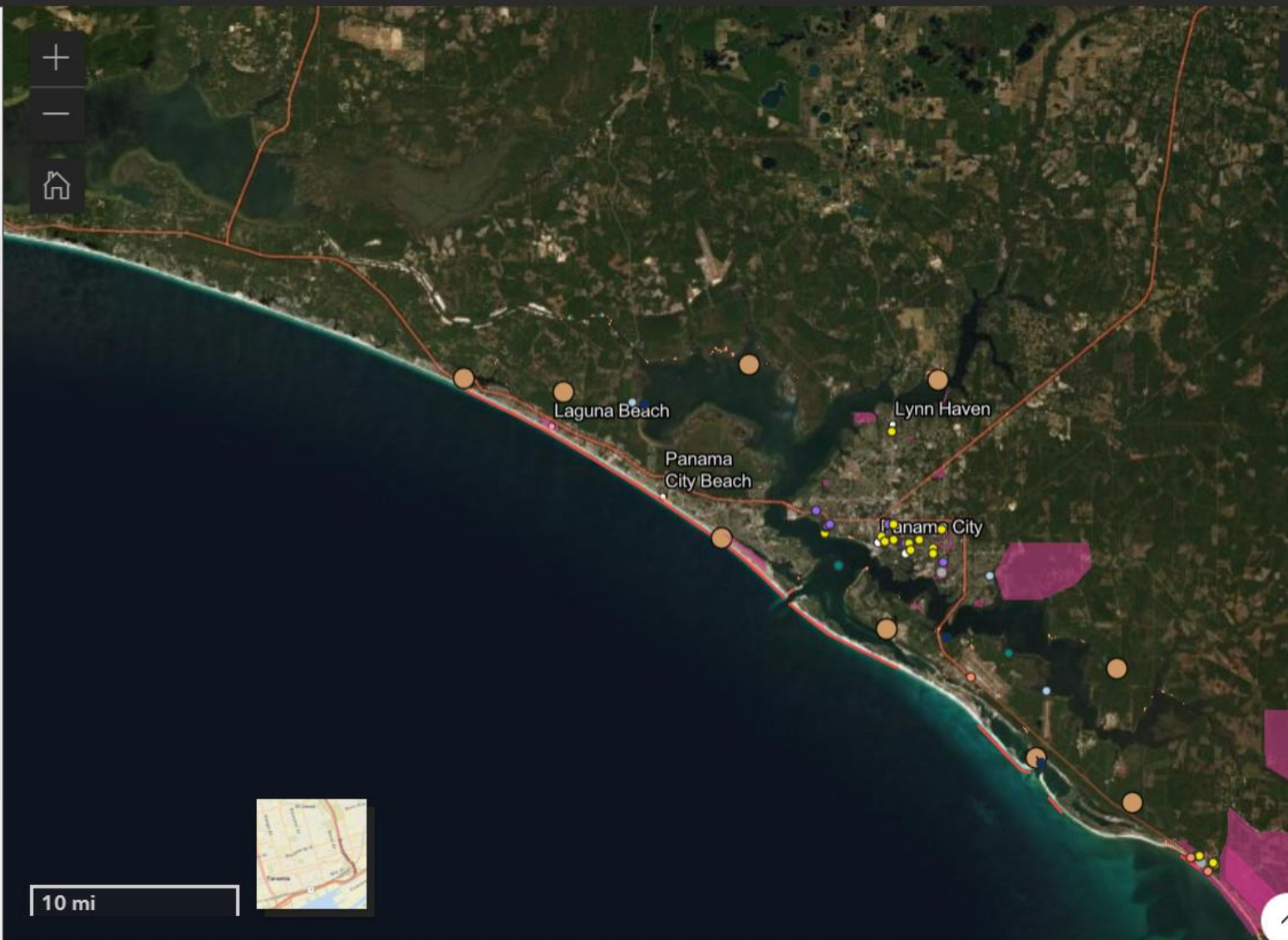
 Potential Suitable Areas for Beach & Dune Restoration

 Critical Erosion Areas

 Current Oyster Beds

▶  Supporting Layers

▶  SUNS Workshop 1: Greenspace in the Floodplain



Earthstar Geographics | Bay County, FDEP, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS

Powered



## Exercise: Identify potential projects and sites

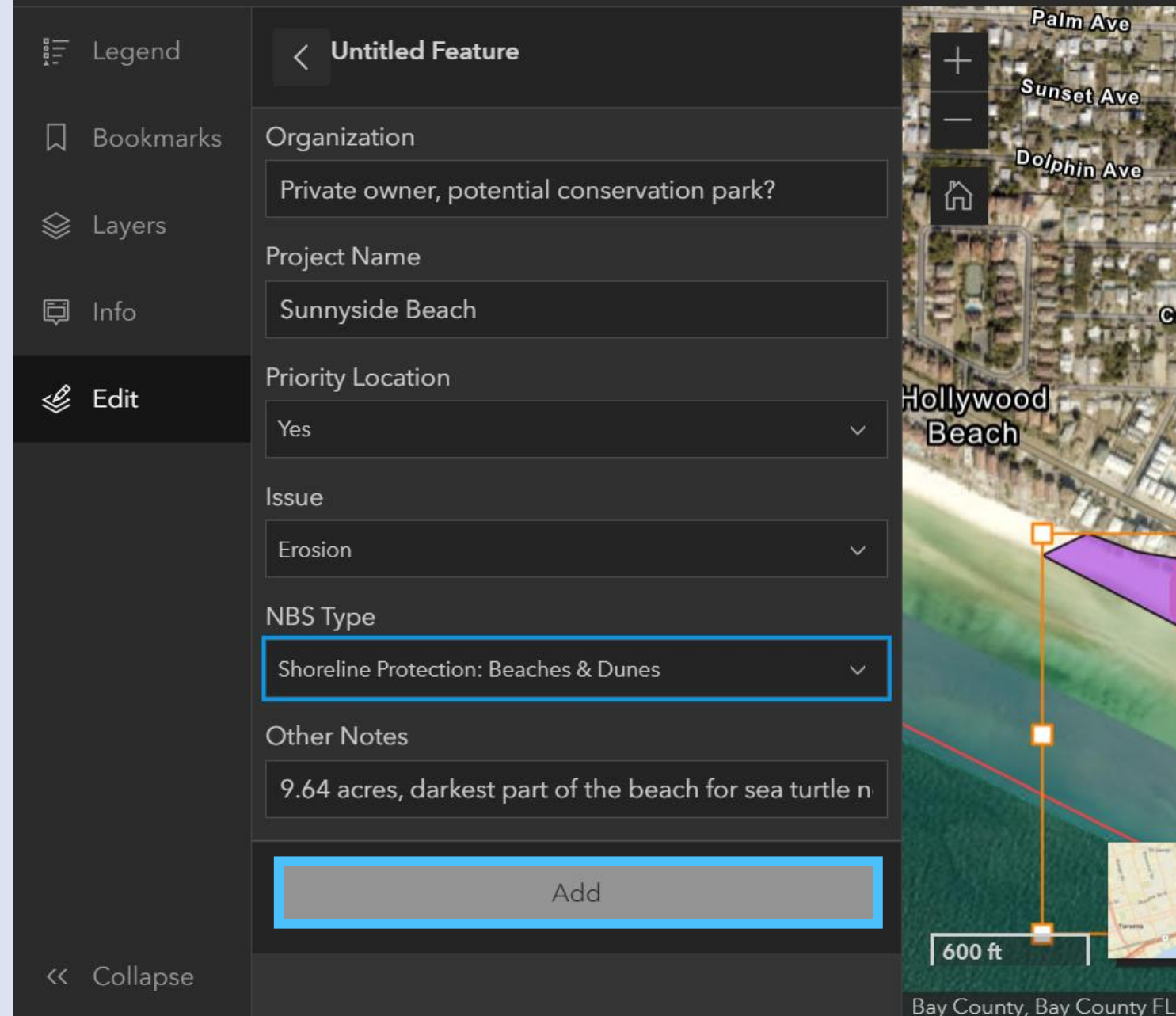
1. Turn on the NBS Layer (Opportunity Area for Beach & Dune Restoration)
2. Look for areas where the NBS layer overlaps with your pink Priority Locations (or other priority locations that might not be mapped). Look for Critical Erosion Areas (red lines).





## Exercise: Identify potential projects and sites

3. For areas where you would like to consider a project, navigate to the “**Edit**” tab.
4. Click “**Add Feature.**” Fill in the form to add new project ideas.
5. Do not forget to click “**Add**” once you are done!



Legend

Bookmarks

Layers

Info

**Edit**

< Collapse

Untitled Feature

Organization

Private owner, potential conservation park?

Project Name

Sunnyside Beach

Priority Location

Yes

Issue

Erosion

NBS Type

Shoreline Protection: Beaches & Dunes

Other Notes

9.64 acres, darkest part of the beach for sea turtle n

Add

600 ft

Bay County, Bay County FL

Palm Ave

Sunset Ave

Dolphin Ave

Hollywood Beach

SUNS

SCALING UP NATURE-BASED SOLUTIONS



# Individual Work Time

Take 15 minutes to explore the Map App and add beach & dune restoration project ideas.



# LIVING SHORELINES: TRADITIONAL & HYBRID





# Living Shorelines: Traditional & Hybrid







# Living Shorelines: Traditional & Hybrid

*Shoreline stabilization techniques that employ or mimic natural processes, included vegetated shorelines (traditional) or vegetated shorelines combined with a structural intervention (like oyster reefs—referred to as hybrid).*

## **Benefits**

Living shorelines, when implemented in appropriate locations, are viable nature-based solution for stabilizing shorelines and reducing erosion.

Potential co-benefits include recreational opportunities, fish and wildlife habitat, reduced maintenance costs, and improved water quality.

## **Suitability**

For SUNS, we mapped areas suitable for traditional living shorelines (vegetation only), hybrid living shorelines (requiring some structural support), and hybrid living shorelines with potential for oysters. Suitability is based on fetch, proximity to boating channels, and adjacent marshes and oyster reefs.



# Traditional or Hybrid





# Living Shoreline Suitability and Opportunity

## Scaling Up Nature-based Solutions Map App



Legend

Bookmarks

Layers

Info

Edit

### SUNS Workshop 3: Shoreline Protection

#### Opportunity Areas for Living Shorelines

Suitability

- not suitable
- hybrid with oysters
- hybrid shoreline
- traditional living shoreline
- others

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#### Critical Erosion Areas





# Living Shoreline Suitability and Opportunity

Shoreline Suitability	Categories	Classification
<b>Low – not suitable</b>	High energy & far from current marsh	Fetch > 5 miles *or* Boating channel < 100m *and* Existing marsh > 100m
<b>Medium – Hybrid solutions with oysters</b>	Medium energy & close to current oyster reefs	Fetch < 5 miles & > 1 mile *or* Boating channel > 100m *and* Existing oysters < 10,000m
<b>Medium – Hybrid solutions</b>	Medium energy & close to current marsh	Fetch < 5 miles & > 1 miles *or* Boating channel > 100m *and* Existing marsh < 100m
<b>High – Vegetated or natural solutions</b>	Low energy & close to current marsh	Fetch < 1 miles *or* Boating channel > 200m *and* Existing marsh < 100m



An aerial photograph of a coastal wetland. In the foreground, there is a large area of brown, marshy ground with some small pools of water. A winding, narrow waterway or channel cuts through the marsh. To the left, a long wooden pier or boardwalk extends from the land into the water. The water is a deep blue, and the sky is a clear, bright blue. The overall scene depicts a natural coastal environment.

## **IDENTIFYING POTENTIAL PROJECTS: Living Shorelines: Traditional or Hybrid**



# Exercise: Identify potential projects and sites

Scaling Up Nature-based Solutions Map App

Legend

Bookmarks

**Layers**

Info

Edit

SUNS Working Group Priority Location

▼ SUNS Workshop 3: Shoreline Protection

Opportunity Areas for Living Shorelines

Potential Suitable Areas for Living Shorelines

Areas of Beaches & Dunes

Opportunity Areas for Beach & Dune Restoration

Potential Suitable Areas for Beach & Dune Restoration

SHaRC model Run02 Top25

Critical Erosion Areas

Current Oyster Beds

Supporting Layers

1 mi

Indian Pass

Indian Lagoon

County Road 30A

30

1-30A

State of Florida, Earthstar Geographics | FDEP, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA

Powered by Esri





Legend



Bookmarks



Layers



Info



Edit

## SUNS Project Ideas



## SUNS Working Group Priority Location



Areas of Interest

## SUNS Workshop 3: Shoreline Protection

### Opportunity Areas for Living Shorelines

#### Suitability

- not suitable
- hybrid with oysters
- hybrid shoreline
- traditional living shoreline
- others

### Critical Erosion Areas



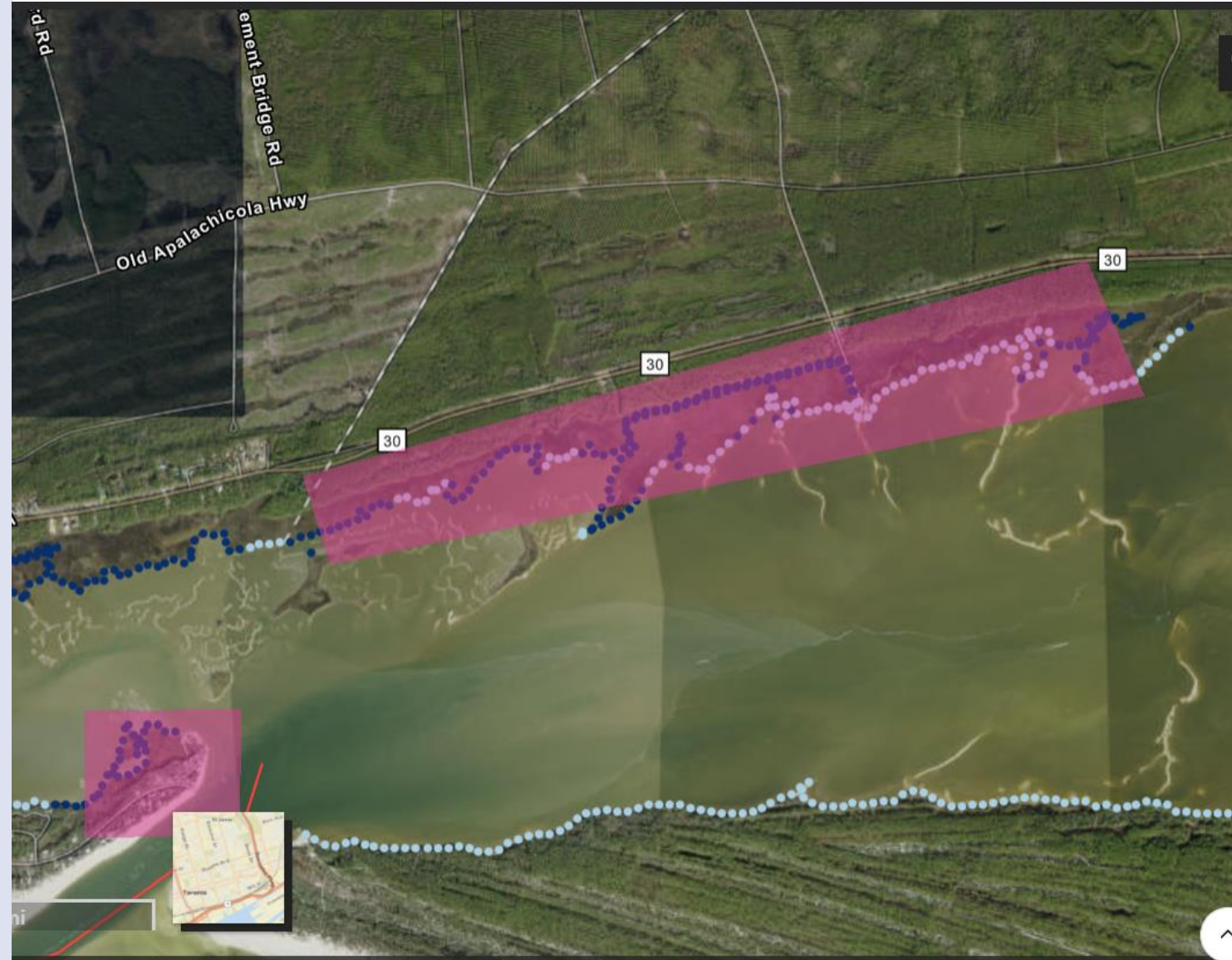
<< Collapse





## Exercise: Identify potential projects and sites

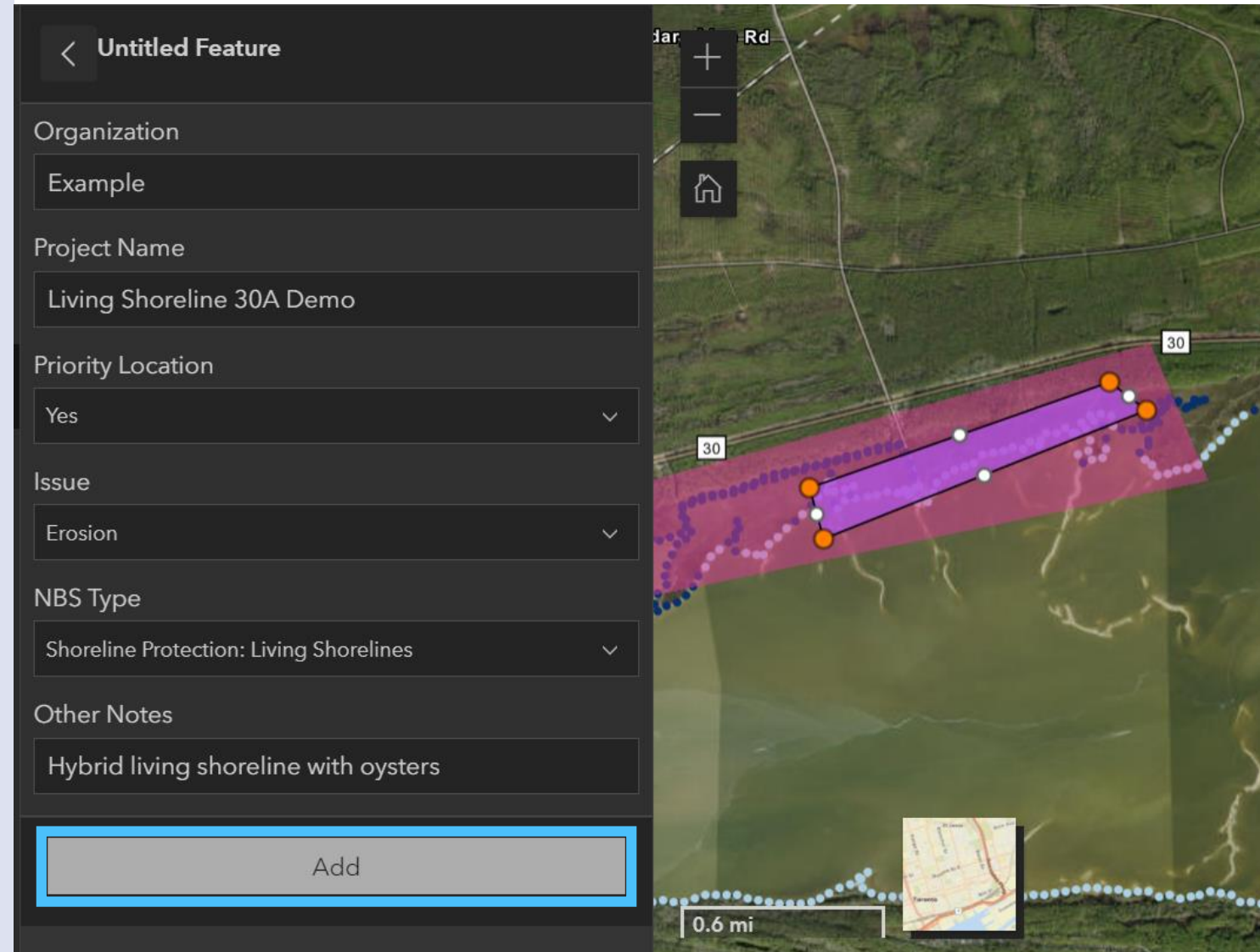
1. Turn on the NBS Layer (Living Shoreline Opportunity). *In Franklin County, you can also turn on the SHaRC layer*
2. Look for areas where the NBS layer overlaps with your pink Priority Locations (or other priority locations that might not be mapped)
3. Look for areas where NBS layer is adjacent to Critical Erosion areas (red line)
4. Would any of these areas be interesting locations for future shoreline projects? Make a note of what type of shoreline would be suitable for that stretch of coast (traditional, hybrid, hybrid with oysters)





## Exercise: Identify potential projects and sites

1. For areas where you would like to consider a project, navigate to the “**Edit**” tab.
2. Click “**Add Feature.**” Fill in the form to add new project ideas. In the “Notes” section, include what type of shoreline you think would be most appropriate (traditional, hybrid, hybrid with oysters).
3. Do not forget to click “**Add**” once you are done!



The screenshot displays the SUNS mobile application interface. On the right, a satellite map shows a coastal area with a purple-shaded polygon representing a project site. The map includes a scale bar for 0.6 miles and a small inset map in the bottom right corner. On the left, a dark-themed form titled "Untitled Feature" is visible. The form contains the following fields:

- Organization:** Example
- Project Name:** Living Shoreline 30A Demo
- Priority Location:** Yes (with a dropdown arrow)
- Issue:** Erosion (with a dropdown arrow)
- NBS Type:** Shoreline Protection: Living Shorelines (with a dropdown arrow)
- Other Notes:** Hybrid living shoreline with oysters

At the bottom of the form is a large, light gray button with the text "Add", which is highlighted by a blue rectangular border.



# Individual Work Time

Take 15 minutes to explore the Map App and add shoreline project ideas.



# Small Group Shares

1. Join breakout rooms
2. Round-robin shares: potential sites for beaches & dunes or living shorelines projects?
3. Were there projects that you did not have time to map? If so, tell the facilitator so that we can follow up after the call!



# Next Steps

1. We will close editing by **March 25**. Add projects related to any of the first three workshops!
2. If you do not have time to add your projects to the map before then, or have trouble adding projects, email Anna Jane ([annajane.jones@tnc.org](mailto:annajane.jones@tnc.org) )
3. Schedule individual follow up with Anna Jane and the team as needed
4. Next Workshop is **April 14<sup>th</sup>** on the Regional Recreation Economy!