

MAPPING ECOSYSTEM MARKETS IN THE UNITED STATES

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FOREST TRENDS' ECOSYSTEM MARKETPLACE

Forest Trends works to conserve forests and other ecosystems through the creation and wide adoption of a broad range of environmental finance, markets and other payment and incentive mechanisms.

Our Ecosystem Marketplace initiative is the leading global source of information on environmental finance, markets, and payments for ecosystem services.



MARKETS TRACKING

We've tracked carbon, water, and biodiversity markets since 2008, but data has been 'siloed' in our reports and program inventories.

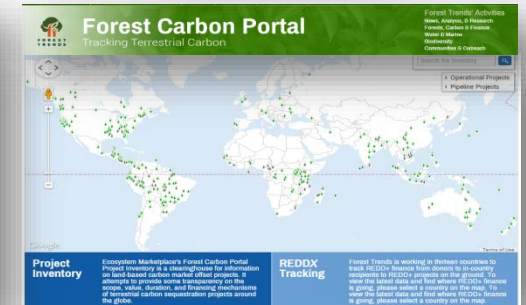
SURVEY



SURVEY



SURVEY



- “View from 36,000 feet”
- Point data only
- No policy context
- No environmental context

THE PARTNERSHIP

PARTNERSHIP GOALS

Improve quality and accessibility of information on ecosystem markets – to help actors understand markets, identify opportunities, and make informed decisions.

PARTNERSHIP OUTPUTS TO DATE

Map data: EnviroAtlas markets data

Report: An Atlas of Ecosystem Markets in the United States

Use cases: Practical applications of the data with partner orgs (in development)

THE PARTNERS



ENVIROATLAS: WHY COLLABORATE?

- Integrate market cross-cutting data
- Spatial analysis of market dynamics
- Show context of markets
- Reach a broader audience

THE ECOSYSTEM MARKETS DATA

THE ECOSYSTEM MARKETS MAP DATA

The four major ecosystem markets asset types are included on EnviroAtlas, as are a range of transaction mechanisms.



WETLANDS AND STREAMS

Compensatory mitigation markets for wetland and stream habitat



WATERSHED SERVICES

Water quality trading markets

Water rights acquisitions/leasing for environmental flows

Groundwater mitigation markets

Water funds and direct payments

Public subsidies for watershed protection



IMPERILED SPECIES AND HABITATS

Compensatory mitigation markets for endangered species habitat

Voluntary markets for candidate species habitat



FOREST AND LAND-USE CARBON

Compliance carbon offset markets

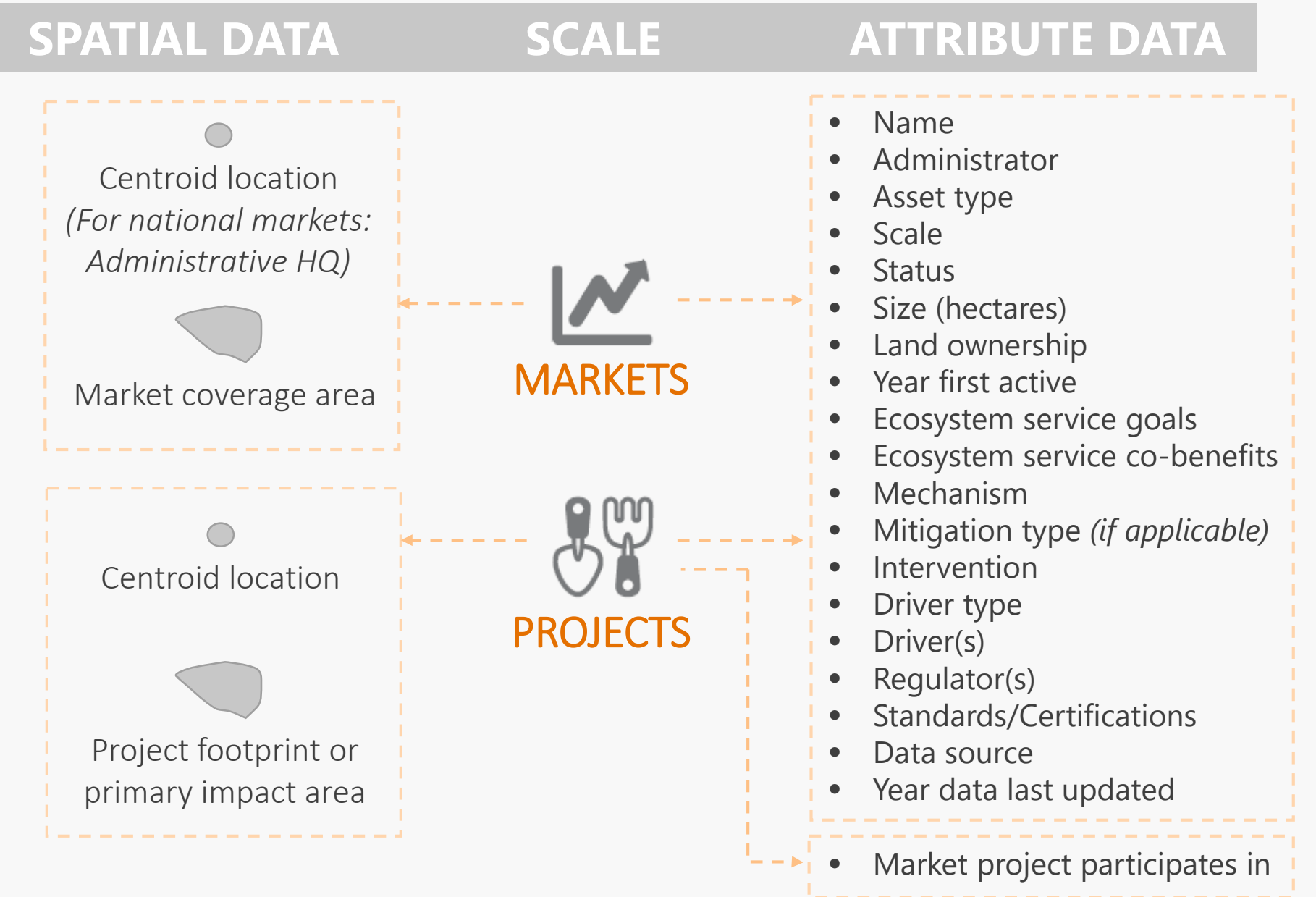
Voluntary carbon offset markets

THE ECOSYSTEM MARKETS MAP DATA

Initiatives are tracked at two levels: the **market** and **project level**, with point and polygon data available for each.

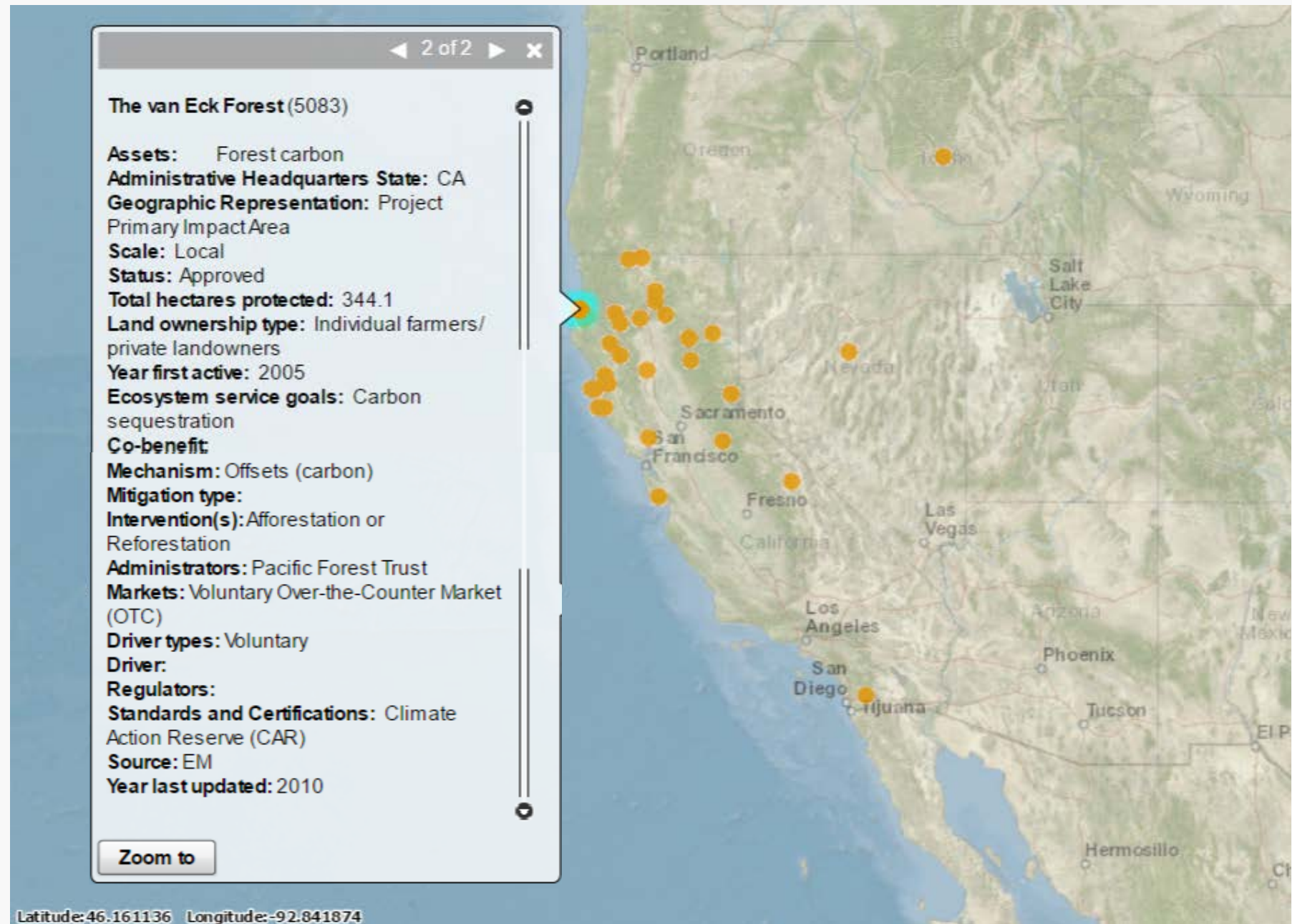
Market: Any program or platform that facilitates transactions between buyers and sellers who exchange financial compensation for ecosystem assets or practices that restore, enhance, or protect ecosystem services. Markets are organized around specific asset types. A market can encompass many distinct projects.

Project: A site, or suite of sites, where restoration, enhancement, or other resource conservation actions are implemented for the purposes of marketing the resulting ecosystem service assets or outcomes to buyers.



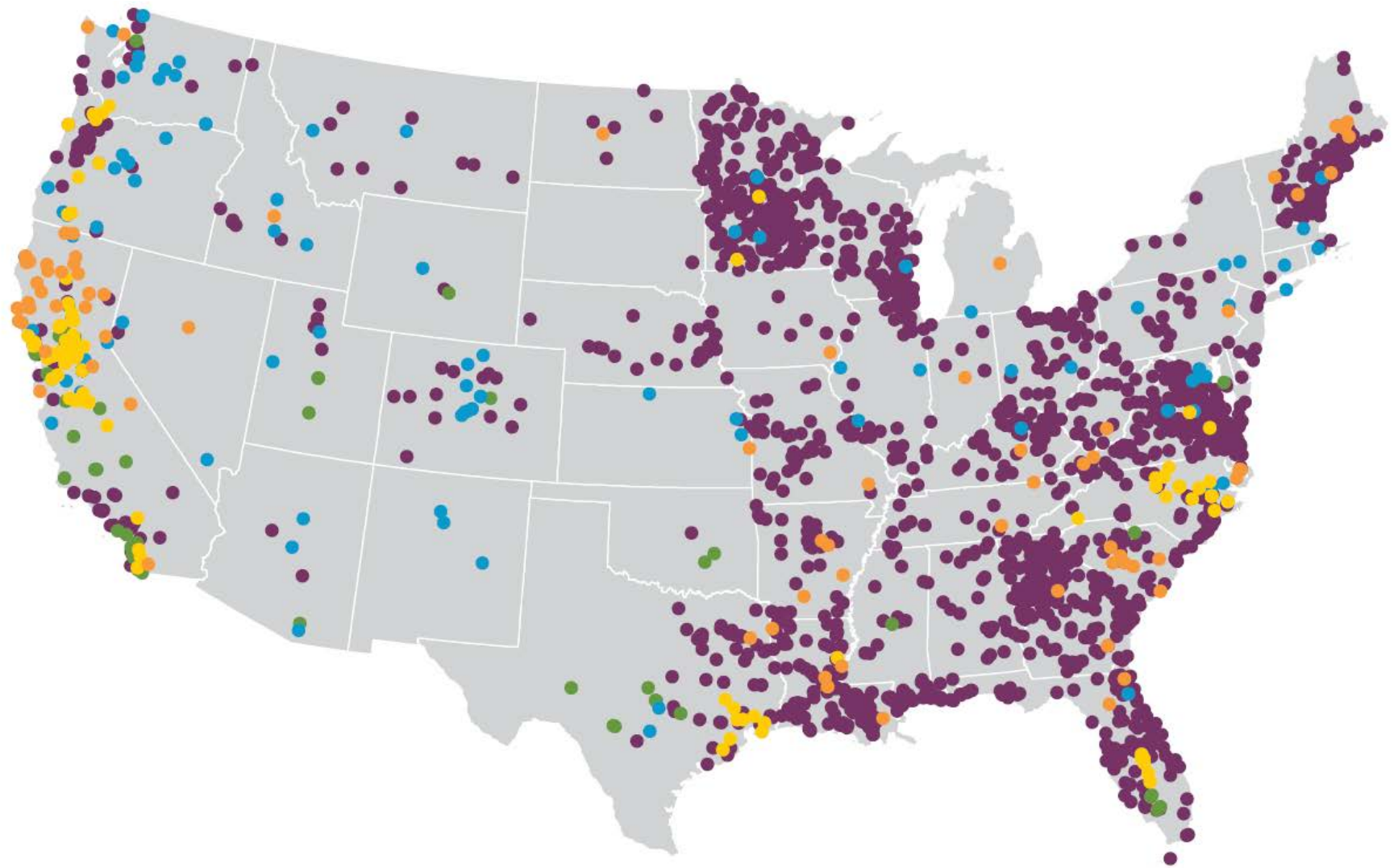
SAMPLE PROJECT PROFILE ON ENVIROATLAS

Also on EnviroAtlas: Map descriptions, metadata, and fact sheets for each map layer.



Source: EnviroAtlas.

WHERE ARE MARKETS, AND WHAT ECOSYSTEM SERVICES ASSETS ARE THEY FOCUSED ON?

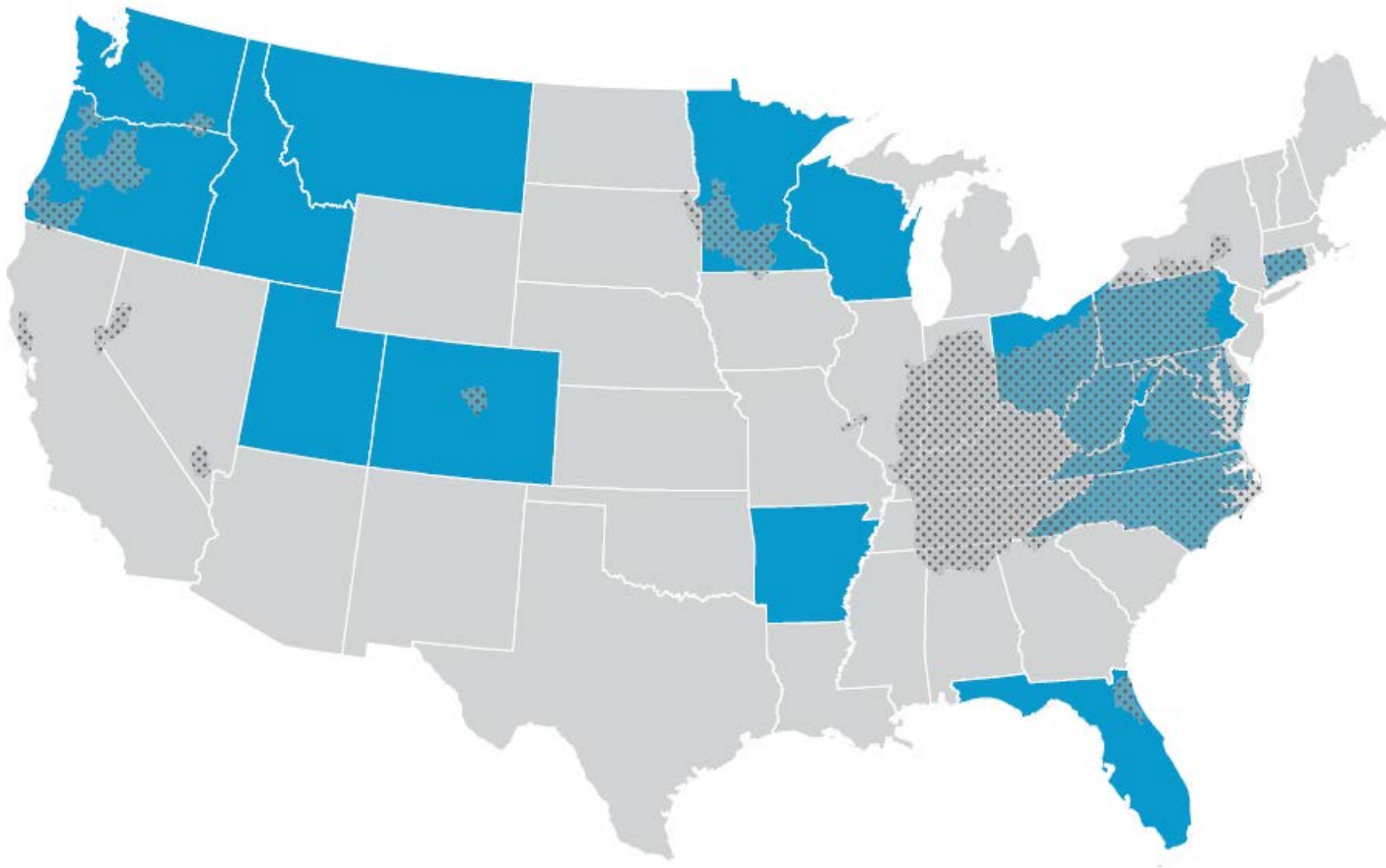


● Forest and land-use carbon (81) ● Imperiled species/habitats (76) ● Wetlands and streams (1,973)
● Watersheds (97) ● Multiple asset types (113)

Source: Forest Trends' Ecosystem Marketplace.

HOW CAN POLICY HELP SUPPORT MARKET GROWTH?

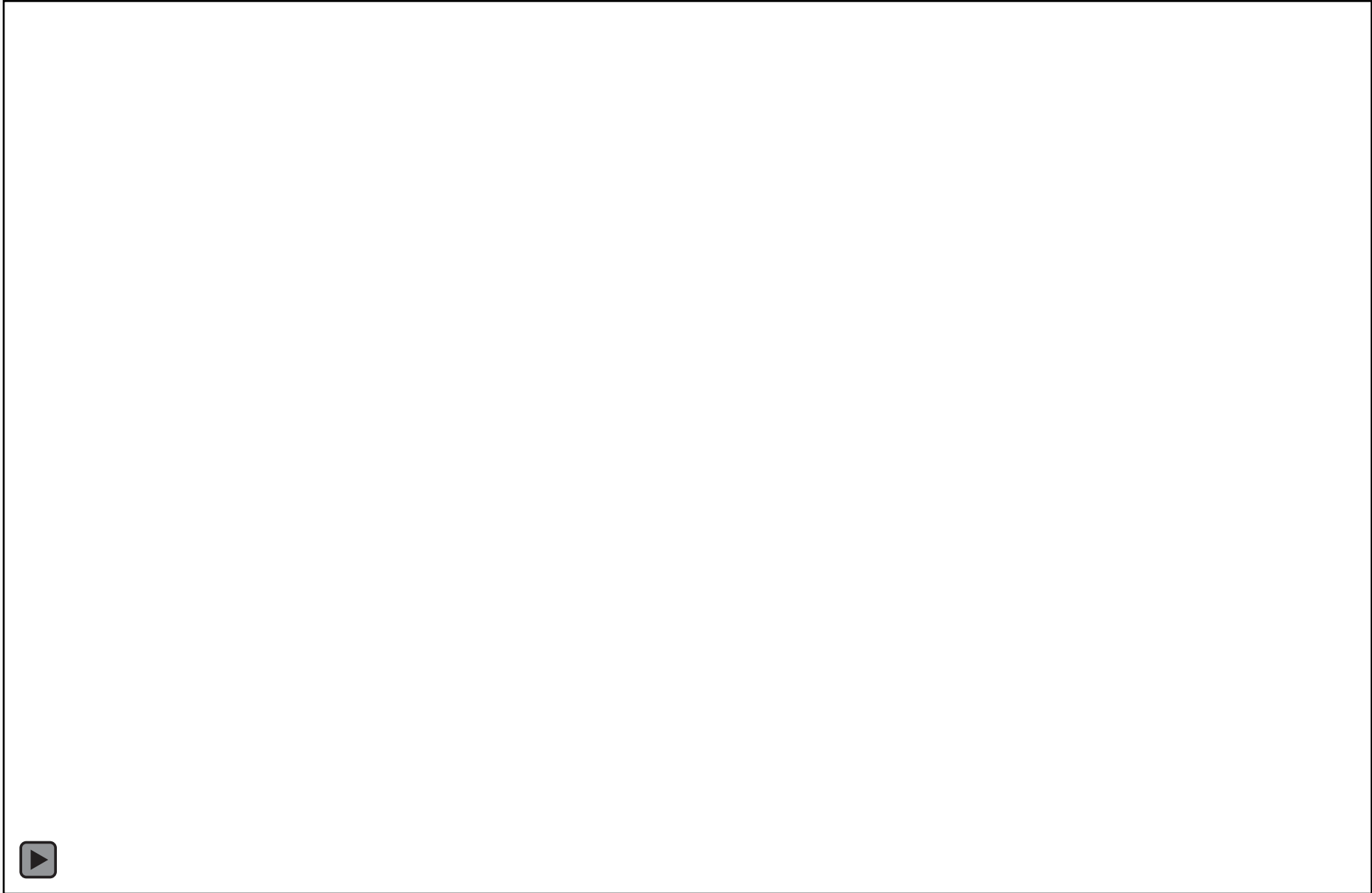
Water quality trading markets and policies in the United States



State-scale trading/offset policy Watershed markets utilizing trading/offset mechanisms

Source: Forest Trends' Ecosystem Marketplace.

WHERE ARE NEW INITIATIVES EMERGING?



Source: Forest Trends' Ecosystem Marketplace.

WHAT'S NEXT

NEXT STEPS: UPDATE AND EXPAND THE DATASET

PROPOSED UPDATES

- Update all markets through 2015
- Transaction data at the state or market level summarizing market value and average credit prices
- New conservation finance mechanisms:
 - CRP enrollments summarized at the 12-digit HUC level
 - Conservation easements
 - New voluntary habitat crediting mechanisms
 - New credit types: Pollinator, marine...
- Expanded watershed markets data at the project level
- Expand enabling policy to local/regional scales

OTHER IDEAS??

Contributors:



Ecosystem Marketplace
A FOREST TRENDS INITIATIVE

USE CASE

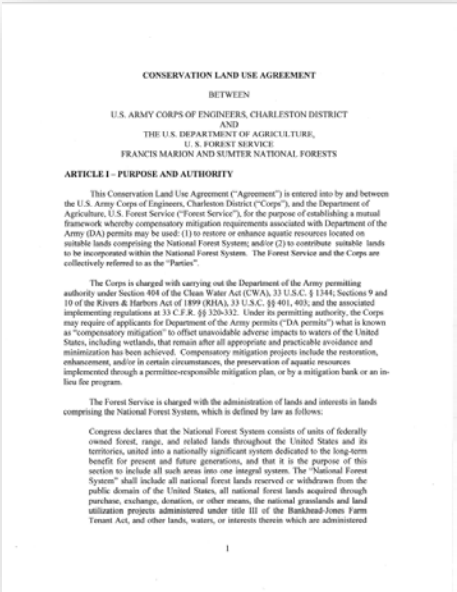
Assessing compatibility of wetlands compensatory mitigation on lands prioritized for USFS acquisition in SC

*PRELIMINARY FINDINGS!

Leveraging
compensatory
mitigation to achieve
USFS Land Ownership
Adjustment Strategy
and restoration
priorities

Background

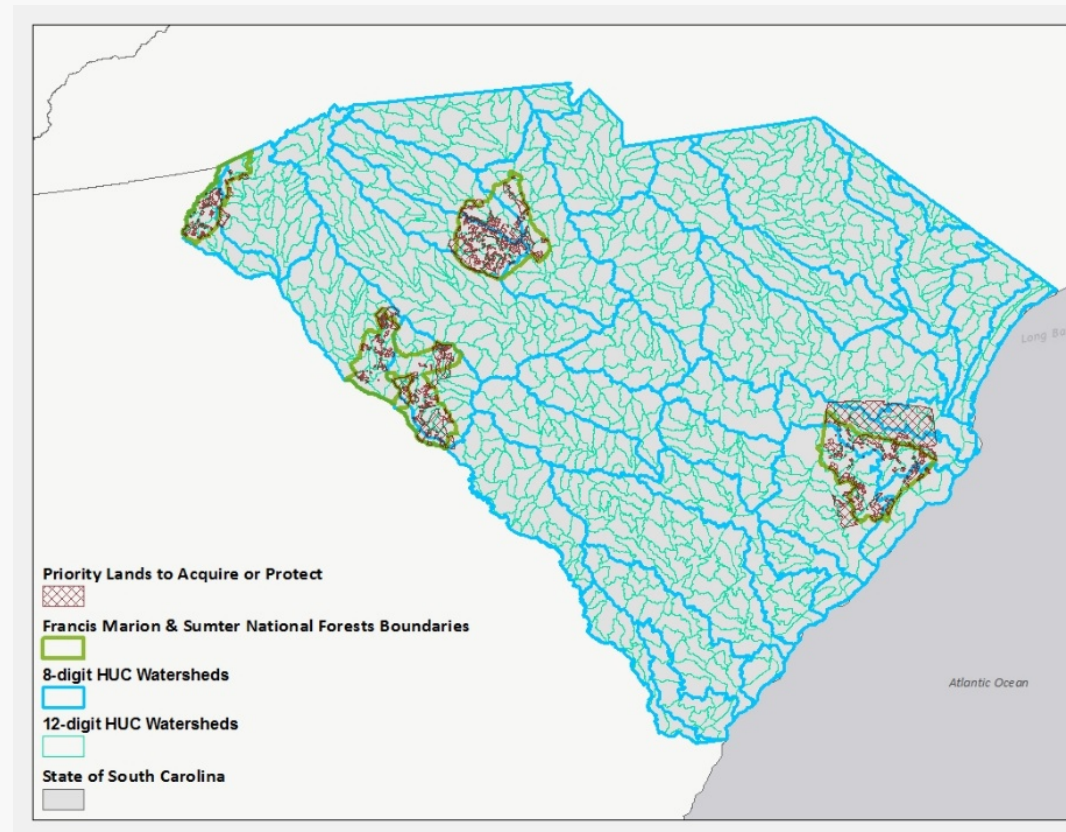
- 2013 Conservation Land Use Agreement between the Corps (Charleston District) and the Francis Marion & Sumter National Forests established a framework whereby parties could meet compensatory mitigation requirements by restoring or enhancing aquatic resources on Forest lands or contributing suitable resources to the National Forest System through protection and incorporation of private inholdings or adjacent properties.
- 2016 Land Ownership Adjustment Strategy (LOAS) recognized that compensatory mitigation can help support achieve land acquisition, private land protection, and all-lands restoration goals.
- LOAS also identified need for proactive planning so that when compensatory mitigation requests arise, the Forest Service can respond with a strategic decision regarding potential properties for acquisition as part of mitigation activities. **This means anticipating where demand is likely to arise, and understanding where restoration is likely to succeed.**



ENVIROATLAS USE CASE

About this use case:
Assessing compatibility of
wetlands compensatory
mitigation on lands
prioritized for USFS
acquisition

- **Purpose:** Screening tool for the USFS for preparing to respond to future compensatory mitigation requests by understanding where restoration potential is high, and where demand is likely to arise.
- **Research question:** Which properties prioritized for USFS acquisition are most likely to be compatible with wetland compensatory mitigation?

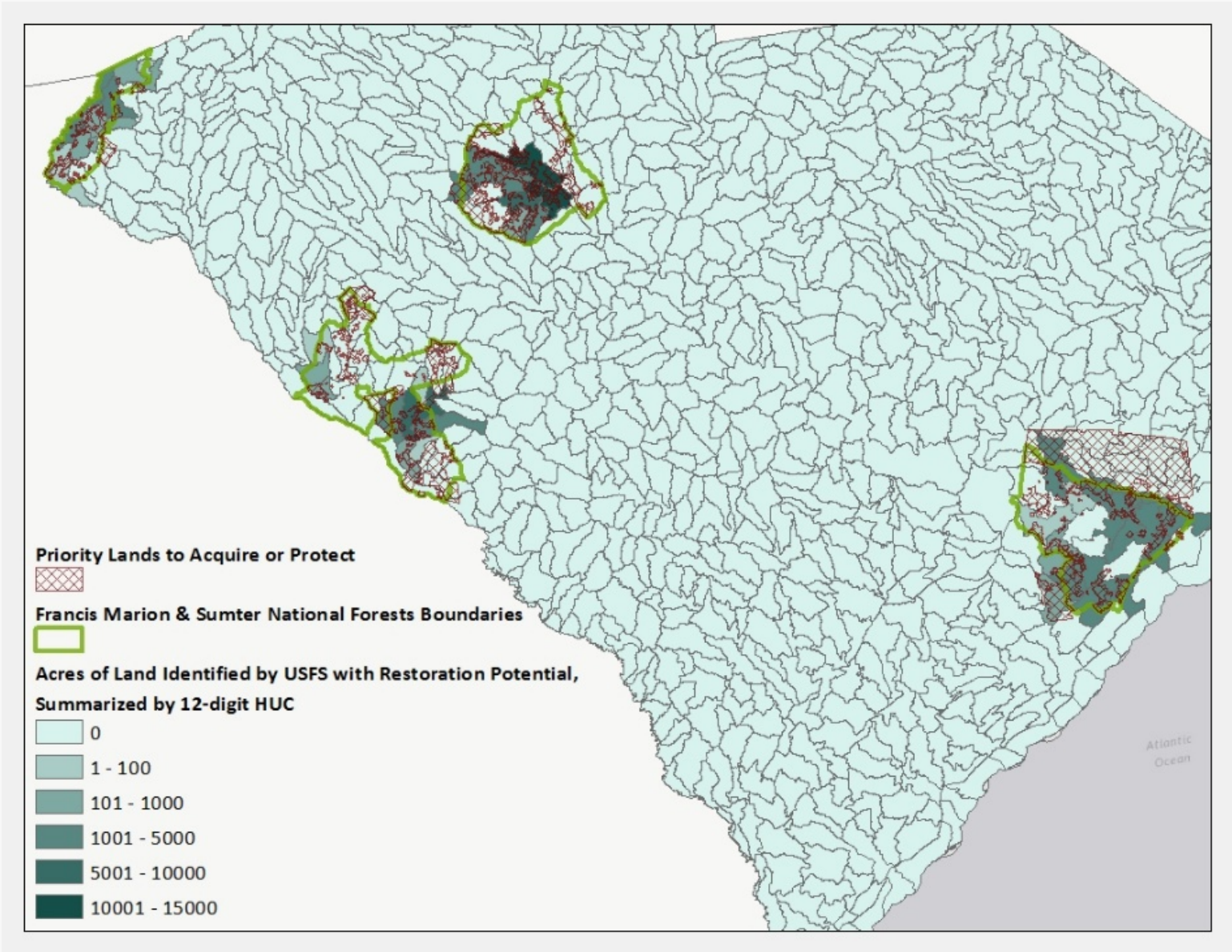


This map displays properties (red hatch) prioritized in the LOAS for acquisition and protection and watersheds at the 8- and 12-digit HUC level (in blue) in South Carolina. HUC-12s serve as the primary unit of analysis in this use case unless otherwise noted.

WETLAND RESTORATION
POTENTIAL

Acres identified in the
LOAS as having high
wetland restoration
potential

Data source: USFS



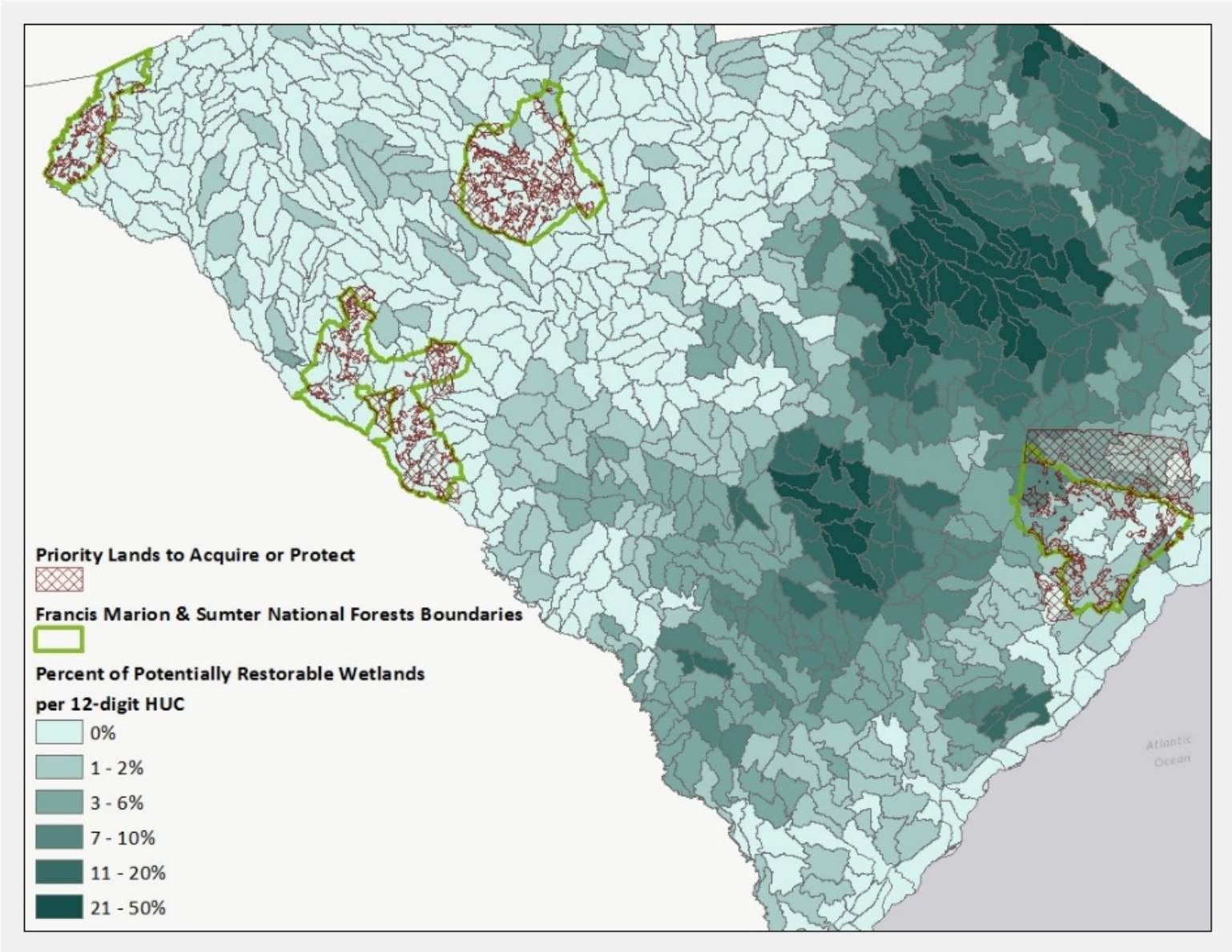
ACRES IDENTIFIED IN THE LOAS AS HAVING WETLANDS
RESTORATION POTENTIAL

ENVIROATLAS USE CASE

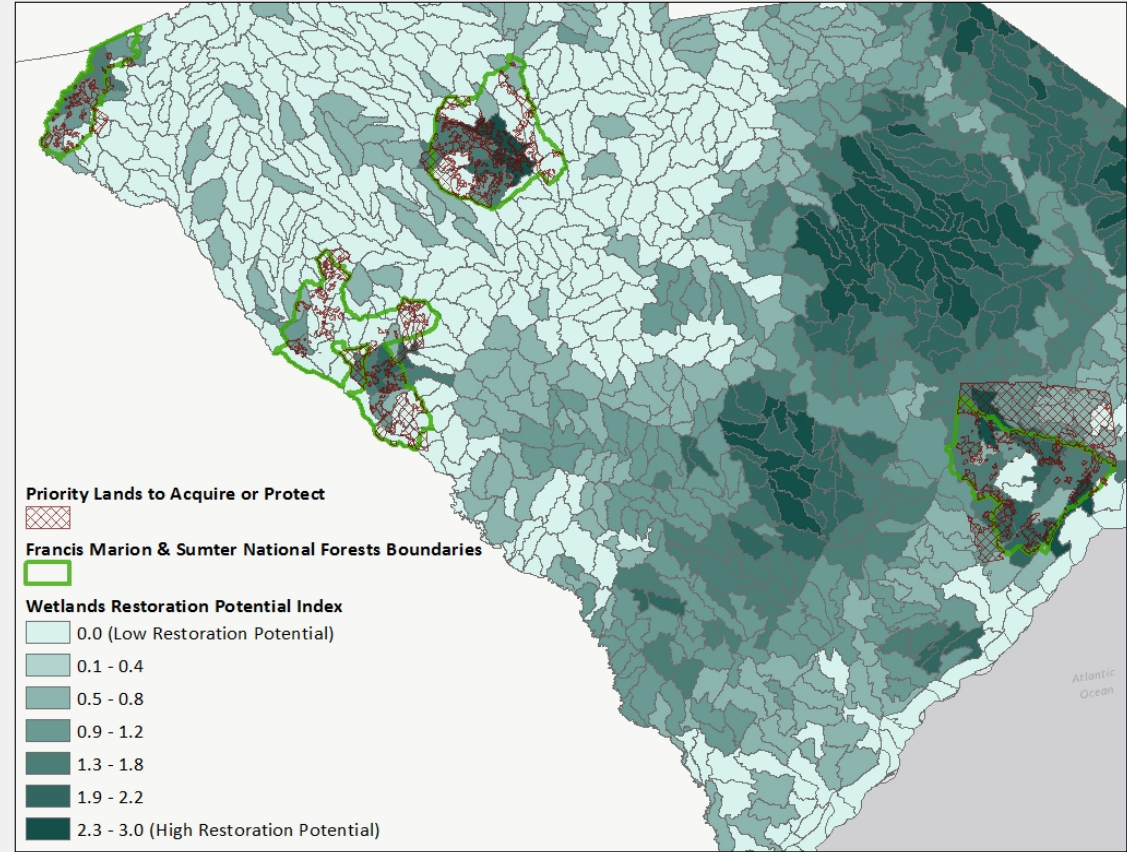
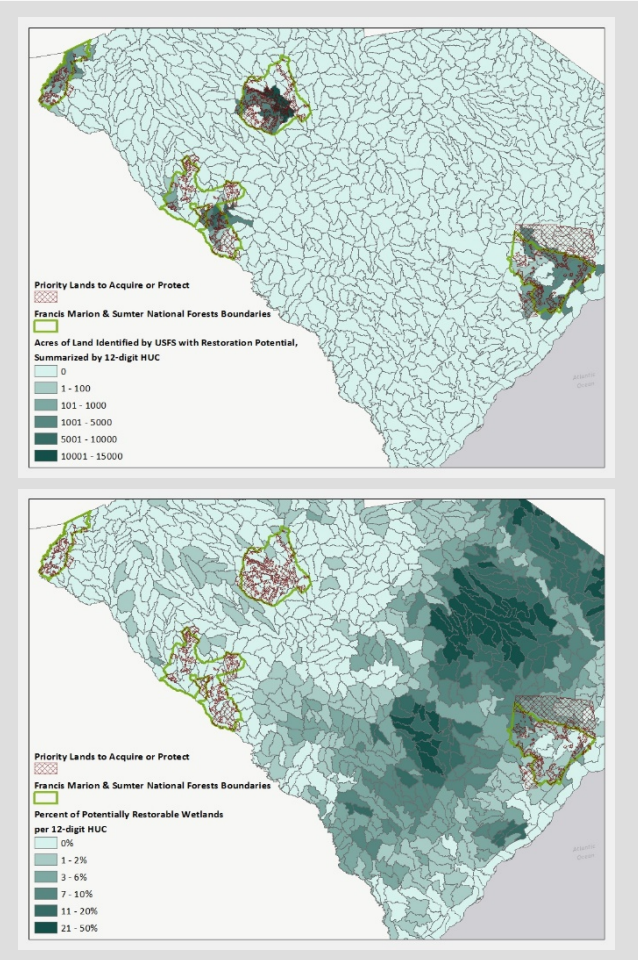
WETLAND RESTORATION
POTENTIAL

Percent potentially
restorable wetlands

Data source: EnviroAtlas



INDEX: WETLAND
RESTORATION POTENTIAL

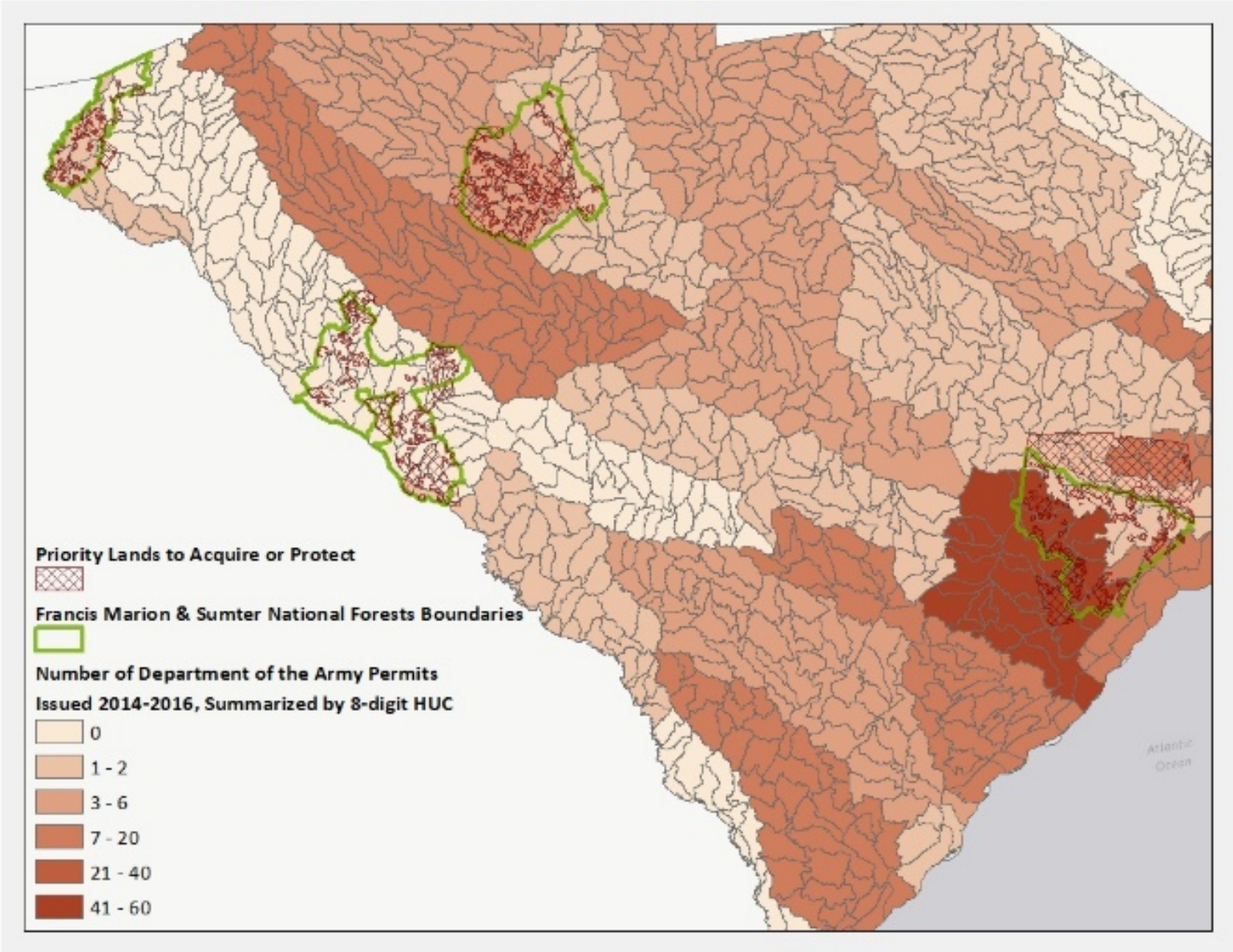


ENVIROATLAS USE CASE

POTENTIAL DEMAND FOR
COMPENSATORY MITIGATION

Historical Volume of
Department of the Army
Permits Issued, 2014-2016

Data Source: ORM database

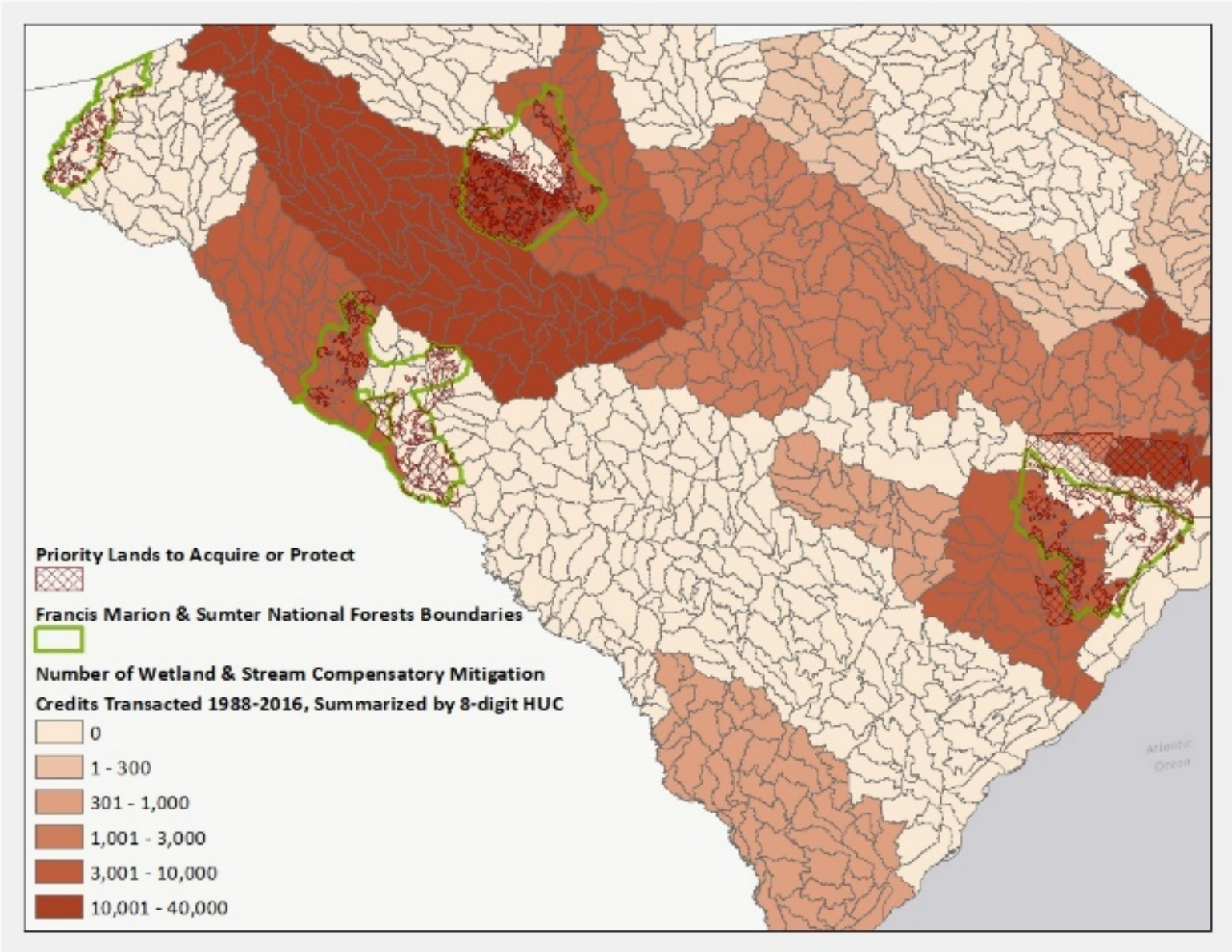


ENVIROATLAS USE CASE

POTENTIAL DEMAND FOR
COMPENSATORY MITIGATION

Historical Volume of
Compensatory Mitigation
Credits Transacted, 1988-2016

Data Source: EnviroAtlas and
RIBITS

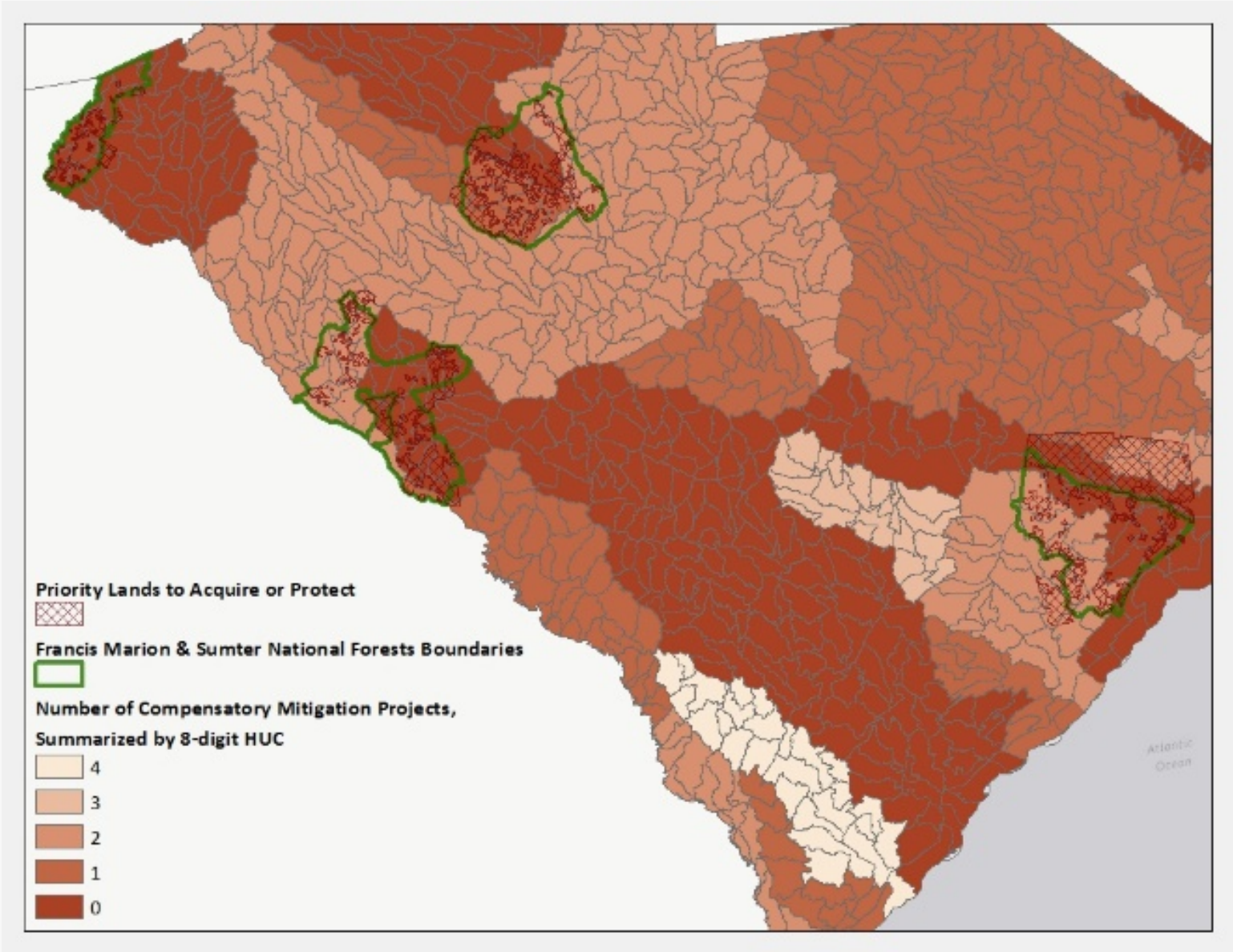


ENVIROATLAS USE CASE

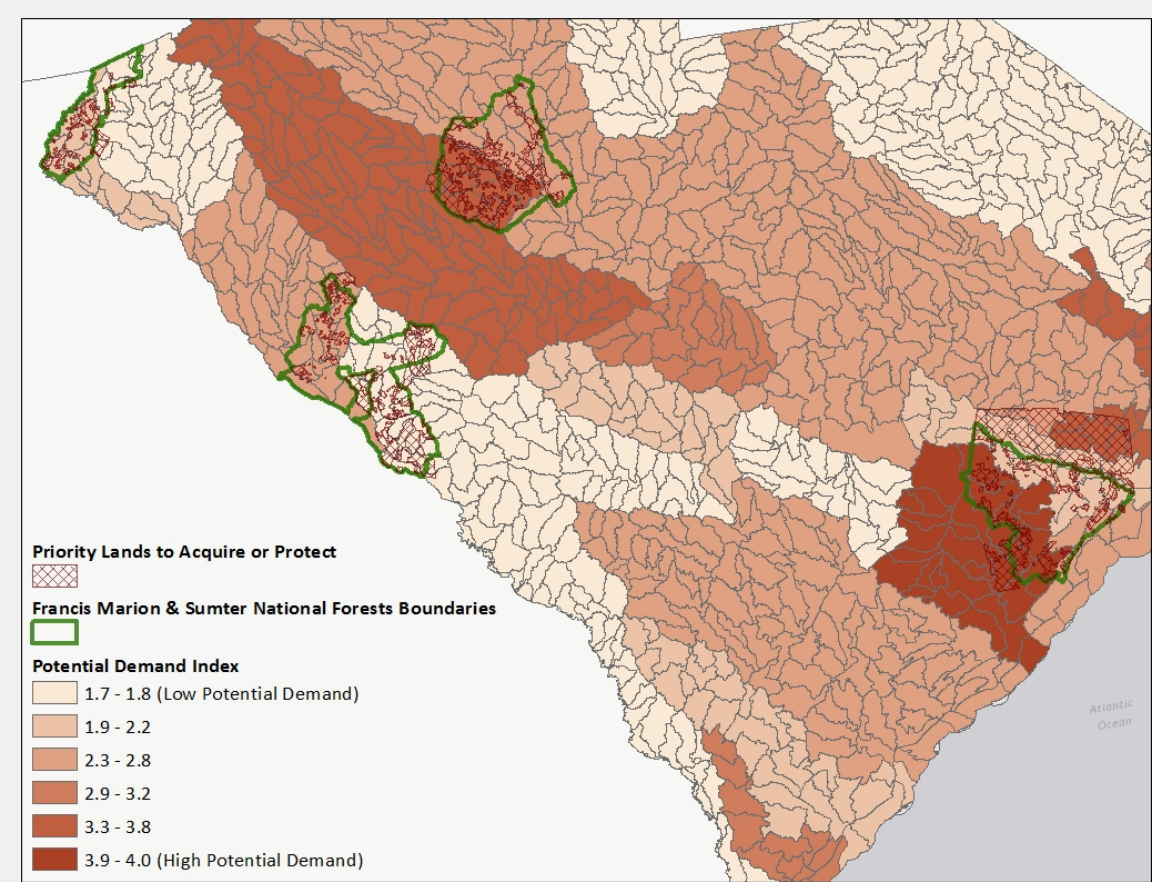
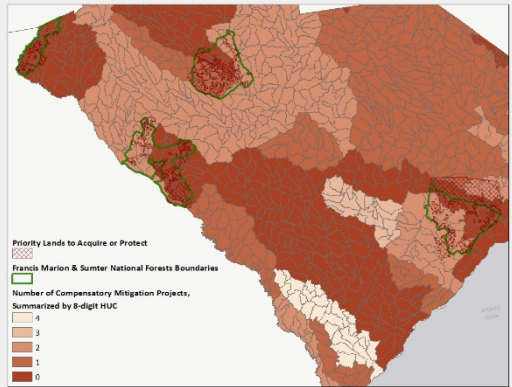
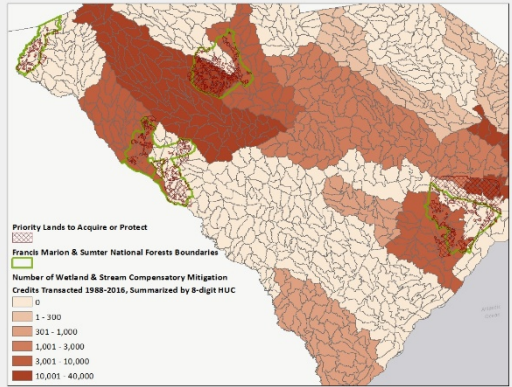
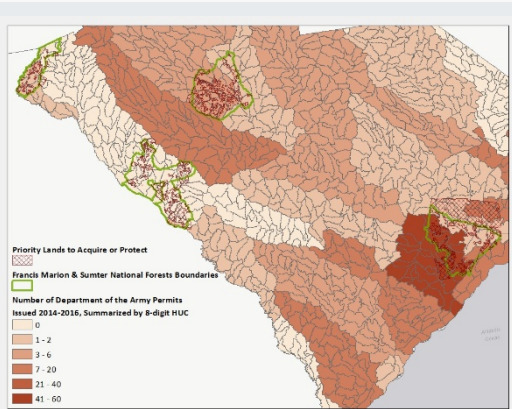
POTENTIAL DEMAND FOR
COMPENSATORY MITIGATION

Count of Compensatory
Mitigation Projects in the
Watershed (HUC-12)

Data Source: EnviroAtlas

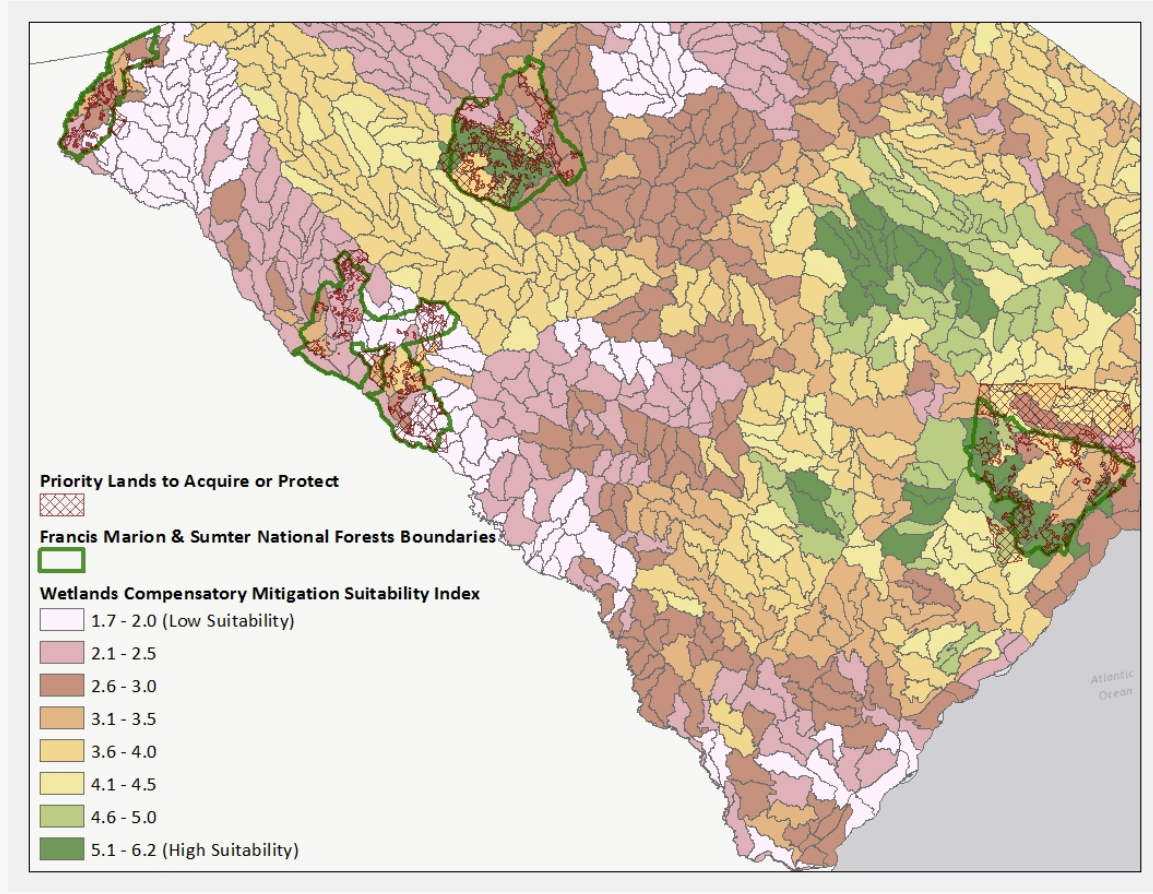
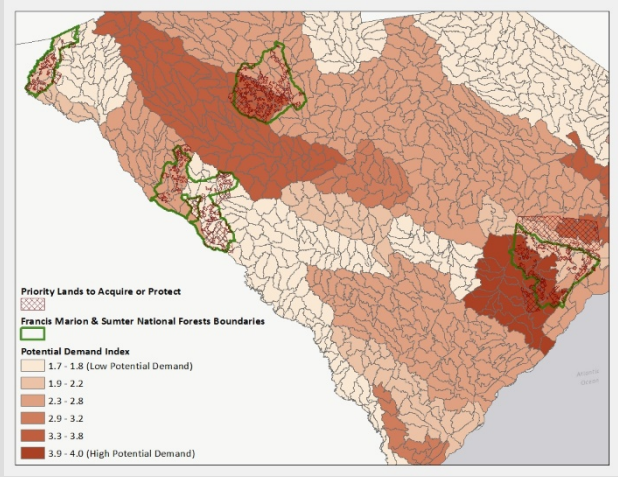
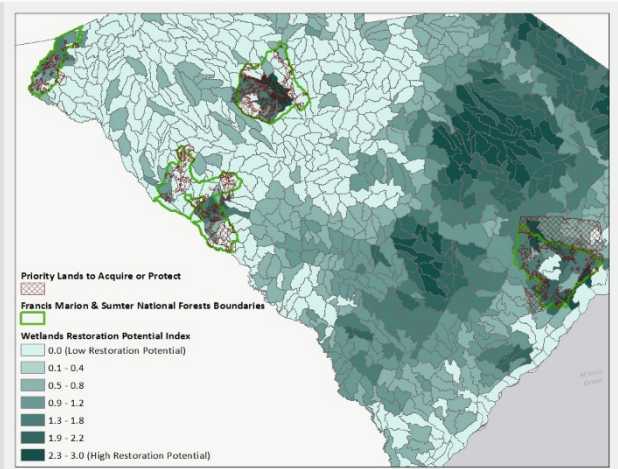


INDEX: POTENTIAL
DEMAND FOR
COMPENSATORY
MITIGATION



ENVIROATLAS USE CASE

INDEX: COMPABILITY WITH
COMPENSATORY MITIGATION
OF SITES PRIORITIZED FOR
ACQUISITION AND
PROTECTION IN THE LOAS



THANKS!

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