

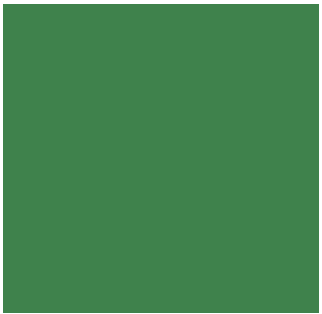
# Lessons Learned From Developing Landscape Restoration and Climate Change Mitigation Projects

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TerraCarbon LLC

Blue Carbon: A Management Tool for Conservation  
and Restoration of Coastal Wetlands



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## Objectives

- Case Study 1: Bottomland Hardwood Forest Restoration
- Case Study 2: Peatland Restoration
- Assessing Blue Carbon Projects



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## TerraCarbon background

- Established in 2006.
- Advisory firm specialized in the land use and forestry sector of the carbon market.
- Provide technical, transaction, and strategic advisory services.
- Help clients implement market-oriented programs and projects to restore and protect the world's forests and natural ecosystems.
- 23 registered projects under VCS/ACR/CCB/CDM.
- Certified B Corporation.



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# Case Study 1: Bottomland Hardwood Forest Restoration

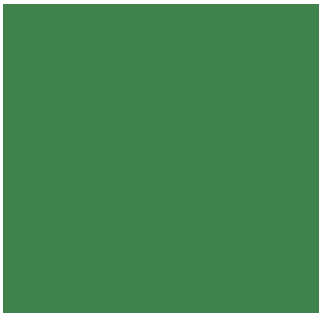
- WHAT?
  - Planting trees in former agricultural fields in the Lower Mississippi Valley
  - Reforestation of 77,000 acres since 1999
  - Over 34,000 acres registered in 4 VCS projects and 1 ACR project



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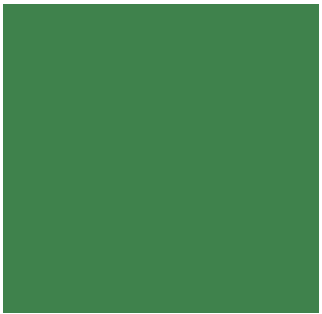
# Case Study 1: Bottomland Hardwood Forest Restoration

- WHY?
  - Carbon sequestration and climate change mitigation
  - Restore habitat and reconnect forested landscapes
  - Protect soil resources, improve water quality and provide for natural flood storage



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# Case Study 1: Bottomland Hardwood Forest Restoration



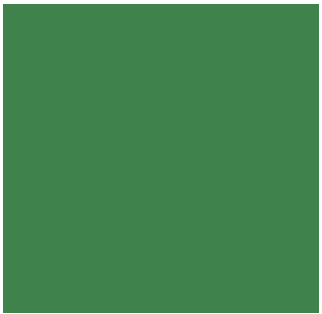
- WHERE?

- Lower Mississippi Valley
- Arkansas, Kentucky, Louisiana, Mississippi, and Tennessee
- USFWS lands
- State Lands

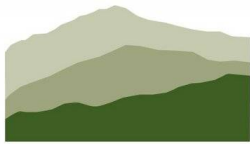
- WHO?

- Public-private partnership between project developer and USFWS NWR and state Department of Natural Resources
- NGO restores land with funding from private entity
- USFWS allows private entity to claim credits





THE  
**TRUST**  
 for  
**PUBLIC**  
**LAND**



**USDA**  
**Forest Service**

*Caring for the Land and  
 Serving People*



*The Nature*  
**Conservancy.** 

SAVING THE LAST GREAT PLACES ON EARTH



**Tennessee Dept  
 Environment &  
 Conservation**



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Image U.S. Geological Survey

Go

1990

35°13'11.99" N 91°34'26.60" W elev 204 ft

9/2009  
2010

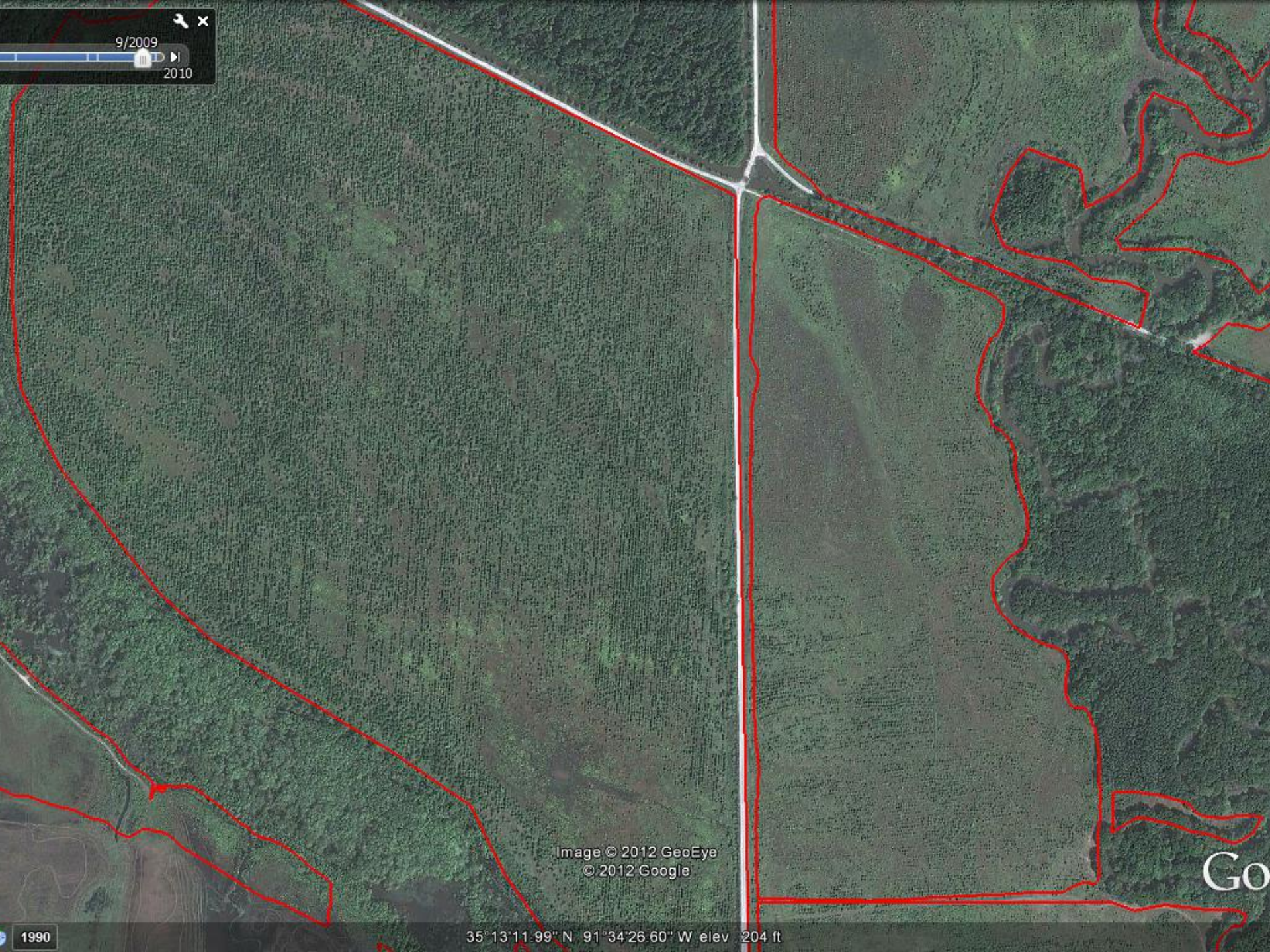
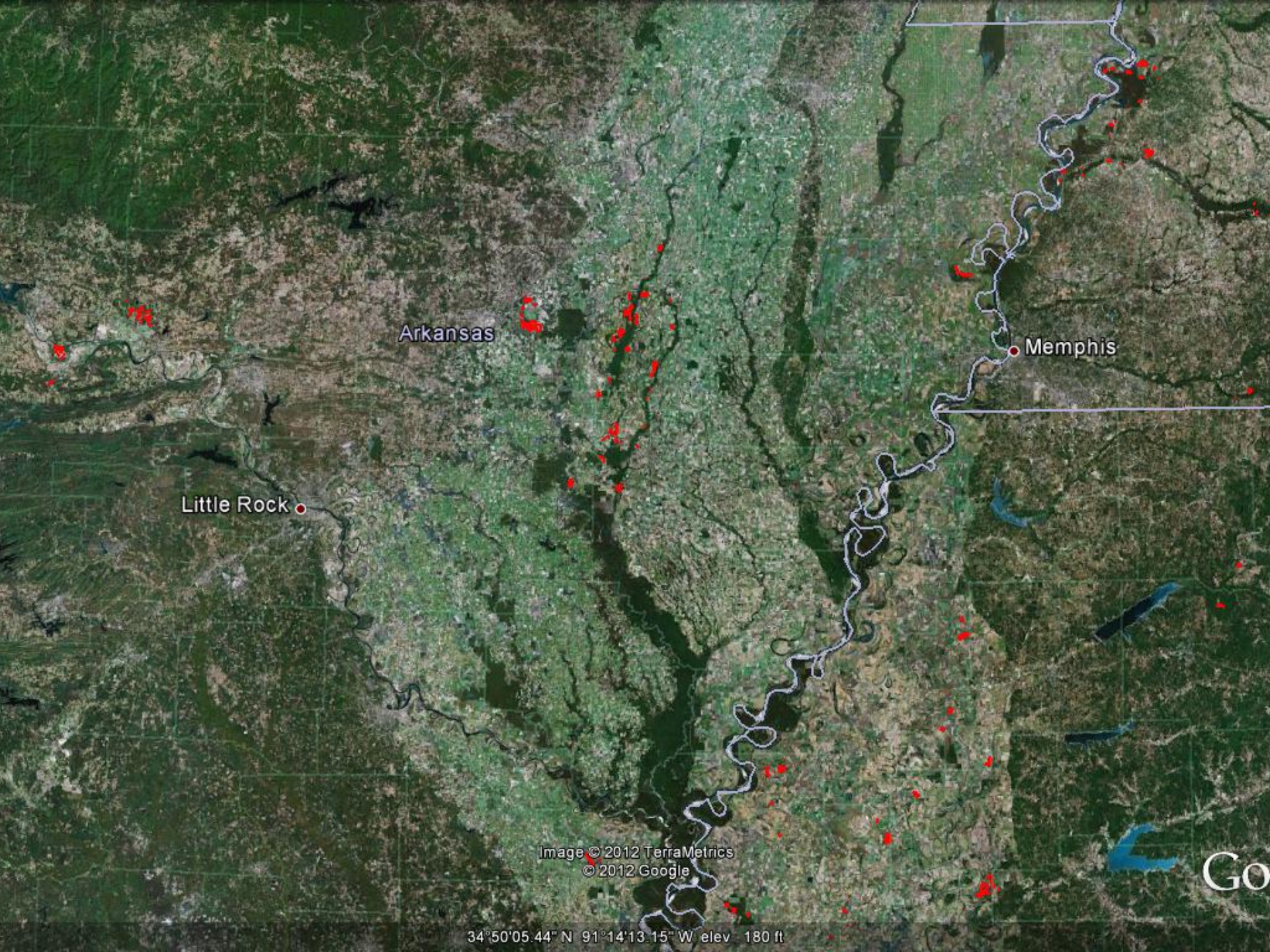


Image © 2012 GeoEye  
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Go

1990

35° 13' 11.99" N 91° 34' 26.60" W elev 204 ft



Arkansas

Memphis

Little Rock

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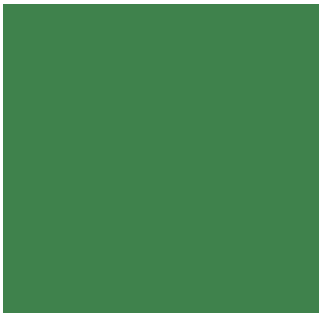
34°50'05.44" N 91°14'13.15" W elev 180 ft

## Case Study 2: Peatland Restoration



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## Case Study 2: Peatland Restoration

- WHAT?
  - Restoration of peatlands ditched and drained for conversion to agriculture and forestry.
  - Restoration measures include construction of three water control structures and a 3-mile berm to allow water levels to be raised.
  - Site will be restored to allow for seasonally saturated conditions.







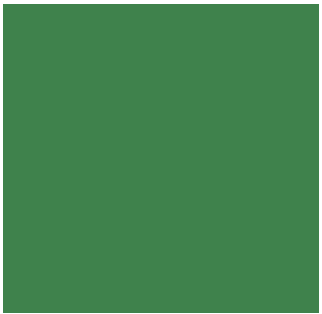




## Case Study 2: Peatland Restoration

- WHERE?
  - Pocosin Lakes National Wildlife Refuge
- WHO?
  - US Fish and Wildlife Service
  - The Nature Conservancy
  - USGS
  - Local universities
  - TerraCarbon





## Case Study 2: Peatland Restoration

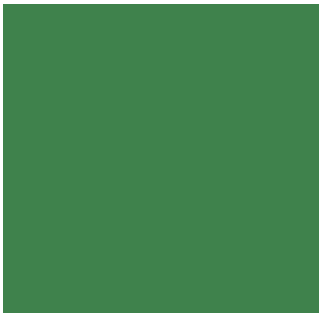
- WHY?
  - Carbon mitigation benefits
  - Improved water quality by capturing nutrient and sediment loads in surrounding ground water and overland flow
  - Improved habitat for biodiversity such as the Atlantic white cedar.

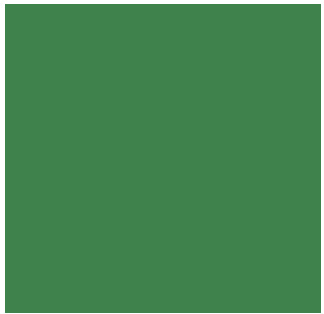


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## Case Study 2: Peatland Restoration at Pocosin Lakes National Wildlife Refuge

- Scoping
  - Identify project types
  - Investigate spatial scale of opportunity
  - Estimate range of expected ER
- Feasibility
  - Provide ex-ante estimates for specific sites
  - Estimate costs of developing carbon project
- Methodology
- Project design
- Project implementation





## Lessons Learned

- Compliance markets can drive demand to scale
- Demonstration projects are important step to compliance
- Partnerships with government and academic institutions add credibility and broaden support
- Monitoring approaches may need to involve direct measurement in absence of applicable default values
- Other sources of funding needed



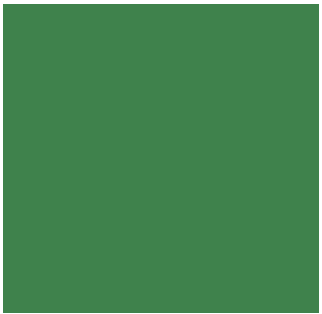
# Assessing Blue Carbon Projects

- Landscape Level Scoping
  - Collect emission reduction estimates that are relevant to the activity and region
  - Identify priority restoration areas and partners
  - Identify restoration candidate sites



# Assessing Blue Carbon Projects

- Site Level Feasibility
  - Technical
    - Applicability of methodology
    - Site specific estimates of emission reductions
  - Financial
    - Cost of restoration
    - Cost of project development
    - Monitoring cost
    - Potential income from emission reductions
  - Legal
    - Credit ownership
    - Land management issues





**Thank you!**

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