

Integrating Stream Science Efforts across the North Atlantic and Appalachian LCC Regions

U.S. Fish and Wildlife Service,
Northeast Regional Office, Hadley, MA
March 14, 2013

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Meeting Purpose

- 1) promote common understanding of aquatic science projects
- 2) establish opportunities for collaboration leading to ***improved information and tools for aquatic resource managers***
- 3) identify high priority science needs and technical challenges



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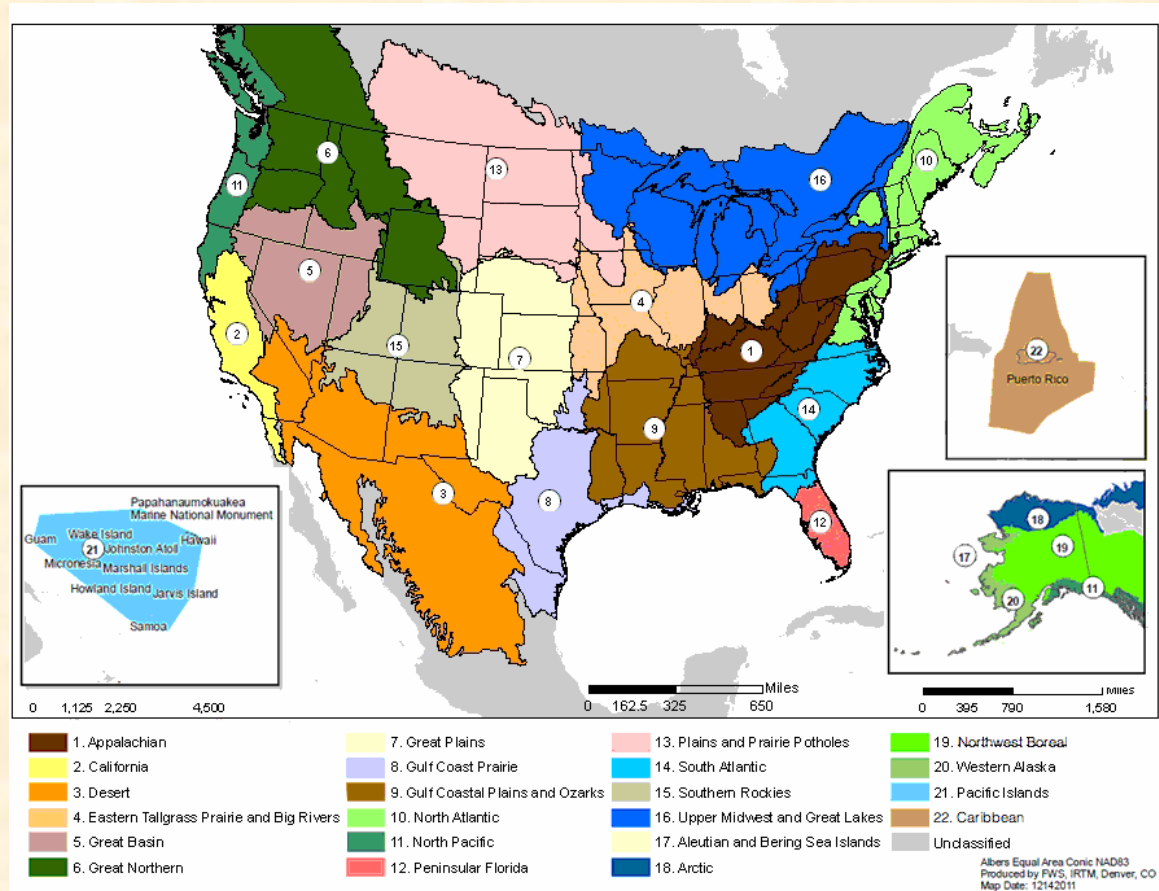


Landscape Conservation Cooperatives

LCCs

Fundamental Objective

To define, design, and help partners deliver landscapes that can sustain natural and cultural resources at desired levels nationwide.

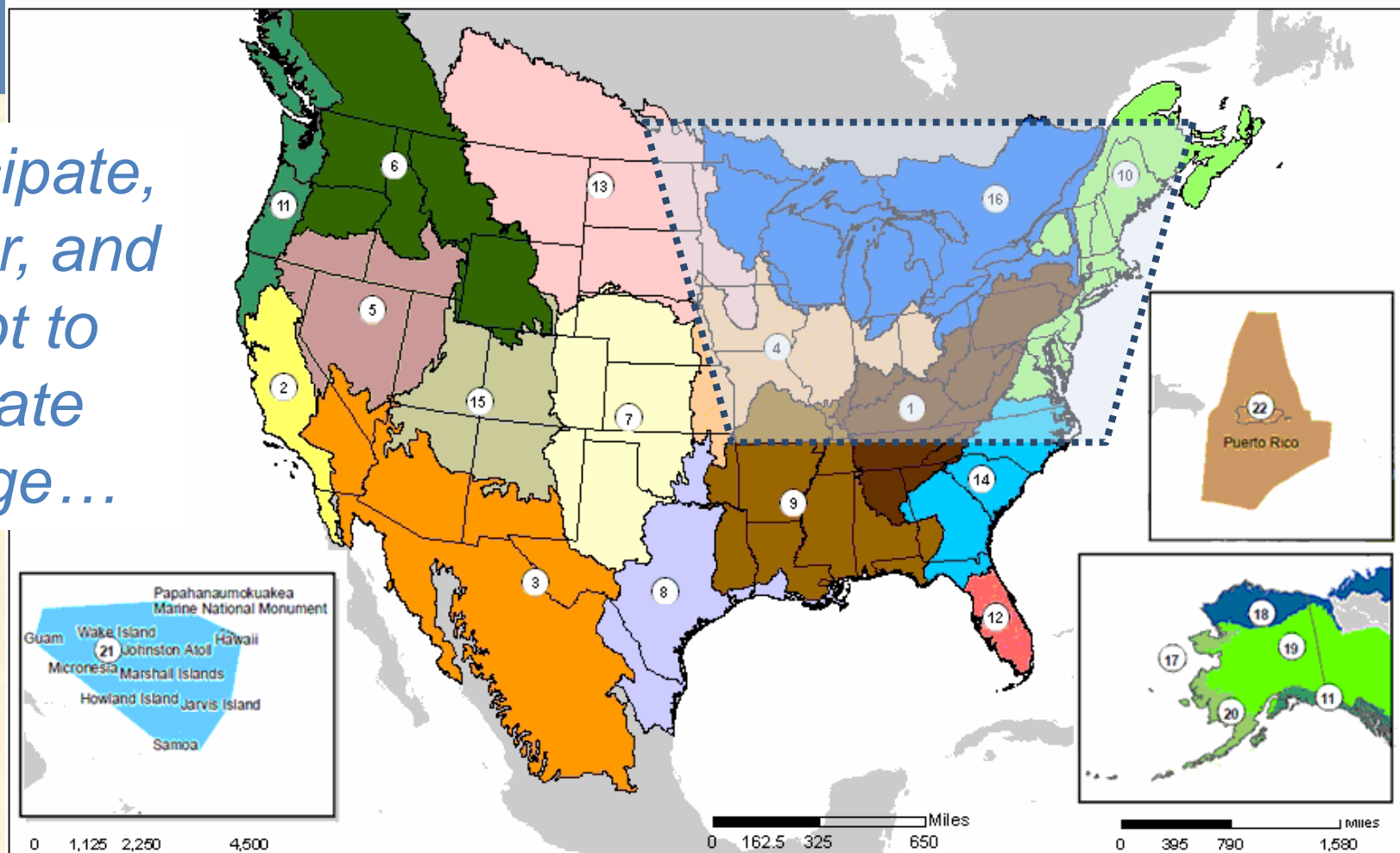


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LCCs + NE Climate Science Center

*...anticipate,
monitor, and
adapt to
climate
change...*

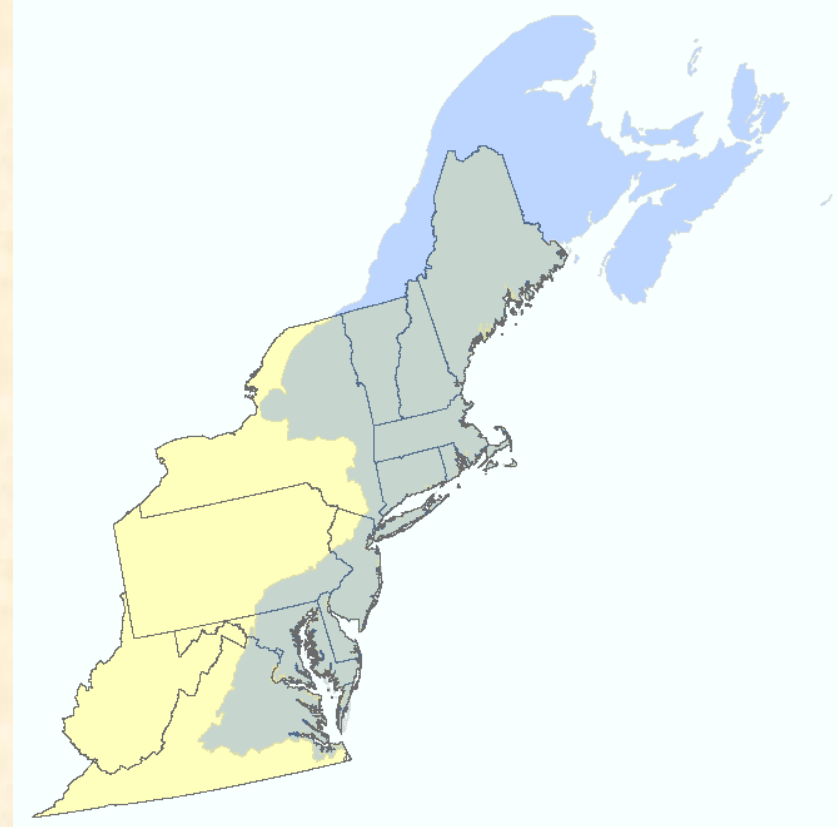


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|---------------------------------------------|-----------------------------------|-------------------------------------|----------------------|
| 1. Appalachian | 7. Great Plains | 13. Plains and Prairie Potholes | 19. Northwest Boreal |
| 2. California | 8. Gulf Coast Prairie | 14. South Atlantic | 20. Western Alaska |
| 3. Desert | 9. Gulf Coastal Plains and Ozarks | 15. Southern Rockies | 21. Pacific Islands |
| 4. Eastern Tallgrass Prairie and Big Rivers | 10. North Atlantic | 16. Upper Midwest and Great Lakes | 22. Caribbean |
| 5. Great Basin | 11. North Pacific | 17. Aleutian and Bering Sea Islands | Unclassified |
| 6. Great Northern | 12. Peninsular Florida | 18. Arctic | |



North Atlantic LCC

LCC Partners



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North Atlantic LCC: Current Science Projects

- Coastal – 3
- Terrestrial – 3
- Aquatic – 2
 - Forecasting changes in aquatic systems / brook trout
 - Models and decision support tools for aquatic habitats
- Multiple ecosystems – 3
 - Designing sustainable landscapes



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Agenda and Logistics

- Morning – 8 presentations
- Lunch
- Afternoon – Facilitated discussion
 - Data sources and data sharing
 - Opportunities for collaboration and model integration
 - Science needs and technical challenges
 - Target audiences and users



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Products of regional-scale stream model projects – potential model inputs and outputs (Handout 2)

Project P.I.'s	Climate	Geomorphology, physical stream characteristics	Watershed land use, riparian condition	Pollutant discharges	Stream temperature	Stream Flow	Flow management	Barriers to movement	Ecological responses	Management tools
<u>Polebitski</u> , U.WI Platteville					Data gathering and model evaluation					
Stewart, USGS WI					Regional stream temp. data framework					
Letcher, USGS Conte MA						Flow prediction model			Brook trout survival, persistence, etc.	Decision support system for management alternatives
McGarigal, UMass Amherst	Downscaled annual precip. and air temp.	Stream gradient, volume, calcium, salinity	Land cover, other settings	Salt, sediment, and nutrient metrics		Hydrological flow alteration metric		Aquatic connectedness metric	Aquatic ecological integrity	Tools to prioritize protection, management, restoration
<u>Boettner</u> , Downstream Strategies									Species and community models	Multi-criteria decision support tool
Fisher, USGS NY Co-op Unit						Apply a hydrologic model	Estimate flow alteration		Model flow and biological responses	Forecast hydrology changes and bio. responses
<u>Olivero Sheldon</u> , The Nature Conservancy		Stream pH	Regional land cover		Stream temp. model			Assembled 13 state dam data	Stream classification based on aquatic biota	Aquatic connectivity tool
Other	PRISM; various climate projections	NHD-Plus, other sources	Various					State culvert data	Brook trout model (<u>Hudy</u>); ELOHA projects	

Conceptual model – aquatic relationships at regional scales (Handout 3)

