VULNERABILITIES TO CLIMATE CHANGE OF NORTHEASTERN FISH AND WILDLIFE HABITATS

Hector Galbraith, Manomet Center for Conservation Sciences

Curtis Fisher, George Gay, and Chris Hilke, National Wildlife Federation

PROJECT OBJECTIVES

1. Quantify the vulnerabilities to climate change of fish and wildlife habitats in the region and how these vary geographically
2. Project how habitats and species will change their status and distributions under climate change.
3. Identify potential adaptation options to safeguard vulnerable habitats and species.
4. Identify monitoring strategies to track the impacts of climate change and the effectiveness of adaptation actions.
5. Help states to increase their institutional knowledge and capabilities to respond to climate change.

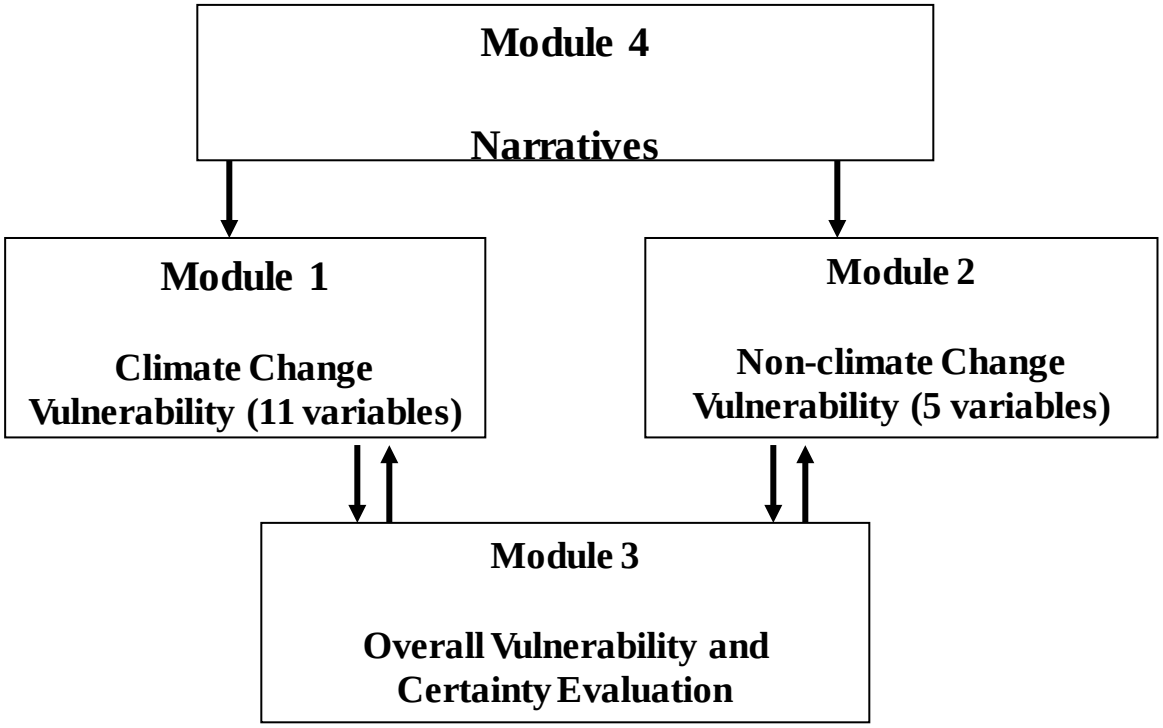
TASKS AND PROGRESS

1. Build habitat model to project vulnerabilities - Completed
2. Apply model to selected habitats across region - Ongoing
3. Map geographical variation in vulnerabilities and identify potential refugia - Future
4. Apply existing species model to evaluate vulnerabilities of keystone/foundational spp. - Future
5. Compile catalogue of adaptation options - Future
6. Develop monitoring tools – Future
7. Help build climate change response capacity within states - Ongoing

NEAFWA HABITAT VULNERABILITY MODEL

- A predictive model of habitat vulnerability has been built
- This model will be consistently applied to selected habitats across the Northeast
- Results will provide basis for mapping geographical variation in vulnerability

NEAFWA HABITAT VULNERABILITY MODEL - STRUCTURE



THREE HABITAT WORKGROUPS

	Forests	**Wetlands**	**Aquatic**
ME	Andrew Cutko	Philip DeMaynadier	Steve Walker
NH			Matt Carpenter
VT	John Austen		
MA	John Scanlon		Caleb Slater
NY		Zoe Smith	
CT	Min Huang		Neal Hagstrom
NJ	Kris Schantz	Kathleen Walz	
PA	Mary Ann Furedi Greg Podniesinski	Greg Podniesinski Mary Ann Furedi	
VA		David Norris	
WV	Elizabeth Byers	Elizabeth Byers	Kerry Bledsoe
MD	Dana Limpert	Dana Limpert	Dana Limpert

HABITATS SELECTED FOR ANALYSES

Forests and Woodlands

Laurentian-Acadian Northern Hardwood Forest
Laurentian-Acadian Pine-Oak Forest
Laurentian-Acadian Pine-Hemlock-Hardwood Forest
South-Central Interior Mesophytic Forest
Central Appalachian Pine-Oak Rocky Woodland
Northeastern Interior Dry-Mesic Oak Forest
Central Appalachian Dry Oak-Pine Forest
Northeastern Interior Pine Barrens
Laurentian-Acadian Floodplain Forest
Montane Spruce-Fir Forest
Appalachian (Hemlock)-Northern Hardwood Forest
High Allegheny Wetland

Tundra

Alpine Tundra

Aquatic

Cold water fisheries
Central Appalachian Stream/ Riparian
Floodplain Central Appalachian River

Wetlands

North-central Appalachian Acidic Swamp
North-Central Interior and Appalachian Acidic-Peatland
Laurentian-Acadian Wet Meadow-Shrub Swamp
Northern Atlantic Coastal Plain Fresh and Oligohaline Tidal Marsh
Laurentian-Acadian Freshwater Marsh
Low Elevation Boreal Bogs

NEXT STEPS

- Apply vulnerability model to selected habitats
- Map geographical variation in habitat vulnerabilities
- Run NatureServe model on selected species
- Map likely habitat refugia
- Identify suitable indicator species for monitoring
- Begin process of identifying adaptation options