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Who we are

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Federal Director, USGS

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Michelle Staudinger
Science Coordinator, USGS

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Communications Manager, UMass

Toni Lyn Morelli
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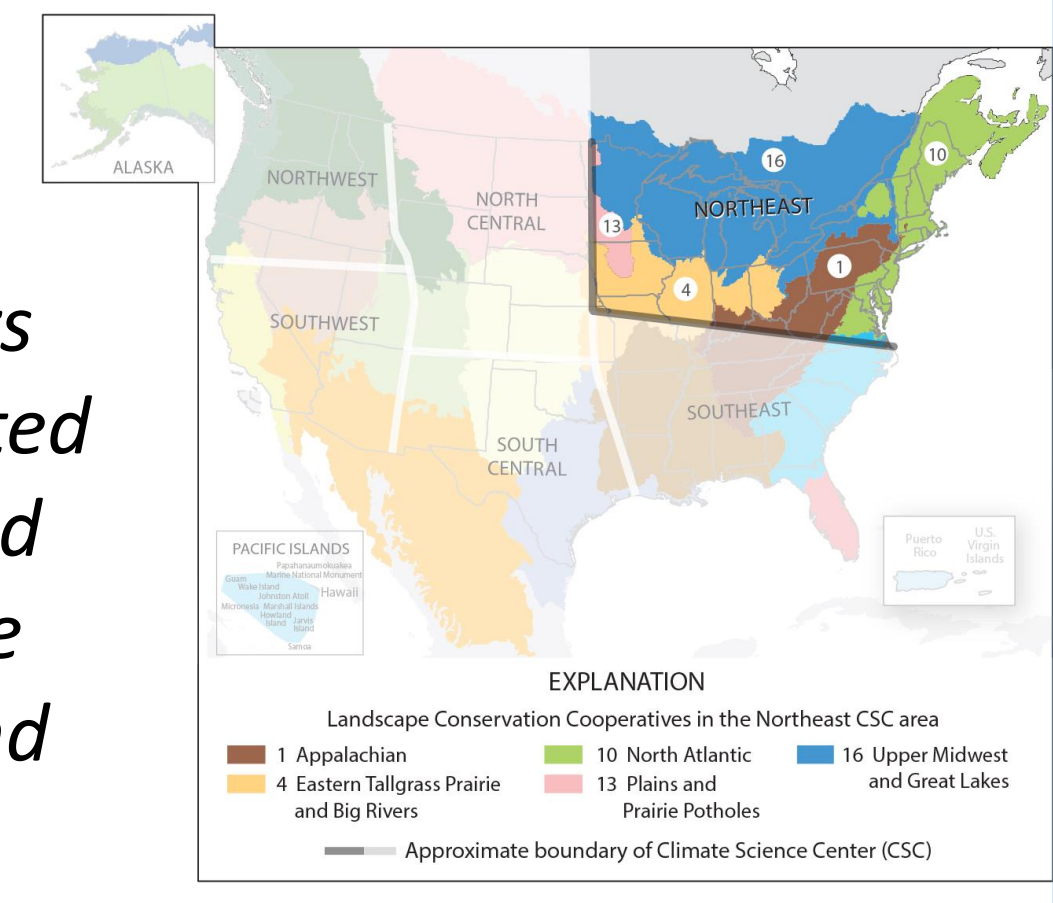
Alex Bryan
Climate Postdoc, USGS



+9 PIs and 28 Fellows

What we do

CSCs provide scientific information, tools, and techniques that managers and other parties interested in land, water, wildlife and cultural resources can use to anticipate, monitor, and adapt to climate change.

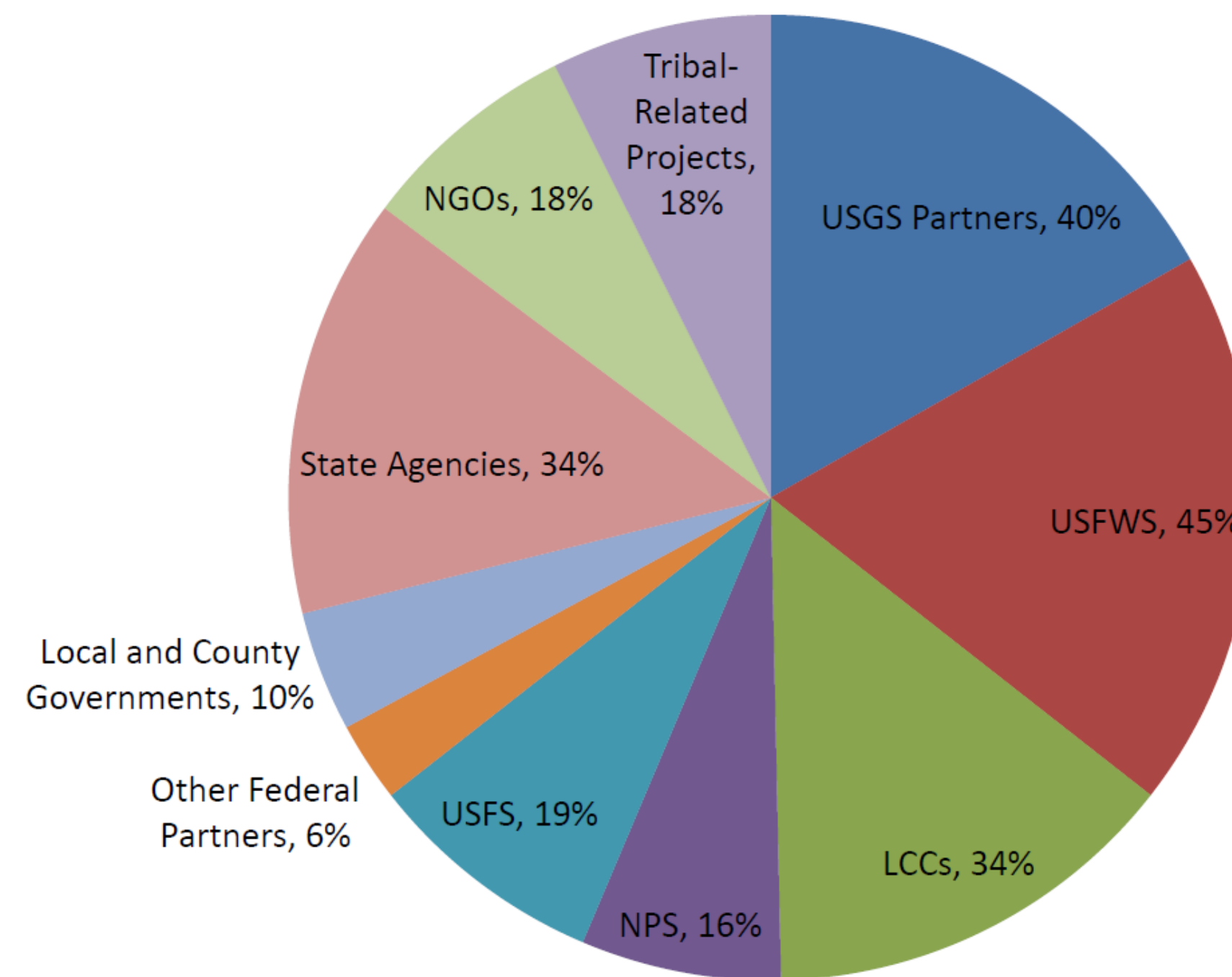


Research

Science Themes

- Climate change projections and assessments
- Climate impacts on land-use and land-cover
- Climate impacts on freshwater resources and ecosystems
- Climate impacts on Atlantic and Great Lakes coastal and nearshore environments
- Ecosystem vulnerability and species response to climate variability and change
- Impacts of climate variability and change on cultural resources
- Decision frameworks for evaluating risk and managing natural resources under climate change

Partners & Stakeholders



Education & Training

NE CSC Graduate and Post-doc Fellows Program:

- Peer-to-peer learning exchange
- Training opportunities in communications, stakeholder engagement & tool development
- Building interdisciplinary networking opportunities

>\$2M on training
26 job placements!



NE CSC Fellows Annual Retreat, 2015, Suring, WI

Wildlife conservation



Identifying climate change refugia

Experimental research on ground squirrels points toward suitable habitats that buffer the impacts of climate change, and should be targeted as priority conservation land.

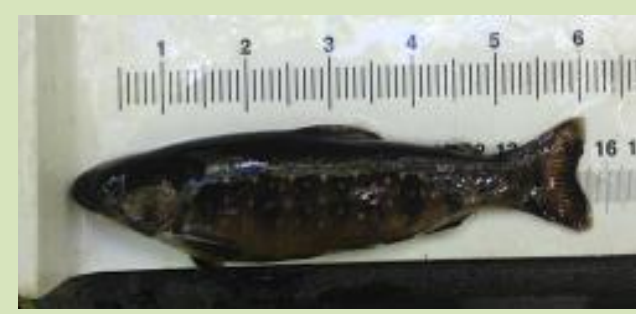
Snow loss on boreal carnivores

Camera and snow track surveys help us understand how snowpack reductions may alter predator-prey interactions in boreal montane forests, such as lynx and hare.



Understanding and protecting brook trout

Coldwater fish are among the most threatened by climate change as streams warm. NE CSC researchers are examining distributions of Brook Trout and their climatic drivers to better predict climate change effects.



Assessing climate change impacts on moose

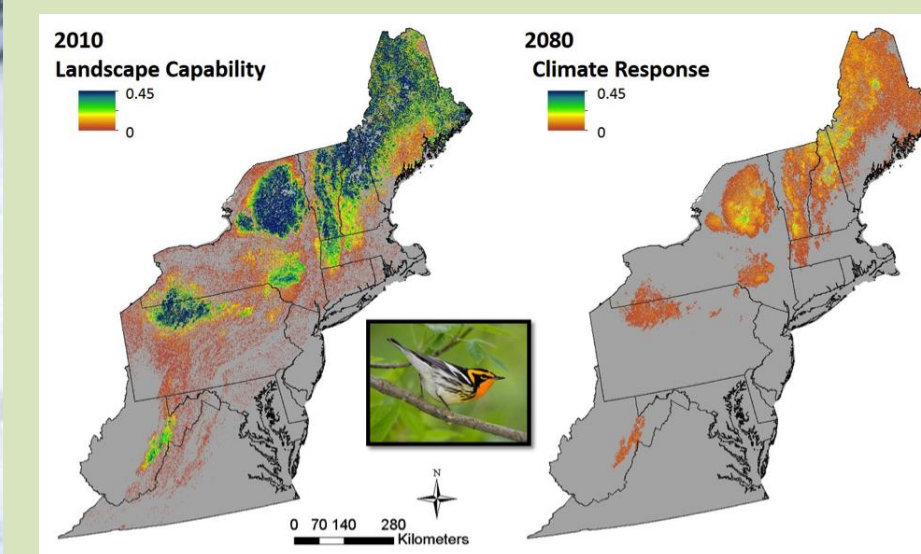
NE CSC researchers and partners at the Wildlife Conservation Society are assessing climate change vulnerabilities and appropriate management actions for state wildlife conservationists.



Habitat management

Emerald ash borer on black ash

NE CSC researchers have developed recommendations for potential replacement species to favor in light of projected climate change and invasive species impacts.

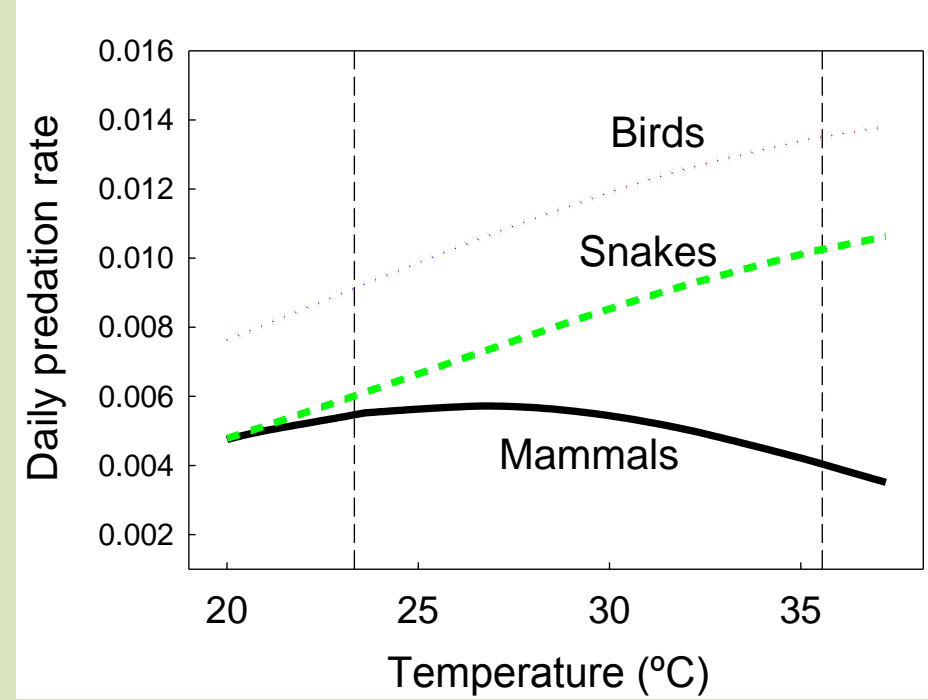


Designing Sustainable Landscapes

Integrating climate and ecosystem models to assess current and future habitat suitability to guide habitat conservation.

Warming on forest composition

Climate and forest ecosystem models help map species-specific vegetation loss and growth under changing climate regimes, allowing the study of feedbacks on predator-prey interactions.



Climate impacts on estuaries and salt marshes

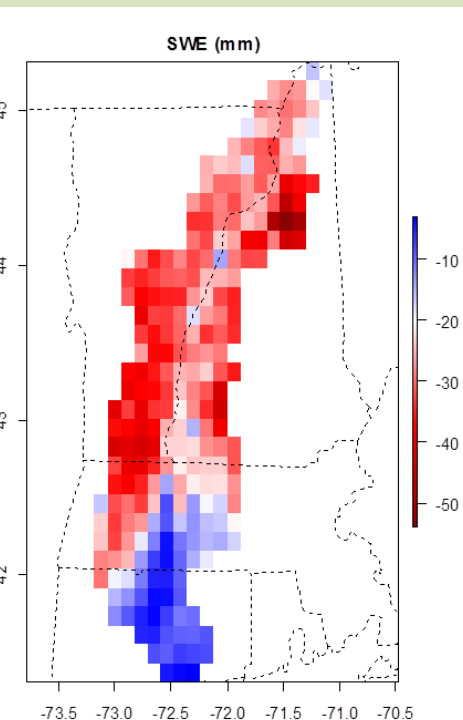
Storm intensification increases freshwater inputs into coastal salt marshes and estuaries, and NE CSC research examines impacts on food webs therein.



Water resources

Predicting changes in streamflows

Climate and hydrological models applied to the Connecticut River Basin are used to anticipate changes in groundwater and river flows as warming alters snow levels and rainfall intensity and frequency, and recommend new dam structures.



Guiding culvert sizing and design

Hydrological and climate modeling informs future stream and river flows for culvert size while others analyze constructions that enable ecosystem connectivity.



Evaluating sea-level rise impacts

Land cover, movement, and elevation maps and sea-level rise projections were used to develop land cover-specific forecasts of the probability of inundation or dynamic coastal change.



Intensifying storms on NYC water quality

Northeast RISA, led by NE CSC PI, focuses on water quality impacts of heavy storm events, such as Hurricane Sandy.



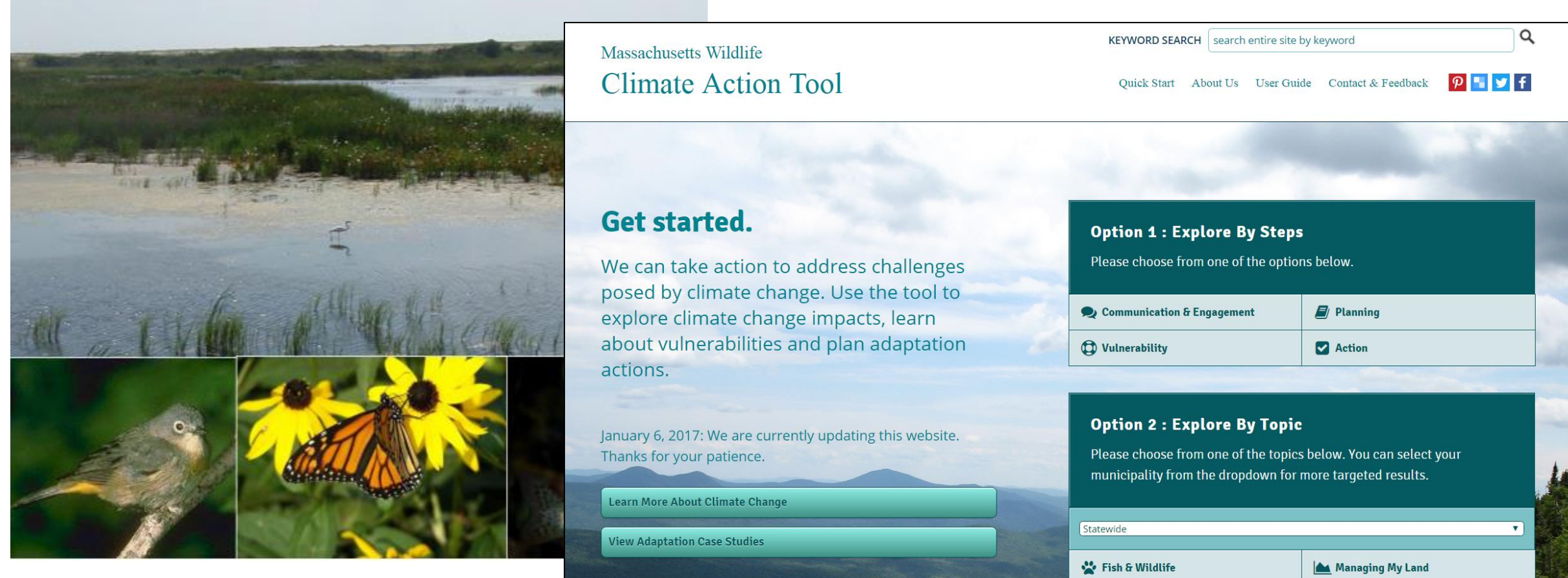
Decision Support

Integrating Climate Change into State Wildlife Action Plans

DOI Northeast Climate Science Center
Michelle D. Staudinger, Toni L. Morelli, and Alexander M. Bryan
May 2015

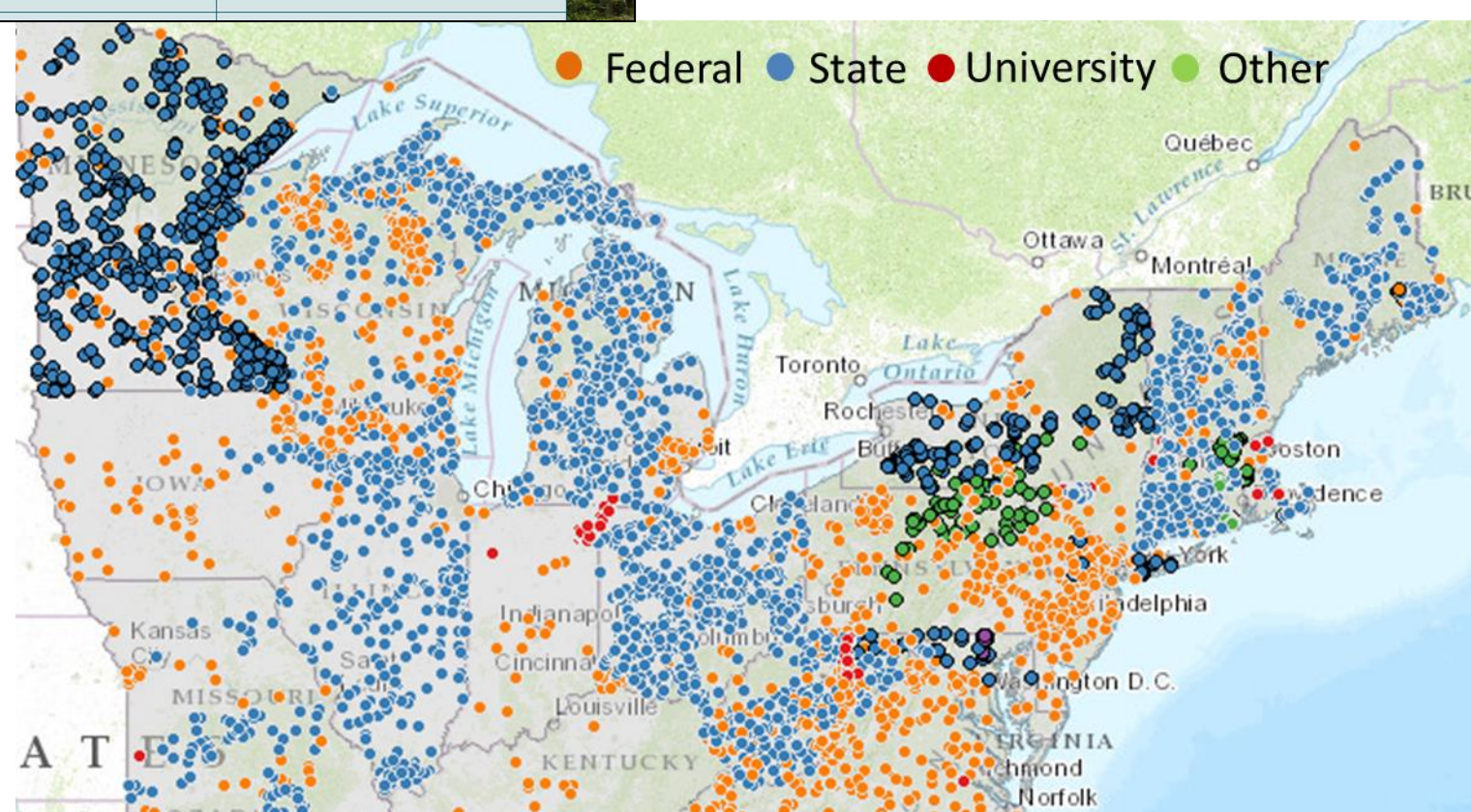
Informing climate change adaptation

Synthesis document provided to 22 states to aid incorporation of climate change into wildlife action plan (WAP) revisions.



Inspiring local action

Publicly-accessible interactive web resource to guide landowners and conservationists to appropriate actions for preserving wildlife.



Disseminating data for landscape-scale research

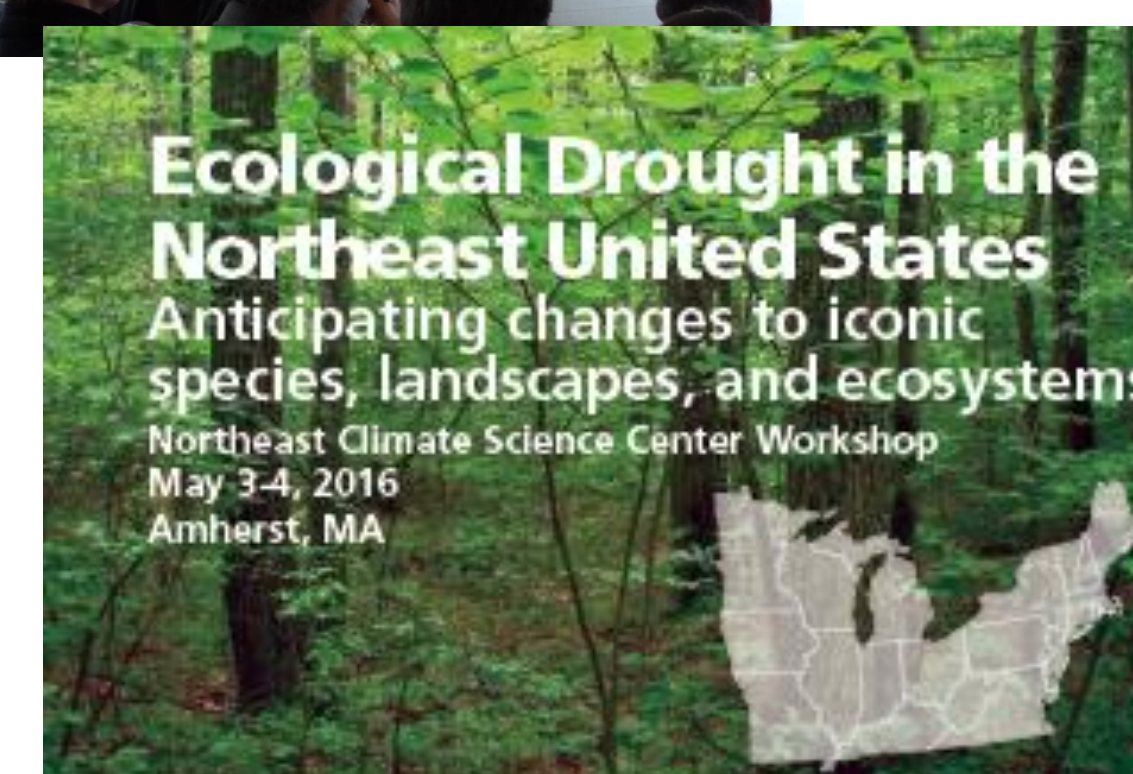
Data repository and user-friendly portal, mapping over 9,000 stream temperature monitoring locations to facilitate region-wide comparisons, analysis, and modeling.

Outreach & Communication



Northeast Regional Invasive Species & Climate Change (RISCC) Management

NE CSC scientists are partnering with managers to understand how invasive species will respond to climate change and develop a strategy to address those management needs



Ecodrought: Synthesis & research into the increasing likelihood for drought conditions and the consequences for wildlife and ecosystems

Building tribal adaptation capacity

NE CSC researchers work in close engagement with first nations to help their communities adapt their natural and cultural resources to climate change.

