NE CASC

Northeast Climate Adaptation Science Center

Researchers & Managers Working Together

NE CASC is a federal-university research partnership that provides the scientific information and tools needed to help fish, wildlife, and ecosystems adapt to the impacts of climate change.

What We Do

- Assess the climate vulnerability of fish, wildlife, and their habitats.
- Anticipate flooding, drought, and other extreme events.
- Connect researchers & resource managers from state, federal, and Tribal Nations.
- Incorporate the best existing climate science into conservation planning.
- Improve coastal adaptation and resilience.
- Train early career scientists in climate adaptation science, engagement, and communication.
- Work to create a more diverse, equitable, and inclusive community of reserachers and partners.

How Climate Is Changing in the Northeast

NE CASC research shows how our region is being impacted by climate change:

- Average monthly temperatures will continue to increase.
- Extreme heat events, summer drought-like conditions, intense storms, and flash flooding are becoming more frequent.
- Sea level is rising, making flooding from coastal storms more frequent and intense.
- Changes in precipitation are occurring in winter and spring, with more intense storms and less snow pack.
- Earlier spring is altering the timing of migration, breeding, and foraging for some fish and wildlife. Agriculture is being disrupted by shifting seasons and misalignment with pollinators.

Who We Are

NE CASC is part of a network of nine regional climate adaptation science centers managed by the U.S. Geological Survey National Climate Adaptation Science Center and is hosted by the University of Massachusetts Amherst. Our affiliated partners include Columbia University, Cornell University, University of Vermont, Woodwell Climate Research Center, United South and Eastern Tribes, Inc., and the USFS Northern Research Station.

USGS science for a changing world

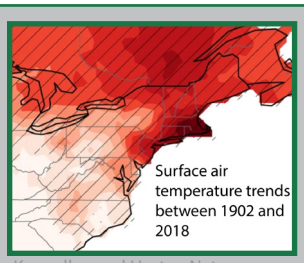
UMASS AMHERST

NE CASC has launched over 150 climate adaptation research projects since 2012.
Here are examples of climate adaptation challenges, and NE CASC solutions.

Challenges


USFWS

Invasive species & climate change amplify each other to harm culturally, ecologically, and economically important species and habitats. Better coordination among invasion researchers, climate modelers, and managers is essential for developing targeted solutions.

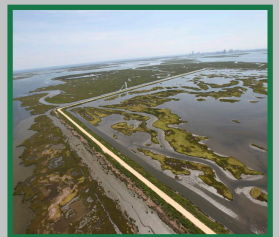


Karmalkar and Horton Nature Climate Change 2021

Climate change projections are an invaluable tool **for wildlife managers** to use in planning, but to be useful, the projections must align in space and time with the range and lifecycle of the wildlife being managed.


Rick Bennett/USFWS

Adapting to a changing climate requires new approaches to **flood control, hydropower, and water supply,** while also supporting **thriving river ecosystems.**


USFWS

Saltmarshes are drowning due to inundation from sea level rise, destroying essential fish and wildlife habitat. Loss of saltmarshes is one of the **biggest threats to coastal sustainability in the Northeast.**

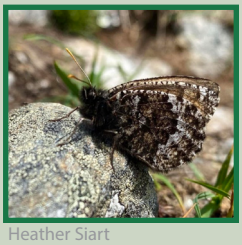
Solutions

RISCC Network (**R**egional **I**nvasive **S**pecies & **C**limate **C**hange) received a **2021 Climate Adaptation Leadership Award** from the Association of Fish & Wildlife Agencies for convening **invasion scientists, climate modelers, and natural resource managers** to conduct and synthesize research and highlight key management needs & opportunities. **RISCC uses an innovative regional solution model to approach range-shifting invasive species management.**


NAISMA RISCC Workshop (2019)

NE CASC scientists are collaborating with **State Wildlife Action Plan (SWAP)** Subcommittee in the **13-state** region of the **Northeast Association of Fish and Wildlife Agencies**, to produce usable climate change projections for informing management decisions.


Ryan Hagerty


Heather Siart

NE CASC researchers are studying strategies such as reconnecting floodplains and restoring green space along riverways to **reduce flooding risk and increase the resilience** of wildlife habitats and built environments to flooding.


USFWS

Even small restoration projects can reduce flood peaks while lessening the negative social and economic impacts on people and property located downstream.

Researchers are testing a management technique called **runneling**, or creating micro-channels to restore tidal drainage and save marshes from drowning. **This research will identify marshes and high priority habitat best suited for restoration using runnels.**


Lauren Owens Lambert

Learn more at: necasc.umass.edu

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