Where to get tools and information to move forward

• Portals
• Regional support & guidance
• Data portals
• Visualization Tools
• Analytical Tools
• Socio-economic tools
• Indices
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Case Study: Ray Estuary Partnership - Climate Read Adaptation Program
Targeting local decision makers.
Farmers are changing current practices.
Part of the Climate Impacts Group (CIC)
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NEW TO ADAPTATION?
Need help? Start here.
We'll get you on the right track!

Want to get more out of CAKE than we can possibly put into it? See what other users are talking about in the CAKE community!

In The Forums:
SEI Asia Centre looking for interns with adaptation and mitigation.
By: Allison, March 14, 2010
Ah, Copenhagen. We pinned our hopes and dreams on that Scandinavian city, and our hearts have been broken. They were not broken.
Read more

Submit your own case study:
Working on your own adaptation project you think others could learn from? Want to get ideas for your next steps? Submit now

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What is CAKE?
A project of Island Press and EcoAdapt
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Additional Resources
For more resources on climate change.
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Regional
The Great Lakes Regional Integrated Sciences and Assessments Center (GLISA) is a collaboration of the University of Michigan, Michigan State University, and The Ohio State University, with funding from the National Oceanic and Atmospheric Administration. The economy of the Great Lakes Region and the wellbeing of its residents will be greatly affected by regional and local changes to the climate. Climate change is likely to reduce lake levels, shift patterns of precipitation, and alter average seasonal temperatures.

GLISA spotlights three critical sectors in the region—agriculture, watershed management, and natural resources-based recreation and tourism—which are interconnected through issues of water quality and quantity. GLISA focuses on the watersheds of Lake Huron and Lake Erie located in the states of Michigan and Ohio and the province of Ontario, but its reach encompasses the broader Great Lakes basin.

The two overarching goals of GLISA are to contribute to the long-term sustainability of the region in the face of a changing climate and to improve the utility of scientific knowledge to decision making. It pursues these goals through three programmatic areas:

http://www.glisa.umich.edu/
Responding to Climate Change in New York State
Technical Report

Final Report
No. 11-18
Climate Change

New Yorkers are Working on Many Fronts

To help minimize risks from climate change, New York State has set two goals:

- **Reduce emissions of heat-trapping greenhouse gases** by 80 percent from 1990 levels, by the year 2050 (“80 by 50”), and
- **Improve resilience to climate change** in all the state’s communities.

As we work toward these goals, new economic opportunities will open and our dependence on out-of-state energy sources will diminish. This page links to information about planning, programs and actions that reduce the risk of harm from climate change and increase the benefits of the emerging low-carbon economy.

A Changing Climate Will Cost All New Yorkers

Already in New York:

- Winter snow cover is decreasing and spring comes, on average, a week or so earlier than it did a few decades ago.
- Even when the weather is cold, nighttime temperatures are measurably warmer.

Wisconsin Initiative on Climate Change Impacts (WICCI)

http://www.wicci.wisc.edu/

Wisconsin Initiative on Climate Change Impacts

Helping Wisconsin adapt to a changing climate

The Wisconsin Initiative on Climate Change Impacts (WICCI) is a statewide collaboration that brings scientists and stakeholders together to find adaptation strategies to the potential impacts of climate change in our state.

Adaptation will be the key to reducing the negative impacts of climate change and capitalizing on opportunities that develop. And adaptation will be critical in coming years. Even as we work to reduce emissions of greenhouse gases that are driving climate change, momentum already in the climate system guarantees that we will see significant warming, changes in precipitation patterns...
Developing Resources

- Department of Interior NE Climate Science Centers
- Department of Interior Upper Midwest and Great Lakes Landscape Conservation Cooperative
- NOAA Midwest Regional Climate Center, Illinois St.

Stay Tuned
Data Portals
A Word About Modeled Data

“Spurious precision and a false sense of accuracy”
-Hector Galbraith
Sea Level Rise
Risks along US coasts Read More.

Latest News
See all Climate Center news.
Independent assessment documents warming of 1°C since the 1950s
Posted: October 24, 2011
The new Berkeley Earth Surface Temperature study finds reliable...

About the Climate Center
The Climate Center is one of the entryways to Data Basin, the on-line database with data manipulation tools created by the Conservation Biology Institute (CBI).
The Climate Center:
- lists the most recent datasets, maps and galleries with relevance to climate change issues.
- provides special features that tell stories around specific datasets available in Data Basin.

www.databasin.org
Change in Dec-Feb Precipitation by the 2080s

Model: Ensemble Average, SRES emission scenario: A2

50%: This map shows the precipitation change projected by the middle model. Areas that are blue are projected to increase by at least half of the models, and areas that are yellow to red are projected to decrease in precipitation by at least half of the models.

http://www.climatewizard.org
Data: Coastal elevations, bathymetric lidar

http://www.csc.noaa.gov/digitalcoast/
Visualization
Tools: habitat priority tool, coastal change analysis program, coastal country snapshots, CanVis, N-SPECT

http://www.csc.noaa.gov/digitalcoast/
A visual simulation kit has been developed by the USDA National Agroforestry Center to provide natural resource professionals with a tool for creating simulations. CanVis is a visualization program used to "see" potential impacts from climate change or coastal development. Users can download background pictures and insert objects (hotel, house, marina, or other objects) of their choosing. The software is used by municipalities to brainstorm new ideas and policies, undertake project planning, and make presentations.
**Overview**

Use the Nonpoint-Source Pollution and Erosion Comparison Tool (N-SPECT) to investigate potential water quality impacts from development, other land uses, and climate change. N-SPECT was designed to be broadly applicable, but the tool operates most accurately in medium-to-large watersheds having moderate topographic relief.

A new publication describes regional pollutant coefficient development.

N-SPECT version 1.5.1 is now available.

**Features**

- Provides projections and maps of surface water runoff volumes, pollutant loads, pollutant concentrations, and total sediment loads.
- Helps users see areas that might benefit from changes to proposed development strategies.
- Processes digital elevation data quickly and easily.
- Provides a means to analyze "what if" land use change scenarios.
CSI Team Investigates Tornado Outbreak

Featured Article, May 06, 2011
by Rebecca Lindsey
The tornado outbreak across the southern United States in late April 2011 was deadly, devastating, and record breaking. NOAA's 'CSI' team is investigating the possible connections between global warming, natural climate patterns, and tornados.

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Meet NOAA's climate scientists and get their perspectives on climate.

- Predicting El Nino and La Nina Events
- Impacts of La Nina in Africa
- The Effects of Climate Change on El Nino & La Nina

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NatureServe Vista: Decision Support for Better Planning

NatureServe Vista is a powerful, flexible, and free decision-support system that helps users integrate conservation with land use and resource planning of all types.

Planners, resource managers, scientists, and conservationists can use NatureServe Vista to:

- conduct conservation planning and assessments
- integrate conservation values with other planning and assessment activities, such as land use, transportation, energy, natural resource, and ecosystem-based management.
- evaluate, create, implement, and monitor land use and resource management scenarios designed to achieve conservation goals within existing economic, social, and political contexts.

With version 2.6, NatureServe Vista is now compatible with ArcMap 10. ArcMap 10’s 64 bit platform has greatly increased Vista’s speed and ability to handle much larger planning regions.

www.natureserve.org
Climate Resilience Evaluation & Awareness Tool (CREAT)

EPA has developed CREAT, a software tool to assist drinking water and wastewater utility owners and operators in understanding potential climate change threats and in assessing the related risks at their individual utilities. CREAT provides users with access to the most recent national assessment of climate change impacts for use in considering how these changes will impact utility operations and missions.

CREAT allows users to evaluate potential impacts of climate change on their utility and to evaluate adaptation options to address these impacts using both traditional risk assessment and scenario-based decision making. CREAT provides libraries of drinking water and wastewater utility assets (e.g., water resources, treatment plants, pump stations) that could be impacted by climate change, possible climate change–related threats (e.g., flooding, drought, water quality), and adaptive measures that can be implemented to reduce the impacts of climate change. The tool guides users through identifying threats based on regional differences in climate change projections and designing adaptation plans based on the types of threats being considered. Following assessment, CREAT provides a series of risk reduction and cost reports that will allow the user to evaluate various adaptation options as part of long-term planning.

- For more information see Climate Resilience Evaluation and Awareness Tool Fact Sheet PDF (2pp, 245K)
- New! Register for CREAT Training
  Learn about how to use the tool through a series of webinars including:
  - CREAT 101 - An Introduction to the Tool

http://water.epa.gov/infrastructure/watersecurity/climate/creat.cfm
Socio-economic
ICLEI, King County, Climate Impacts Group Adaptation Book

http://cses.washington.edu/cig/fpt/guidebook.shtml#downloading
Indices
Confronting Climate Change

The NatureServe Climate Change Vulnerability Index

Climate change is affecting numerous plant and animal species right now. But how do you determine which species are most vulnerable, which ones need more focused attention sooner rather than later?

The NatureServe Climate Change Vulnerability Index can help identify plant and animal species that are particularly vulnerable to the effects of climate change. Using the Index, you apply readily available information about a species’ natural history, distribution and landscape circumstances to predict whether it will likely suffer a range contraction, population reductions, or both during the coming years. You can use the Index as part of a variety of analyses, including assessing the relative risk of species listed in State Wildlife Action Plans or part of any assessment of the vulnerability of species to climate change.

Update: Version 2.1 now available!

Every day, we learn more about our climate, the changes it is.
A Word About Modeled Data

“Spurious precision and a false sense of accuracy”

-Hector Galbraith
10 Commandments for Models*

1. Model outputs can be beneficial to planning processes;
2. They should only be used when they are needed; i.e. if the problem can be readily solved using conventional approaches, that is likely preferable;
3. For spatial planning with many overlapping considerations, models may not be available;
4. When used in planning, models should be considered in relation to agreed-upon goals and objectives of the planning process;
5. Good planning requires a mix of good science, governance, and communication / engagement with users;
6. Tools such as models require proper use of data and cannot be expected to answers to questions for which the processes are not clear.
7. Ultimately, adaptation is a social decision;
8. Tools like models can assist in providing a pool of possibilities and pointing out options that have not been considered before. It can highlight areas of uncertainty, as well as possibility;
9. Used properly, models are one source of information among many, including empirical data (environmental, social and economic); and
10. Local knowledge / concerns and other considerations (e.g. management practicalities) should be used in concert with model outputs to form adaptation strategies.

* Modified from the “Ten Commandments for Marxan in Planning"