Catskill Environmental Research & Monitoring (CERM) An Overview

Presented by William Rudge, NYSDEC

at the

3rd Biennial CERM Conference

October 23, 2014

Origin of CERM: Conceived by the Department of Environmental Conservation in 2009, in consultation with key research institutions.

Primary Goals:

1. Review past and current environmental research and monitoring activities in the Catskills;
2. Identify critical data gaps;
3. Develop a research and monitoring agenda to address threats to the region, including climate change and invasive species; and
4. Encourage communication, cooperation and collaboration among researchers and research institutions.

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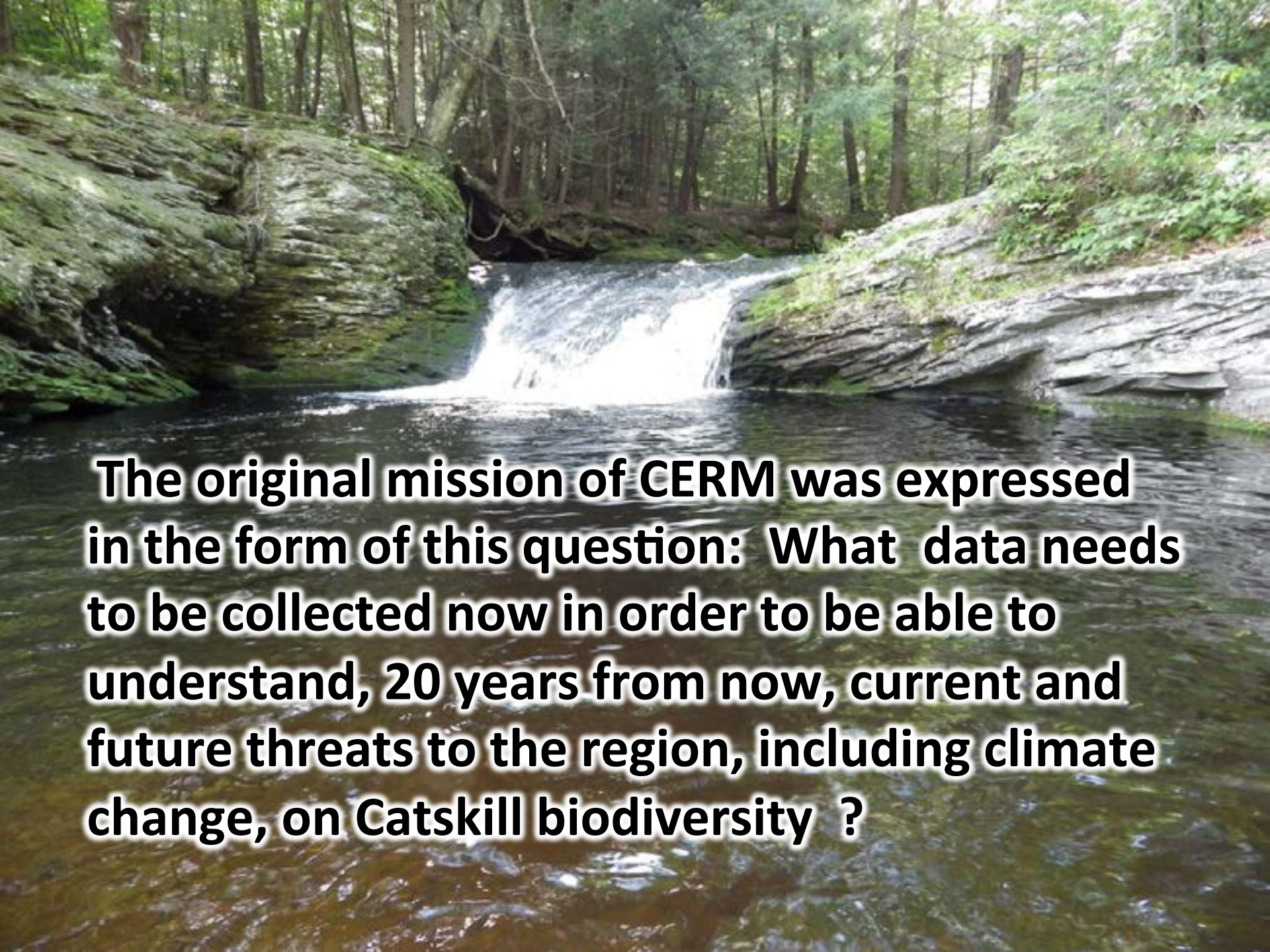


The original mission of CERM was expressed in the form of this question: What data needs to be collected now in order to be able to understand, 20 years from now, current and future threats to the region, including climate change, on Catskill biodiversity ?

- In 2010, DEC staff, hoping to organize a conference focused on Catskill region biodiversity, partnered with NYCDEP and Cornell Cooperative Extension of Ulster County who were planning a conference on Catskill water quality. The result was the first CERM conference held at Belleayre Mt. in November of that year.

- The conference included presentations by 37 researchers covering both biodiversity and water quality topics and showing many linkages between the two. Major themes included climate change, acid deposition and invasive species and their impacts on both aquatic and terrestrial ecosystems.

- The conference report included a discussion of data gaps as revealed in presentations and discussions, a preliminary bibliography of Catskill environmental research, and a message from Commissioner Martens expressing support for the effort.

CERM is an informal partnership between researchers and resource managers from several government agencies and academic institutions.

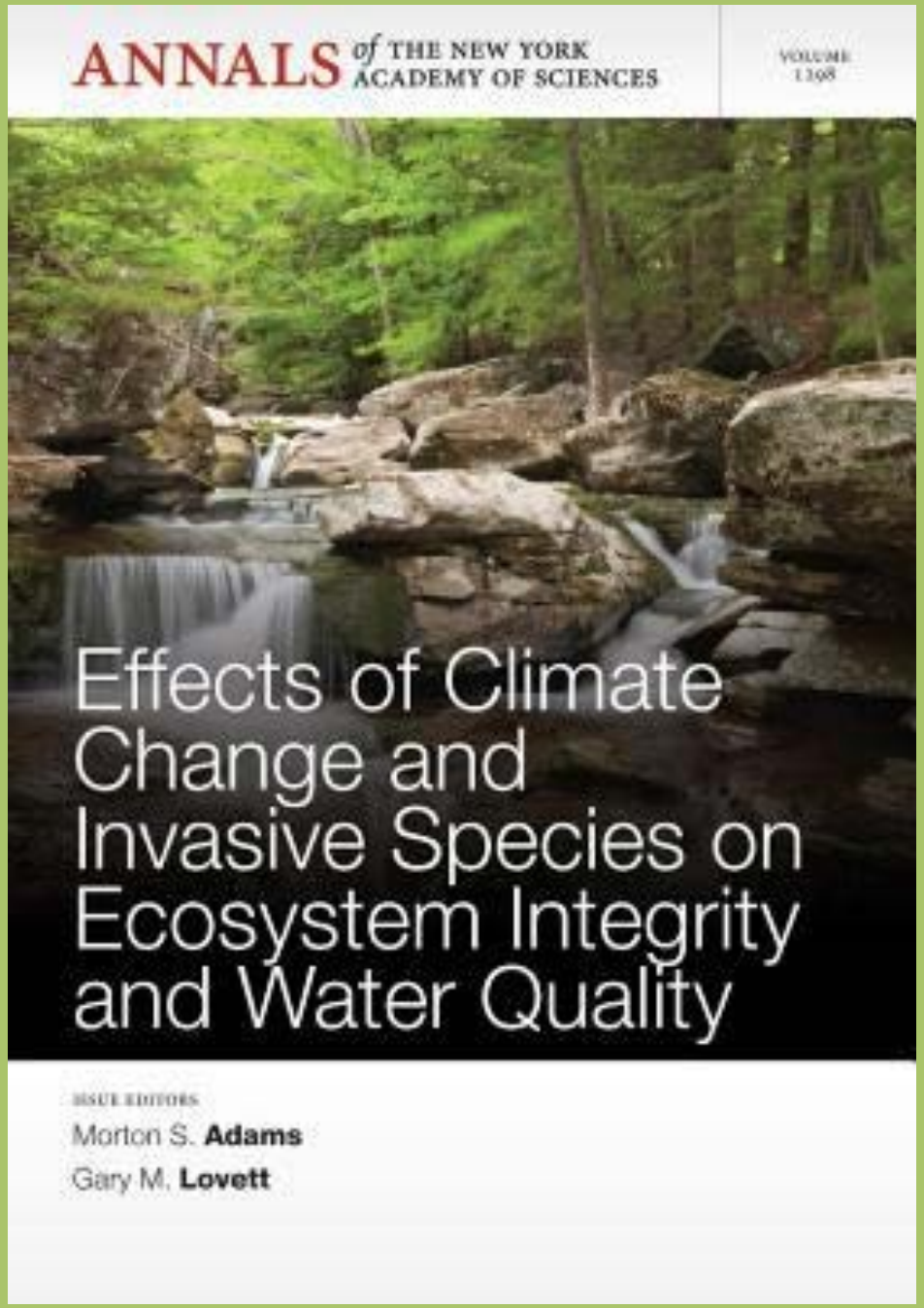
<u>Current Composition of the CERM Conference Planning Committee:</u>

NYSDEC
NYCDEP
Cary Institute of Ecosystem Studies
Cornell Cooperative Extension of Ulster County
US Geological Survey
Catskill Institute for the Environment
NYS Museum
NYSERDA
Syracuse University
Bard Center for Environmental Policy

The 2nd Biennial CERM Conference, held at Belleayre Mt. in October of 2012, featured 48 presentations by Catskill researchers.

The proceedings of the conference was published as a special issue of the Annals of the New York Academy of Sciences, a high-impact, peer-reviewed scientific journal.

The issue includes nine research papers covering topics relating to geologic weathering, soil chemistry, extreme weather events, groundwater chemistry, forest health, forest history, vulnerability of biodiversity elements to climate change, invasive species and wildlife habitat connectivity. The title expresses the unifying theme of the conference



In addition to holding a biennial conference, the CERM planning committee has identified and begun working on the following initiatives:

- Catskill Research Forest
- Catskill Data Sharing Catalogue
- Bibliography of Catskill Environmental Research
- Catskill Cooperative Research & Monitoring Network

Following are brief presentations on each of these initiatives by members of the CERM planning committee.

Catskill Research Forest Initiative

Presented by Gary Lovett
Cary Institute of Ecosystem Studies

Catskill Research Forest

Goal: To promote integrated research and monitoring of Catskill forests and streams

Advantages of designating a Research Forest:

- Facilitates sharing of information among researchers
- Promotes collaboration by focusing on a particular area
- Accumulation of information about the site provides background and context for studies
- Helps parameterize and test integrated models

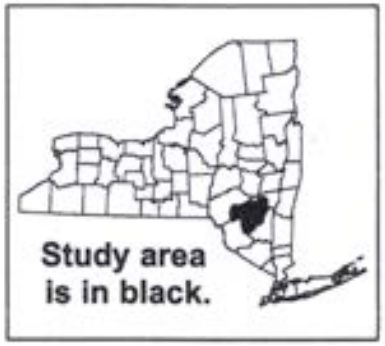
Criteria for Evaluation

The Research Forest should:

1. Be **protected** for long-term study
2. Contain one or more **watersheds** that can be gauged
3. Be **typical** of Catskill forests and comprised of a **variety of forest types** and geomorphic features
4. Have a **history of research** and monitoring activities
5. Have convenient **access**
6. Allow **experimental manipulation** in some part of the area
7. Be at least **2000 acres**
8. Be in the **Catskill High Peaks Eco-Region** and in the **NYC watershed**

Candidate Watersheds within Study Area

Map by Pine Roehrs



Peck Hollow

Hatchery Hollow

Diamond Notch

Ox Clove

Biscuit Brook

Fall Brook

Upper E. Branch Neversink

Upper Rondout

Legend

Final candidate watersheds

Candidate watersheds eliminated from consideration

0 5 10 20 30 40 Miles

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Catskill Data Sharing Initiative

Presented by Lorraine Janus
NYC Dept. of Environmental Protection

The CERM Data Directory:

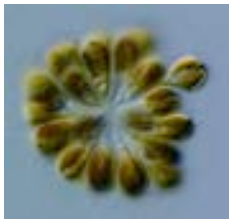
Purpose & Features:

- Provide a simple online guide to data collections and research projects in the Catskill region – past and present
- Provide contact information for key personnel
- Encourage collaboration between researchers by making complementary studies obvious
- Describe data type and coverage (spatial and temporal)
- Include master map of study locations
- Information must be easily sorted and updated
- Directory should be easily shared

Approach:

- Conference participants will receive an email request to fill out a simple one page google form to provide basic metadata on diverse studies
- Metadata will be automatically compiled into a Data Directory spreadsheet
- Info will include: important links for key reports, maps, and photos
- Projects can be easily sorted or searched via researcher, geographic location, key words, time period, or analytes
- Data Directory spreadsheet to be posted on website
- Directory will be updated continuously




Objective for this conference: Lets start the directory!

The email form will request these basic elements:

- Project title and brief statement of objective
- Key contact person: name, email, phone, affiliation
- Topic: key words for the study
- Study location: town, county, watershed
- Map: pdf if available
- Period of Record: start date & end date for data collection
- Sampling frequency: continuous, daily, weekly, monthly, annually
- Analytes collected: list of physical, chemical and biological measurements
- Spacial coverage: single grab samples? square miles?
- Sites: study area(s) and/or number of sample sites
- Links to key descriptive material – sampling plan, published report, photos

Bibliography of Catskill Environmental Research Initiative

Presented by Robyn Smyth
Bard Center for Environmental Policy

Catskill Research Bibliography

- Goals
  - identify knowledge gaps
  - facilitate research, particularly student and citizen research

- Topics
  - geology, forest ecology, soil, streams, water quality/supply, biodiversity, conservation & management, economics

http://www.bard.edu/cep/programs/catskill/

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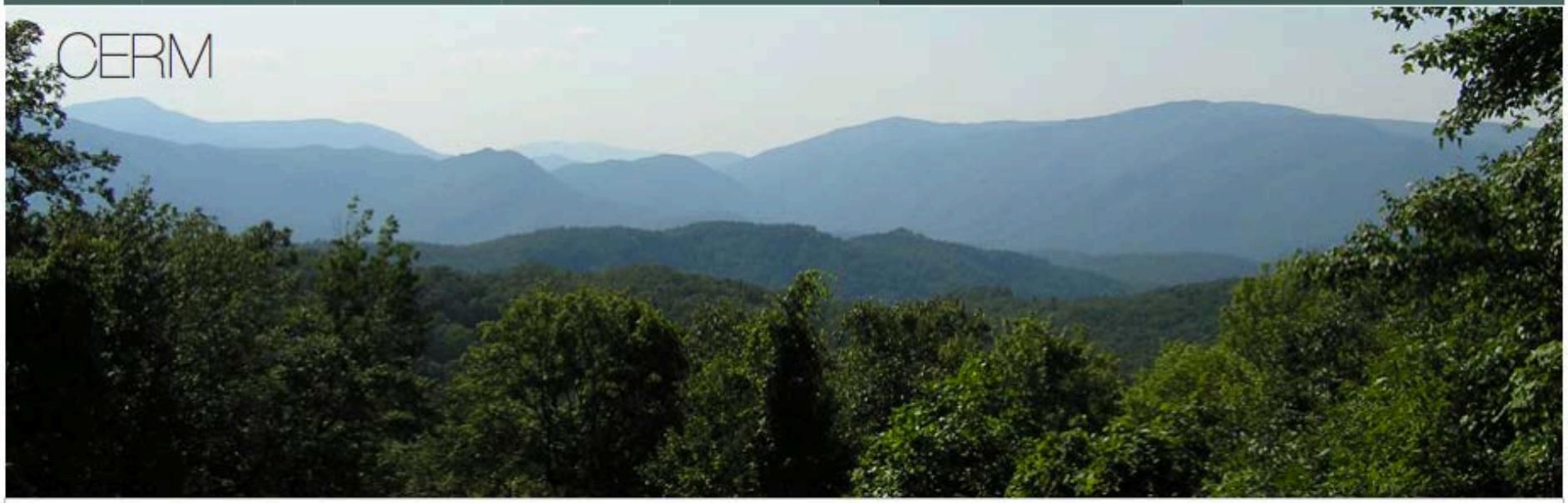

The Catskill Environmental Research and Monitoring Network

JOIN

Apply Online

Catskill Cooperative Research Initiative

Presented by Mark Vian
NYC Dept. of Environmental Protection

Questions…

If we are individually undertaking research projects in the Catskill Region, could we benefit from meeting on a regular basis to build and improve collaboration among us?

Is there an interest in developing a Catskill collaborative research network? Should a future workshop be organized?

Note: A network is different than a conference such as this one.

High Profile Management Imperatives

The Catskill Region - Easy Access for Research

Ongoing Environmental Research and Monitoring

- High Density and Extensive History of:
  - USGS Stream Gages, Met Stations, WQ Sample Sites
  - Diverse Stream and Terrestrial Ecosystem Process Monitoring
  - Diverse Climate Change Research
  - GIS Data Development

- Grass roots network – bottom up organization
  - Membership Determines the Focus
  - Common thread – Catskill Region
- Frequent 1-2/year meeting?
  - Important for build trust and fostering collaboration
- Member developed topical working groups
  - Collaborative projects that use shared data resources and research expertise
  - Produce work that could NOT be done alone
  - Groups continue and evolve. New groups develop. Effort to make groups inclusive
- Student training
- Membership can be used to leverage funding
- No direct funding for research projects, but…


Thank You