

MAINE'S SUSTAINABILITY SOLUTIONS INITIATIVE

Connecting knowledge with action to strengthen our economic, social & environmental future

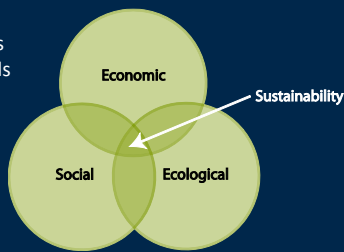


David Hart and Colleagues
Senator George J. Mitchell Center



The Challenge of Sustainability Science

Producing knowledge and linking it to actions that meet human needs while preserving the planet's life-support systems is emerging as one of the most fundamental and difficult challenges for science in the 21st century.



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The Challenge of Sustainability Science

- *“foster(ing) research that improves our ability to live sustainably on Earth”*
 - One of the critical investment priorities in NSF's Strategic Plan (NSF, 2006)

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Solving National Problems is a Top Priority



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The Need to Address "Practical Challenges"

- "...empower ... scientists to have ongoing contact with people who know what's involved in ... the many practical constraints and opportunities that can arise when turning ideas into reality."
- "...take advantage of today's open innovation model - in which the whole chain from research to application does not have to take place within a single lab, agency or firm - and become highly open to ideas from many players, at all stages."

— Science and technology priorities for the Fiscal Year 2011 budget, The White House, August 4, 2009

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The Promise of Sustainability Science

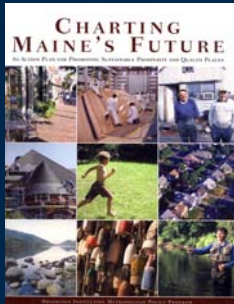
- Meeting Maine's needs
 - Strong economy
 - Vibrant communities
 - Healthy ecosystems



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Model Systems for Sustainability Science Research

- Landscape change as a focal problem
- One of the “Grand Challenges” for environmental science (National Academy of Sciences)
- A critical issue in Maine
- Urgent need for effective links between knowledge and action



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Key Drivers of Landscape Change in Maine

- Urbanization
- Forest Ecosystem Management
- Climate Change



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Solving Sustainability Problems

Solving sustainability problems requires unprecedented levels of program integration involving a high degree of interdisciplinary teamwork and robust university-stakeholder partnerships.



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Many barriers to interdisciplinary collaboration



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Strategies for Solving Sustainability Problems

1. All research teams include experts in the social, economic, and ecological dimensions of sustainability challenges as well as those skilled in linking knowledge to action.
2. Interdisciplinary teams work in close partnership with stakeholders to maximize the relevance and potential value of research for decision-making.



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SSI Core Principles & Values

- Responsiveness to Maine's diverse stakeholders
- Dedication to interdisciplinary collaboration and cooperation
- Shared leadership and responsibility for research outcomes
- Respect for Maine's communities, natural resources, and economic needs
- Transparent communication processes that respect diverse values and viewpoints and build consensus
- Commitment to excellence in innovative research



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SSI includes diverse faculty expertise

- Anthropology
- Biology and Ecology
- Chemistry
- Civil and Environmental Engineering
- Climate Change Institute
- Communication and Journalism
- Cooperative Extension
- Earth Sciences
- Economics
- Education
- Forest Resources
- George J. Mitchell Center
- Maine Business School
- Margaret Chase Smith Policy Center
- Marine Sciences
- Mathematics and Statistics
- Muskie School of Public Service (USM)
- Native American Research
- Plant, Soil and Environmental Sciences
- Psychology
- Spatial Information Science and Engineering
- School of Law
- Wabanaki Center
- Wildlife Ecology

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Major Research Goals

- Understand & predict the causes & consequences of landscape change
- Develop organizational models to:
 - Engage stakeholders
 - Facilitate interdisciplinary research
- Investigate connections between knowledge and action
- Create information systems about landscape change



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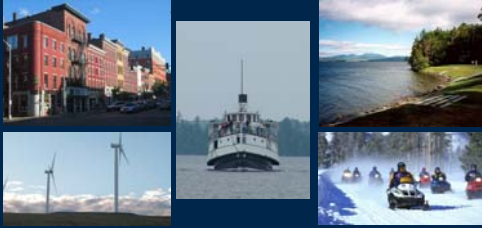
Benefits to Maine

- Enhancing research & workforce capacity
- Preserving quality of place
- Improving land use planning and natural resource management
- Enhancing technology clusters



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