



**MEMORANDUM OF UNDERSTANDING
ON COOPERATION IN RESEARCH OF ECOSYSTEM SERVICES
MULTI-SCALE MODEL TESTING**

BETWEEN THE

U.S. ENVIRONMENTAL PROTECTION AGENCY

AND THE

**GUND INSTITUTE FOR ECOLOGICAL ECONOMICS
UNIVERSITY OF VERMONT**

I. PURPOSE/OBJECTIVES/GOALS

This MOU constitutes an understanding between the U.S. Environmental Protection Agency's, Ecological Research Program and the Gund Institute for Ecological Economics to collaborate in conducting and utilizing ecosystem services research and transferring the results to others to support the missions of both parties, especially where benefits to the public and the environment would arise from joint activities.

The purpose of this MOU is to develop the collaboration between EPA and the Gund Institute for enhancing the shared interest of safeguarding the natural environment by establishing a greater understanding of the value of ecosystem services and the interdependent relationship to human activities and well-being. In general, the parties intend to focus on:

- Transforming the way we understand and respond to environmental issues by making clear the ways in which our choices affect the type, quality, and magnitude of the services we receive from ecosystems -- such as clean air, clean water, productive soils, and generation of food and fiber;
- Advancing a more comprehensive theory and practice for quantifying ecosystem services, their value and their relationship to human well being, for consistent incorporation into environmental decision making;

- Conducting innovative ecological research that provides the information and methods needed by decision makers to assess the benefits of ecosystem services to human well-being, and, in turn, to shape policy and management actions at multiple spatial and temporal scales.

The Parties agree that their mutual Goal is to promote and conduct ecosystem services research to develop high quality scientific products and valuation tools for use in environmental decisions by Federal Agencies, States, the Private Sector and Public Interest Groups for the benefit of humans and the environment. The Parties also agree that the independence and objectivity of the Gund Institute research is a valuable asset to both agencies.

Within these stated Goals, this MOU identifies the following long- term, joint research objectives:

- a. Collaborate on the design and conduct of studies of ecosystem services.
- b. Promote further research and development of the MIMES modeling system.
- c. Application of the MIMES framework across the ERP place based study sites.
- d. Creation of a “State of the Nation’s Ecosystem Services” Report.
- e. Improved ecosystem services methodologies for providing reliable indicators and models for use by decision makers.
- f. Investigate innovative approaches, methods and models for valuation of ecosystem services.
- g. Future and specific projects will be undertaken after additional abbreviated agreements are made between associated parties.

Both parties recognize the benefit of defining a larger research enterprise that touches on joint interests, leverages core capabilities, and raises the visibility of this important collaboration. Thus, this Memorandum of Understanding lays the foundation for a broader, co-sponsored program that would improve efficiencies and avoid redundant research activities and products, through leveraging resources and capabilities within each Agency.

II. BACKGROUND

The U.S. Environmental Protection Agency (EPA), Ecosystem Research Program (ERP), and the Gund Institute for Ecological Economics at the University of Vermont recognize that ecosystems provide a myriad of goods, functions, physical and biological processes which support human well being. The missions of both agencies include illuminating the value of ecosystem services for the purpose of helping decision-makers anticipate the likely future consequences of management decisions thereby avoiding unintended consequences.

The EPA is one of only a few federal organizations that operate as both a regulatory and a science agency. Its regulatory activities are driven by the nation’s environmental laws, which also authorize its research efforts. This research is housed primarily in the Office of Research and Development (ORD) which has established eight integrated research programs to address human health and ecology, including the Ecological Research Program (ERP).

The Gund Institute develops, tests, and implements innovative methods and models which integrate social, built, natural, and human capital. One of these innovations is the Multi-scale Integrated Models of Ecosystem Services (MIMES) project. MIMES provides a suite of models that assess the value of ecosystem services in a sophisticated and transferable system to allow ecosystem managers to quickly understand the dynamics of ecosystem services, how their services are linked to human welfare, and how their function and value might change under various management scenarios.

The EPA National Program Director for Ecology and the Director of the Gund Institute believe that a formal memorandum will provide the structure and basis for implementing and expanding the mission and goals of each party through joint research, development, and application activities in development of valuation of ecosystem services. Both parties agree that their common goals would be furthered by mutual collaboration.

III. AUTHORITIES

EPA enters into this MOU pursuant to Section 103 of the Clean Air Act and Section 104 of the Clean Water Act, both of which encourage cooperative research investigation, training and information sharing.

The EPA was established in 1970 in response to growing concerns over polluted air, unclean rivers, unsafe drinking water, endangered species, and careless waste disposal. EPA was given the responsibility for implementing a broad set of federal environmental laws, which have contributed in the intervening years to significant improvements in environmental quality. The mission of the Agency is to protect human health and safeguard the natural environment – air, water, land – upon which life depends.

IV. ROLES AND RESPONSIBILITIES

Each party intends to:

- A. Agree to meet once a year to update the joint plans to conduct scientific research, and once to jointly review the progress made towards agreed upon objectives.
- B. Alternately take the lead on setting up these meetings and will involve the appropriate parties across both organizations. EPA will take the lead in 2007.
- C. Agree to work towards a balanced ecosystem services modeling and assessment research program from both a scientific and resource standpoint.
- D. Acknowledge the need for timely publication of research results in accordance with prevailing scientific standards. Publications under this Memorandum of Understanding will be available for both parties to review. Formal review and approval will be conducted by the sponsoring agencies.

- E. Work jointly to transfer the relevant products and tools that are needed to support environmental decision making to interested Federal Agency officials, State and Local institutions and the Public, providing for technical assistance as appropriate.
- F. Assume liability for their respective risks associated with the activities undertaken, and fund its own participation.

V. LIMITATIONS

- A. All commitments made in this MOU are subject to the availability of appropriated funds and each party's budget priorities. Nothing in this MOU, in and of itself, obligates the Gund Institute or EPA to expend appropriations or to enter into any contract, assistance agreement, interagency agreement, or other financial obligation. The Gund Institute agrees not to submit a claim for compensation for services rendered to EPA or any other federal agency for activities it undertakes in carrying out this MOU.
- B. This MOU is neither a fiscal nor a funds obligation document. Any endeavor involving reimbursement or contribution of funds between the parties to this MOU will be handled in accordance with applicable laws, regulations, and procedures, and will be subject to separate subsidiary agreements that will be effected in writing by representatives of both parties.
- C. Except as provided in Section V. paragraphs (A) and (B) and Section VII, INTELLECTUAL PROPERTY, this MOU is not legally binding and does not create any right or benefit, substantive or procedural, enforceable by law or equity against the Gund Institute or EPA, their officers or employees, or any other person. This MOU does not direct or apply to any person outside the Gund Institute and EPA.
- D. The Gund Institute may make factual statements to the public which describe its cooperation with EPA. However, nothing in this MOU allows EPA to endorse the purchase or sale of the Gund Institute products or services. The Gund Institute agrees not to make statements to the public in news releases, product brochures, on web sites or in any media that imply EPA endorsement of the Gund Institute products or services.

VI. PROPRIETARY INFORMATION

To carry out the joint work resulting from this MOU, the Gund Institute may need to disclose proprietary information to EPA. For the purpose of this MOU, proprietary information is defined as information that an affected business claims to be confidential and is not otherwise available to the public. The Gund Institute agrees to clearly identify as such confidential information disclosed to EPA in writing; and to clearly memorialize in writing, within a reasonable time, any confidential information initially disclosed orally. EPA agrees not to disclose, copy, reproduce or otherwise make available in any form whatsoever to any other person, firm, corporation, partnership, association or other entity information designated as proprietary or confidential information without consent of the Gund Institute except as such information may be subject to disclosure under the Freedom of Information Act (5 U.S.C. § 552), and EPA's regulations at 40 C.F.R. Part 2, or as otherwise authorized by law.

Joint work under this Memorandum of Understanding requires the sharing of proprietary information. Proprietary information is defined here as information that an affected business claims to be confidential, is exempt from mandatory disclosure under applicable federal law, and is not otherwise available to the public. Proprietary information disclosed by one party to the other in writing must be clearly identified as such; proprietary information initially disclosed orally must be clearly memorialized in writing within a reasonable time for the receiving party

VII. INTELLECTUAL PROPERTY

The parties agree that any copyrightable subject matter, including but not limited to journal articles, training, educational or informational material or software, created jointly by the parties from the activities conducted under the MOU may be copyrighted by The Gund Institute. The Gund Institute hereby grants to the government a royalty-free, nonexclusive, irrevocable right to reproduce, distribute, make derivative works, and publish or perform the work(s) publicly, or to authorize others to do the same on its behalf.

Neither party claims by virtue of this agreement any legal interest in existing or pending intellectual property - patent, copyright, trademark, or trade secret - of the other party or in any intellectual property that might result from the other party's previous activities. Rights to intellectual property arising from education and research programs undertaken in furtherance of this MOU will be allocated according to law and the policies of the parties.

VIII. POINTS OF CONTACT

The following individuals are designated points of contact for the MOU:

U.S. Environmental Protection Agency:

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Gund Institute:

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IX. MODIFICATION/DURATION/TERMINATION

This MOU will be effective when signed by all parties and expire twelve (12) years after execution. This MOU may be amended at any time by the mutual written consent of the parties. The parties will review this MOU every three (3) years to determine whether it should be revised, renewed, or cancelled. This MOU may be terminated by either party at anytime by one party notifying the other party in writing 90 days in advance of the termination date.

X. APPROVAL

Gund Institute for Ecological Economics
Robert D. Costanza, Ph.D.
Director, Gund Institute for Ecological
Economics, University of Vermont

U.S. Environmental Protection Agency
George M. Gray, Ph.D.
Assistant Administrator, Office of
Research and Development

(Signature Block)

(Signature Block)

Date

Date