



## UNH Scientists Awarded For UN Global Ecosystem-Human Health Study

Contact: [David Sims](#)

603-862-5369

Science Writer

Institute for the Study of Earth, Oceans, and Space

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DURHAM, N.H. -- Four scientists from the University of New Hampshire were among the authors of the United Nations Millennium Ecosystem Assessment (MEA) recently awarded the Zayed International Prize for the Environment, considered to be the largest and most valuable environmental prize worldwide.

Professors Charles Vörösmarty and George Hurtt, former research scientist Ellen Douglas, and former Ph.D. student Manoel Cardoso received the award for their part in helping author the four-year, \$21-million effort, which was called for by United Nations Secretary-General Kofi Annan in 2000. The assessment cataloged the condition of the globe's ecosystems and their life-giving services.

The five-volume MEA report brings into focus the consequences of ecosystem change for human well-being and establishes the scientific basis for actions needed to enhance the conservation and sustainable use of ecosystems and their contributions to human well-being.

Nearly 400 scientists served as authors of the report, which involved input from more than 1,360 experts worldwide – including lead author Cardoso who even while completing his doctorate was a noted expert in the role of fires in global ecosystems. The MEA chapter Hurtt and Cardoso contributed to dealt with the role disturbances, including floods and fires, play on ecosystems.

Notes Hurtt, an ecosystem ecologist with the UNH Institute for the Study of Earth, Oceans, and Space (EOS) and the Department of Natural Resources and Cardoso's advisor at the time, "That Manoel was a lead author in this global study shows remarkable accomplishment by a student." Cardoso is now a research scientist with the National Institute for Space Research or INPE in Brazil – that country's equivalent of NASA.

Says Cardoso, "I didn't expect to be part of such an important project as a lead author before finishing graduate school. I believe that being in a Ph.D. program at EOS, and having George Hurtt, Berrien Moore, and others from the institute on my committee provided me with important tools to participate in the Millennium Ecosystem Assessment and to produce relevant scientific work even before graduating." Berrien Moore is the director of EOS.

Hurtt and Cardoso note that the MEA is analogous to the UN's Intergovernmental Panel on Climate Change or IPCC reports, the fourth of which was recently released and states unequivocally that humans are responsible for climate change. Both the IPCC reports and this, the first MEA, are international, peer-reviewed, global-scale assessments. The MEA is first worldwide assessment of the status and changes to ecosystems around the world.

An ecosystem is a dynamic complex of plant, animal, and microorganism communities and the nonliving environment interacting as a functional unit. Such systems are integral to the functioning of the Earth and also provide important products and services to humankind –

including the purification of air and water we breathe, the food we eat, and natural medicinal products.

The MEA deals with the full range of ecosystems – from those relatively undisturbed, such as natural forests, to landscapes with mixed patterns of human use and to ecosystems intensively managed and modified by humans, such as agricultural land and urban areas.

Says Hurtt, “The Millennium Ecosystem Assessment is openly human-centered. The premise is that by drawing that connection – ecosystem changes and how they affect humans – that will empower people and policymakers to act.”

Vörösmarty, of EOS and the Department of Earth Sciences, is the director of the EOS Water Systems Analysis Group and served as the coordinating lead author for the section on global freshwater. Of the chapter on freshwater services that he and Douglas (now of UMass-Boston) worked on, Vörösmarty says, “We were forced to look in new and different ways at how the world's hydrologic cycle interacts with human populations on a worldwide scale.”

For example, Vörösmarty notes, they were able to estimate the number of people living in the driest and wettest halves of the Earth's land mass and found, to their surprise, that 85 percent of all humans inhabit the driest half, with corresponding elevated and increasing pressures of this critical natural resource.

The \$1 million Zayed prize is split into three categories: a prize of \$500,000 to an individual for global leadership; a prize of \$300,000 for scientific and technical achievement; and a prize of \$200,000 for environmental achievements having a positive impact on society.

Authors of the MEA were collectively awarded for scientific and technical achievement, and each received a “diploma” of recognition. The prize money goes towards furthering the work of the assessment.