

Crossroads

A Newsletter of The H. John Heinz III Center for Science, Economics and the Environment

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THE HEINZ CENTER

The Heinz Center is a nonpartisan, nonprofit institution dedicated to improving the scientific and economic foundation for environmental policy through multisectoral collaboration. The Center fosters collaboration among industry, environmental organizations, academia, and all levels of government in each of its program areas and projects.

Hot Time, Summer in the City

Here in Washington, DC, the middle of spring brought with it heat and humidity that we usually associate with August. In the Rockies and the mountain forests of the American West, a drought of historic proportions has already taken shape, raising the chances of another year of conflagrations. And throughout the Arctic, the last few decades have witnessed rapid warming and associated environmental changes, from loss of permafrost and associated road and building damage to more subtle declines in populations of fish and marine mammals.

Are we seeing global warming? Are these observations harbingers of an inevitable future, or are they ephemera to be noted, coped with, but not worried over? What does a credible examination of the facts tell us about global warming and climate change, especially in the face of the occasionally fierce and opinionated public debate?

Some facts are inescapable. The atmosphere is different than it was at the beginning of the industrial revolution, due mostly to human activities. Concentrations of carbon dioxide in the atmosphere have increased over 30% since the middle of the 19th century, and continue to increase by more than 1% per year. Concentrations of methane and nitrous oxide have also risen in the same time frame. We single out these gases for attention for three reasons. One is that along with water vapor and a few other gases, they trap heat in the atmosphere and therefore warm the air and the Earth's surface, i.e. they are greenhouse gases. A second is that for carbon dioxide, methane, and nitrous oxide, the increases over the last century and a half are clearly due to human activities. Increases in carbon dioxide, the gas that has received the most attention are clearly due to a combination of land-use change (mostly clearing forests for agriculture) and fossil fuel combustion. Third, these gases have long lifetimes in the atmosphere: a molecule of methane stays in the atmosphere for roughly a dozen years, but nitrous oxide has a lifetime of over a century, and carbon dioxide cycles from the atmosphere to living things and the oceans and back again, but tends to reside for several decades to a century in its atmospheric home.

Other gases and particles in the atmosphere also affect climate, of course. Clouds and aerosols can either contribute to atmospheric warming or cooling, depending on their height in the atmosphere, their color, and their chemical make-up. White particles high in the atmosphere, for example, tend to reflect light and energy away from the planet and therefore can cool the atmosphere, while black soot from burning wood or coal absorbs energy (continued on page 4)



Glaciers that feed this lake in Xin Jiang Province in Western China are receding.

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From the President

On summer days, we are reminded that signals of the human impact on the Earth are all about us. Even from afar, there is detectable change on our planet: an increase in global average temperature, in atmospheric CO² concentration, as well as retreat of glaciers, and an increased prominence of fire, especially in tropical forest regions. Heinz Center Vice President Tony Janetos is actively engaged in a four-sector approach for this priority program area.



Oceans cover two-thirds of the Earth's surface, and are experiencing great change from human hands, as documented by the Pew Oceans Commission and as reflected in the recently released report by the U.S. Commission on Ocean Policy. With most of the world's fish stocks seriously depleted, and 90–95% of big predatory fish gone in the last couple decades, plus Food and Drug Administration warnings about mercury in tuna, the oceans cry out for attention. We are fortunate to have Jim Good from Oregon State University assisting us in rebuilding our Sustainable Oceans, Coasts and Waterways program. A newly reconstituted Advisory Committee met for the first time in April.

Here at home, the State of the Nation's Ecosystems project has been paying attention, among other topics, to landscape indicators and to invasive species. Invasive species constitute an under-recognized major issue, mostly because media attention tends to focus on a species at a time. But even that can be alarming: sudden oak death, already such a problem in California, was just recently discovered to have infected nursery stock of camellias shipped nationwide from the West Coast.

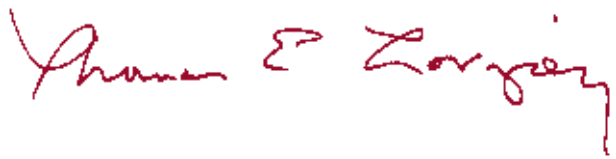
Internationally, two important results (from the 25-year-old Biological Dynamics of Forest Fragments project in the Brazilian Amazon) on forest fragmentation and global change have implications for our main program areas. In the very first publication revealing the time for species to be lost from fragments of once more widespread natural habitat, fragments of 100 hectares (250 acres) were shown to lose about 50% of their forest interior bird species in less than 15 years. To cut the rate of species loss by a factor of ten (continued on page 3)

requires an increase of fragment size by a factor of 1000. While this may be an extreme case, it underscores the importance of addressing fragmentation in landscape design and management. A separate analysis of tree communities in intact forest revealed unexpected and dramatic changes in tree species composition and growth—perhaps due to elevated atmospheric levels of CO². No part of our world is untouched by global change.

We are pleased to have been invited to the World Economic Forum at Davos in January to discuss global environmental change, to have had former trustee

Donald Kennedy address the annual dinner in November on the topic of science and sustainability, and the engagement of our trustees old and new in setting priorities for future studies.

There is clearly no dearth of important topics for which The Heinz Center’s four-sector approach can be productive. The goal of ensuring a habitable planet is a major challenge for us all.



The Heinz Center Well Represented at AIBS

Thomas E. Lovejoy, President of the Heinz Center, gave a plenary lecture at the 2004 annual meeting of the American Institute for Biological Sciences (AIBS) in Washington, D.C. Tom Lovejoy has addressed the AIBS membership several times since 1988, and this year’s talk, “Is the Top Beginning to Blow Off? Environmental Urgency and Biology’s Moment in History,” continued this tradition with a message of grave concern and guarded optimism. He summarized the global state of species extinctions, Amazonian deforestation, fisheries stocks, human population growth, coral reef health, and atmospheric carbon dioxide concentration targets.

The Center’s State of the Nation’s Ecosystems project was also represented at the meeting. The Center organized a panel discussion on Plagues and Pestilence: A National Indicator and Monitoring Strategy for Non-native Species. The panel presented indicators for plants, animals, pathogens, and invertebrates developed by the project’s Non-native Species Task Group. The panel consisted of two Non-native Species Task Group members, Ann Bartuska, Deputy Chief for Research and Development at the Forest Service, and Richard Mack, Professor in the School of Biological Sciences at Washington State University, and two Heinz Center staff members, Robin O’Malley, Project Director and Senior Fellow, and Laura Meyerson, Fellow. The Task Group’s

Invasive Species

Non Native Species Nutria (*Myocastor coypus*), a member of the rodent family, were introduced to the



United States from South America both accidentally and intentionally (for fur trapping and farming). One of the primary impacts of nutria is marsh loss due to their feeding and digging behaviors which negatively impacts plants and animals alike. However, the sale of nutria furs is an important source of income for many trappers in regions where nutria are numerous. Most pelts are harvested in Louisiana, and around 2 million pelts are harvested annually. (Source: US Geological Survey)

report is in draft and will be available for review soon. Members of the Non-native Species Task Group are listed on the Heinz Center’s *State of the Nation’s Ecosystems* webpage (<http://www.heinzcenter.org/ecosystems/index.htm>). For further information, contact Laura Meyerson, (202) 737-6307 or meyerson@heinzctr.org.

Hot Time, Summer in the City

(continued from page 1)

and warms the atmosphere. There are many details about exactly how different atmospheric constituents influence climate, but one thing is clear. Physics works. Putting additional greenhouse gases in the atmosphere increases the amount of heat that is trapped, and that energy has to go somewhere.

So where's the extra trapped heat going? One place is in the oceans. We know from meticulous ocean surveys that the surface layers of the ocean have indeed warmed over the past decades, and now store much more heat than previously. Because water both warms up and cools down slowly, one might think of this extra heat in the ocean as a long-lived reservoir that can have long-term effects.

The other place the extra heat is going is raising surface air temperatures and changing precipitation patterns. The best surface data show an increase in global annual average temperatures at the surface of slightly more than a half-degree over the last century, after making adjustments for the increasing number and spread of cities. Of course, some parts of the world have warmed more than others. Some regions have even cooled over the past century. But the consensus of thousands of knowledgeable scientists around the world is that the changes in global and regional climate can no

longer be explained simply by natural variability. The mark of human hands is now on the Earth's climate itself.

Well, so what? Should we worry about climatic disasters of Hollywood blockbuster proportions? Will better technology be the answer? And doesn't more carbon dioxide in the atmosphere mean that trees and crops will simply grow bigger and faster? What really is at risk?

Scientists around the world have devoted much of the past 15 years and more trying to understand these issues, and assess what might be expected from different possible climate futures. A few major lessons have emerged from this growing body of work. One is that some ecosystems are already beginning to change as a consequence of changes in climate. Careful analysis of observations of some animals and plants has shown that a few species are beginning to move north as the climate warms. The seasons themselves seem to have advanced; northern and temperate latitudes are seeing the signs of spring about two weeks earlier than in previous decades, and the early greening of spring can even be seen from Earth—observing satellites. Data on rainfall, snowfall, and runoff from many regions show increases in the frequency of extreme events and earlier snowmelt and stream-flow than in the past. Glaciers around the world have receded quickly, and sea level is rising at rates that are consistent with a combination of glacial melting and expansion of the newly warmer sea. Most of the sea level rise both now and for the near future is a result of the warming ocean—water expands as it warms. Corals in tropical and sub-tropical waters are being damaged severely by warming surface water, especially when combined with other environmental stresses. The chemistry of surface ocean waters is beginning to be affected, and some experiments show that this may have adverse impacts on corals and other oceanic life. Sophisticated experiments have been done to grow trees, other natural plants, and crops with added carbon dioxide and/or warmer soil or air temperatures than today's climate. The details differ in each case, of course, but it has now become clear that in real ecosystems, increases in tree and plant growth are either ephemeral, or are counteracted by other environmental factors.

The US and other industrial countries may well have a slightly different set of concerns over the next few decades to a hundred years than other parts of the world. The best current studies of potential impacts of climate change suggest that national agriculture in the US and Europe is fairly adaptable to the sorts of climate



Wind power in western China is a growing energy source.

changes that might be anticipated, although some regions have serious vulnerabilities, particularly if they are places where agriculture is already only marginally productive. Agriculture is in considerably more jeopardy in poorer countries, particularly those that are already in arid or semi-arid parts of the world. Commercial forestry does not seem to be in immediate jeopardy, but the longer-term future of forests depends on how the individual tree species respond to the expected increases in fire, pests, and whether they can disperse to new landscapes. In the US and Europe, increases in infectious diseases and deaths from heat waves can be adapted to, but this will be difficult for countries and societies that are less wealthy. Around the world, we are already seeing impacts from the combination of sea level rise and subsequent increases in storm surges running headlong into widespread trends of growing development in coastal zones. Again, the resources and human capital of the northern industrial countries may well be able to cope with some of these consequences more easily than in the developing world, where the fate of entire populations (and even some countries in low-lying Pacific island states) may hang in the balance.

But for all our ingenuity and wealth, natural ecosystems in both the industrial and developing world appear to be at substantial risk from climate change. There are simply not as many strategies for adapting to climate change in natural ecosystems, and we already know that some natural areas and species are quite sensitive to even relatively small changes in climate. In this respect, climate change poses special problems for ecosystems and biodiversity, in part because their functions and existence are not major features of national economies.

What ought to be done? Climate change is not like acid rain, or CFC's, where a limited number of chemicals were involved, and the technological and economic means of reducing the risk were well known. The processes that contribute to increasing greenhouse gases in the atmosphere are fundamental to providing the energy needs of the world's economy, needs that will only increase as the Earth's population grows, and as its economic output grows. So we need to tread carefully. We also need to realize that more than a century of build-up of greenhouse gases cannot be turned around overnight. Finally, we must have humility about our knowledge base. There are many Earth processes that we simply must understand better so that we can tailor potential solutions to the climate challenge.

A broad perspective suggests that several steps might be taken now. One is to take prudent actions to reduce greenhouse gas emissions, starting with reductions in their rate of increase. Increasing the efficiency with which we use energy is extremely

***B**ut for all our ingenuity and wealth, natural ecosystems in both the industrial and developing world appear to be at substantial risk from climate change.*

effective as a starting point, but we also must figure out how to harness the creativity of economic markets. For example, carbon trading markets, such as the Chicago Climate Exchange, suggests that trading can be done efficiently. A large number of states have taken actions independently and as parts of regional consortia to encourage energy efficiency and carbon reductions, and the US Senate has been debating cap and trade legislation, whose support has been growing. But these efforts cannot hope to generate large amounts of private investment unless there are stronger policy signals from national government. That investment is critical, because there is only so much that current technology can accomplish. Every scientific and engineering body that has examined this issue has concluded that investments in new energy technologies (for production and use) are critical, whether they are for renewable energy, such as solar power, wind power, or geothermal power, or for better ways of generating power or capturing greenhouse gases from smoke stacks. Second, we need to reduce rates of deforestation, largely in the tropics and subtropics, which should have substantial additional environmental benefits. The deforestation we have had for the past several decades is close to a quarter of the net increase in annual carbon dioxide emissions to the atmosphere. Third, we have to get serious about adapting to the changes that are already "built-in" to the system for the next several decades. Creating effective coping strategies at the same time as we take steps to reduce overall risk will require cooperation of scientists, government, the private sector, and the NGO's. Climate is not the only issue that must be addressed, and coming to grips with people's priorities is a challenge that has only begun to be addressed. Fourth, we have to stay vigilant and increase our base of knowledge. Because our understanding is imperfect, it will remain important to keep track of changes as they occur, and seek to understand them so that we can learn as we go. We will need to be willing to learn along the way if our balance of emissions reductions, efficiency increases, coping with change, and research needs to be adjusted.

—Anthony C. Janetos, Vice President

For comments or questions contact: janetos@heinzctr.org.

Matilija Dam Set for Demolition

The Army Corps of Engineers and the Ventura County Watershed Protection District recommended on September 23, 2004 that the Matilija Dam on the Ventura River in California should be demolished. In 2002, The Heinz Center's *Dam Removal: Science and Decision Making* report, cited in the final draft of the Army Corps' report, included a Benefit-Cost Analysis of removing 190 feet tall and 600-foot wide structure. Both reports concluded that demolishing the dam would improve the habitat of endangered southern steelhead trout and prevent the dam's reservoir from filling with silt and becoming ineffective by the year 2020. (<http://www.matilijadam.org/report.html>)

Drawbacks of removing the dam include the potential for six million cubic yards of sediment to reduce river flow and degrade water quality. Removal of the dam will prompt the water district to search for new sources of water for nearby residents (The Heinz Center 2002). The Army Corps has not yet decided how and when they will remove the structure, but when this removal goes ahead, it will be the largest dam removed in the United States.

According to Heinz Center President Thomas Lovejoy, "We are pleased to see that our report on dams is assisting in making decisions about the important topic of dam removal. We are confident that this thoughtful



Savage Rapids Dam. Policymakers struggle with environmental and economic issues in making decisions about removing a dam. By the end of the 20th century there were more than 80,000 dams in the United States six feet or higher (U.S. National Inventory of Dams).

report will aid the Army Corps of Engineers in making a decision that balances the needs of the community with sound environmental policy."—Judy Goss, Heinz Center Research Assistant

For copies of The Heinz Center's report *Dam Removal: Science and Decision Making*, please visit the website at www.heinzctr.org for a PDF version or email goss@heinzctr.org for a hard copy of the report.

Giving Opportunities at The Heinz Center...

Heinz Center Friends are a special group of supporters interested in leaving a healthy planet to the next generation by advancing sound environmental policies now. In addition to providing much-needed support, the Friends serve as ambassadors for sound environmental policies in their own communities.

Heinz Center Friends include people of diverse backgrounds and occupations who help support the Center's work. Bringing together business, environmental groups, government, and scholars to address the serious environmental challenges we all face is a hallmark of The Heinz Center. Established in 1995, the Heinz Center is dedicated to continuing the groundbreaking environmental work of Senator John Heinz (1938–1991).

Please join us today in carrying on his vision to work together to solve complex environmental challenges.

Our special Friends help spread the word about our work to provide balanced and thoughtful research to improve the scientific and economic foundation for environmental policy. The Friends demonstrate interest and active participation through members-only briefings and seminars by visiting scholars. If you would like to join this dedicated group of supporters, please respond in the envelope provided in this newsletter or contact Anne Hummer, Development Director, at the Heinz Center, (202) 737-6307, or e-mail hummer@heinzctr.org, for more information. All contributions to The Heinz Center are tax-deductible.

Donald Kennedy Addresses Heinz Center Annual Dinner

More than 100 members of the Heinz Center “family”—study participants, Friends of The Heinz Center (see page 9), and scientists and policymakers from government, industry, environmental organizations, and academia—attended the Heinz Center’s annual reception and dinner. The keynote speaker for the event, which was held on November 19, 2003, at the Woodrow Wilson International Center for Scholars, was Donald Kennedy, editor of Science magazine and a former trustee of The Heinz Center. He spoke on “Sustainability: Will Science Get Us There?” See a future issue of Crossroads for an edited version of his talk.



Donald Kennedy is Executive Editor-in-Chief of Science Magazine. He is a biologist by training and his research includes how the natural and social sciences can improve institutions and environmental practices. Kennedy is president emeritus of Stanford University and a former commissioner of the U.S. Food and Drug Administration (FDA).

People

Trustee **William McDonough** received the 2003 Benjamin Botwinick Prize for Ethical Practice in the Professions from Columbia Business School in recognition of his demonstrated leadership in the areas of sustainable development and the environment in business and design. Mr. McDonough is the first architect to receive this prize. The prize is presented yearly to an individual or firm exemplifying the highest standard of professional and ethical conduct. The Botwinick Prize was created to give visibility to ethical decision making among individuals in the professions. Mr. McDonough also recently briefed the Office of Management and Budget at the White House on the Cradle to Cradle industrial strategy, and won the commission to design the new School of International Studies on the main quad of American University in Washington.

Trustee **Shirley Malcom** received the Quality Education for Minorities Network’s 2003 Erich Bloch Distinguished Service Award. The award is given each year to “an individual who has made singular contributions to the advancement of science and to the participation of groups underrepresented in science through policies, programs, and public service.”

In February, **Rita Colwell**, a member of the Sustainable Oceans, Coasts, and Waterways (see page 11), assumed the position of Chairman of Canon U.S. Life Sciences, Inc., upon her retirement as Director of the National Science Foundation. Ms. Cowell was the dinner speaker at the 2002 Heinz Center Annual Dinner.

Jeannette Lindsay Aspden, the Heinz Center’s Corporate Secretary and Director of Communications for more than three years, has resigned her position to return to editorial/publishing consultancy. Ms. Aspden edited and helped launch *The State of the Nation’s Ecosystems*; she also founded and edited Crossroads. Ms. Aspden came to the Center from Carnegie Corporation of New York, where she was Editor for Special Projects.

Anne Hummer, the Heinz Center’s development director, was elected Corporate Secretary by the Center’s Board of Trustees at its March meeting. Before joining the Center in June 2003, Ms. Hummer served as development director for several nonprofit organizations in Washington, DC. At World Wildlife Fund, she was membership director and editor of *FOCUS*, a quarterly membership publication and several nonprofit organizations.

James Good is working as a consultant for the Sustainable Oceans, Coasts and Waterways program Area. Dr. Good previously chaired two Heinz Center studies on Hidden Costs of Coastal Hazards and the study *Innovation by Design*. He is a coastal resource specialist and an academic in the field of coastal and ocean management. He has been a professor at Oregon State University since 1980 serving as Oregon Sea Grant Coastal Resource Extension Specialist and holds a joint appointment in the College of Oceanography. Dr. Good is assisting the staff in developing proposals for new studies and new funding sources for this program area.

New Trustees Join The Heinz Center

Over the past year, five new trustees—Shirley M. Malcom, Jerry M. Melillo, Howard Ris, David J. Refkin, and R. Philip Hanes, Jr.—have joined the Board of The Heinz Center.

Dr. Shirley Malcom heads the Directorate for Education and Human Resources at the American Association for the Advancement of Science. She received the 2003 Public Welfare Medal, the highest award bestowed by the National Academy of Sciences. Dr. Malcom has been active in science technology education and policy at all levels, from the grass roots to presidential panels. She has spearheaded such initiatives as the Black Churches Project; Proyecto Futuro; Kinetic City Mission to Earth, an online science adventure series for after-school programs; and the Bioscience Education Network, a digital library for undergraduate biology education. She has also served President's Committee of Advisers on Science and Technology, among many other committees, panels, and boards.

"I am enthusiastic about working with the other trustees and the staff of the Center to explore new opportunities and new ways of bringing the Center's work to a broader public, said Dr. Malcom. "Improved public understanding of science and technology is vital to improved environmental decision making, and that improved understanding should begin in childhood. The educational possibilities of the Center's work are exciting, and I hope to help the Center realize those possibilities."

Dr. Jerry M. Melillo is in his twenty-sixth year as a research scientist at the Ecosystems Center of the Marine Biological Laboratory in Woods Hole, Massachusetts, and he currently serves as the Center's co-director. His research includes work on climate change, disruption of the global nitrogen cycle, ecological consequences of tropical deforestation, and sustainable management of tropical agro-ecosystems. Dr. Melillo said, "The Heinz Center's philosophy, built on John Heinz's interest in pragmatic solutions to environmental problems, is one that I share. When the invitation came to join the Board of Trustees, I accepted with great enthusiasm. The Heinz Center, through efforts such as the State of the Nation's Ecosystems project, has been effective in building meaningful consensus on the scientific basis for sound environmental policy, and innovative in articulating workable solutions to environmental challenges. I look forward to contributing to the Center's continued success."

Dr. Melillo founded the Marine Biological Laboratory's Semester in Environmental Science, a program that enables undergraduates from liberal arts

colleges and small universities to learn and do environmental science in Woods Hole. He also has a strong interest in science policy, having served as the Associate Director for Environment at the Office of Science and Technology Policy in the Executive Office of the President in 1996 and 1997. Dr. Melillo is president-elect of the Ecological Society of America.

Howard (Bud) Ris recently retired as president of the Union of Concerned Scientists (UCS), where he oversaw all the organization's work on environmental and security issues. According to Mr. Ris, "What's exciting about The Heinz Center is its unique ability to pull together creative minds from the four sectors [government, industry, environmental organizations, and academia] that are so essential to sound policymaking. I'm eager to help the Center maximize the impact of its work."

Mr. Ris led the delegation of U.S. NGOs to the negotiations on the Kyoto Protocol from 1997 to 2001, and he served on the Energy and Transportation Task Force of President Clinton's Council on Sustainable Development. He has been a consultant to state and federal agencies on a wide variety of environmental planning issues, and he is an advisor to the Commonwealth of Massachusetts on its Climate Change Action Plan, a member of the Keystone Center board, a member of the Luce Foundation's Environment Program advisory board, and a member of the advisory board of the Institute of Transportation Studies at the University of California, Davis. Until 2001, he was a director of Ris Paper Co., Inc., one of the largest independent suppliers of fine printing papers in the United States.

David J. Refkin was recently appointed Director, Sustainable Development, of Time Inc.; until his appointment, he had been President of TI Paperco, the paper-purchasing subsidiary of Time Inc. Mr. Refkin is responsible for all environmental and sustainability activities of Time Inc. He is active in the Certified Sustainable Forestry (CSF) Initiative, the goal of which is to dramatically increase the amount of certified paper purchased by TI Paperco. Mr. Refkin was Time Inc.'s representative on the Paper Task Force, a group organized by the Environmental Defense Fund, and was one of the authors of the task force's "Recommendations for Purchasing and Using Environmentally Preferable Paper." Mr. Refkin is a former chairman of the Magazine Publishers of America Paper Committee and of its Environment Committee.

"I am thrilled to become a member of the Board of Trustees of The Heinz Center," Mr. Refkin said. "The



The Heinz Center's new trustees (from left): R. Philip Hanes, Jr., David Refkin, Shirley Malcom, Howard (Bud) Ris, and Jerry Melillo.

mission and goals of the Center closely mirror our efforts at Time Inc. to incorporate environmental performance and leadership into our purchasing model. I look forward to contributing to the unique and innovative approach that The Heinz Center takes to integrating science and economics to help find solutions to challenging environmental issues.”

The latest addition to the Board is **R. Philip Hanes, Jr.**, Owner, River Ridge Land and Cattle Co., LLC, and CEO Emeritus of Hanes Companies. Mr. Hanes said that he is “deeply honored to be elected to the Board of The Heinz Center. I have always believed that the best solutions arise when all involved parties are at the table,

which is why I am so excited about the Heinz Center’s four-sector approach. I hope my experiences with environmental initiatives—specifically sustainable farmland and the conservation of the New River [Virginia]—will be of value in assisting the Center as it helps shape national environmental policy.”

Mr. Hanes brings to The Heinz Center a long and distinguished record of local, regional, and national involvement and pioneering accomplishment in industry, the arts, and the environment. He has served on countless boards and has received many awards and honors. He was appointed by President Johnson to the founding board of the National Endowment for the Arts and by President Ford to the Board of the Kennedy Center for the Performing Arts; he has served on the boards of the National Audubon Society, the Isaak Walton League of America, and the American Land Trust, among many others. Mr. Hanes was a founding board member and vice president of the Southern Appalachian Highlands Conservancy, co-founder of the North Carolina Nature Conservancy, and initiator of the New River (Virginia) Blueway. Besides the National Medal of Arts, presented to him by President George H. W. Bush, and the National Governors Association Award for Distinguished Service to the Arts, Mr. Hanes has received the Gulf Oil and Isaak Walton League of America Conservation Award and the North Carolina and National Wildlife Federation Award for Preservation of Natural Areas; he was also named an Honorary North Carolina Park Ranger.

Heinz Center Program Wins Prestigious Award

The State of the Nation’s Ecosystems (SOTNE) project will accept the 2004 Outstanding Achievement Award from the Renewable Natural Resources Foundation (RNRF) in late October.

Thomas Lovejoy, Heinz Center president, said the award “represents many years of hard work and dedication by staff and volunteers. We are delighted with this honor and look forward to continuing this important work. Robin O’Malley, program director, deserves a lot of credit for his leadership as do all of our committee members and collaborators, who contribute valuable time, expertise, and creativity to make the project a success.”

The award is one of three annual awards (Outstanding Achievement, Sustained Achievement, and Excellence in Journalism). Ron Pulliam, former director of the National Biological Survey, currently at the University of Georgia, nominated the Heinz Center project.

The Outstanding Achievement Award recognizes a project, publication, piece of legislation, or similar concrete accomplishment that occurred during the three years prior

to nomination for the award. (An individual cannot receive this award.) Winners of these awards are selected based on how well they have: 1) Advanced the renewable natural resources sciences and public education; 2) Promoted the application of sound scientific practices in managing and conserving renewable natural resources; or 3) Fostered cooperation among professional, scientific, and education organizations in the renewable resources fields

RNRF is a consortium of 16 professional societies: the Wildlife Society, American Fisheries Society, American Geophysical Union, American Meteorological Society, American Society of Agronomy, American Society of Civil Engineers, American Society of Landscape Architects, American Society of Photogrammetry and Remote Sensing, Soil and Water Conservation Society, American Water Resources Association, Association of American Geographers, Rangeland Society, Humane Society of the US, Society for Environmental Toxicology and Chemistry, University Council on Water Resources, Society for Wood Science and Technology.

Heinz Center Program News

Environmental Reporting

- **Annual Update 2003 Completed.** This first update to *The State of the Nation's Ecosystems* included updated data for 25 indicators and new, first-time data for one indicator (recreation in forests). Updates are Web-only revisions designed to ensure that the report's Web version provides access to the most current data available. This update highlighted the frequency with which monitoring programs change their data collection and analysis methods. While these changes are intended to improve the quality of the data, care must be taken to ensure that the new methods are compatible with previously reported data.
- **Working Group on Non-native Species Indicators Holds Final Meeting.** The Non-native Species Task Group held its fourth and probably final meeting on February 17 and 18. The group is chaired by **Ann Bartuska**, Forest Service Deputy Chief for Research (she moved to this position from The Nature Conservancy in January). A draft report is nearing completion; decisions from the February meeting will be incorporated before peer review.
- **Design Committee Membership Changes.** Recently, two long-time participants in the *State of the Nation's Ecosystems* project left the Design Committee because of changes in job status or responsibilities. **Don Scavia**, formerly Chief Scientist at NOAA's National Ocean Service, left NOAA to join the faculty at the University of Michigan's School of Natural Resources and the Environment. Fortunately, Don will remain connected to the effort—his Dean, **Rosina Bierbaum**, remains a member of the Design Committee, which guides the *State of the Nation's Ecosystems* project. **Rebecca Lent**, Deputy Assistant Administrator for Regulatory Affairs at NOAA Fisheries, will replace Don on the committee. In addition, **Steve Daugherty**, Director of Government Affairs at Pioneer Hi-Bred International, the world's largest producer of agricultural seeds, resigned because of changes in his responsibilities at Pioneer. **Greg Wandrey**, Pioneer's Director of Product Stewardship, will take Steve's place. Both Don and Steve have been members of the Design Committee for many years, and their wise counsel is greatly appreciated.
- **New Corporate Funding Commitments.** The Center gratefully acknowledges recent contributions in support of *The State of the Nation's Ecosystems* from **Exxon Mobil Corporation**, **Chevron Texaco Corporation**, and **Pioneer Hi-Bred International**. Overall, funding for the work leading to the project's second report in 2007 will be

funded half from corporate and foundation sources and half from a consortium of federal agencies.

- **Major Conference Presentations.** *The State of the Nation's Ecosystems* project will have a substantial presence over the coming months at meetings of major professional societies. In March, Center President **Tom Lovejoy** presented a plenary speech at the American Institute for Biological Sciences meeting in Washington, D.C., and **Robin O'Malley** and **Laura Meyerson** led a session on the project's proposed indicators for non-native species (the AIBS meeting focused on non-native species); see page 3 for more detail. In July, Laura Meyerson presented the project's indicators of urban and suburban condition to the annual meeting of the Society for Conservation Biology (SCB) in New York City. This year, SCB is focused on urban areas. In August, Tom Lovejoy and Robin O'Malley joined Heinz Center Trustee **Jerry Melillo** in a session on national-level indicators of ecological condition at the annual meeting of the Ecological Society of America. This major session, organized by Laura Meyerson, included talks by **Geoffrey Heal** (Columbia University), **Gordon Orians** (University of Washington), **Michael Rosenzweig** (University of Arizona), and **Hal Mooney** (Stanford University).

Global Change

- The manuscript on documenting **rapid land-cover and land-use change** globally over the past 20 years has been finished for the Millennium Ecosystem Assessment and been submitted to the scientific literature. This is the first global synthesis of rapid land-cover change, and it will undoubtedly receive a fair amount of attention in the scientific community. The Millennium Ecosystem Assessment has also supported a small workshop at The Heinz Center to prepare a synthesis chapter on global ecosystem conditions and trends.
- The **Forest Carbon Life Cycle** project with Time Warner PaperCo, StoraEnso, CanFor, and The Home Depot has been successfully completed. All the partners have agreed to accept the final report and to indicate their support for it. Two publications are currently being prepared by **Tom Gower** of the University of Wisconsin, one for *Nature* and another for the *Journal of Industrial Ecology*.
- Over the past several months, **Tony Janetos** has been working with a number of federal agencies participating in the Global Earth Observing (GEO) system discussions. This process, launched by the United States at a major international conference at the end of July 2003, has

become the framework within which the United States and over 40 international partners have agreed to coordinate their environmental monitoring activities. The U.S. agencies have formed an interagency group to prepare the U.S. plan for participation in the international GEO. They have asked The Heinz Center to create a four-sector committee to review and improve the U.S. assessment of monitoring needs and systems. The Center will convene these experts at least twice. The Center will also oversee, jointly with the federal participants, the preparation and review of an integration and assessment chapter in the overall interagency GEO process.

- The National Research Council's Committee to Review the Climate Change Science Program's Strategic Plan has released its second, and final, report. **Tony Janetos** has served on this committee for the past 15 months. The final report compliments the federal agencies for a number of improvements over the first version of the strategic plan, but points out a number of areas that require substantial attention during implementation, including the proposed series of synthesis and assessment products. Tony Janetos participated in briefings to the agencies and Congress, and in press conferences that generated significant news coverage.

Sustainable Oceans, Coasts, and Waterways

- **Sharing Innovations in Coastal Zone Management.** This committee held its final meeting in January 2004 in Washington, D.C. NOAA asked The Heinz Center to examine innovation and information-sharing questions in coastal management. It is clear that effective documentation, sharing, and adaptation of best coastal management practices, whether innovative or tried and true, is one essential element in the effort to create more sustainable futures for coastal communities and ecosystems. The final report will be transmitted to NOAA in late April 2004. **James Good**, professor, College of Oceanic and Atmospheric Sciences, Oregon State University, chairs the study.
- A new advisory committee for the Sustainable Oceans, Coasts, and Waterways program area has been appointed; **Stephen Leatherman** of Florida International University chairs the committee. See below for more details.

New Sustainable Oceans, Coasts, and Waterways Advisory Committee

The advisory committee for the Sustainable Oceans, Coasts, and Waterways program area met for the first time on April 9, 2004, in Washington, D.C. The committee assists the staff in developing new studies where the Heinz Center's four-sector approach provides the best way to study particular issues. Stephen Leatherman, Director of the International Hurricane Research Center at Florida International University, will chair the committee. The other members are Mike Bahleda, Electric Power Research Institute; Cabell Brand, Cabell Brand Center for International Resource Studies and a Heinz Center trustee; Virginia Burkett, U.S. Geological Survey; Mike Campana,

University of New Mexico; Rita Colwell, former NSF director and now Chairman, Canon U.S. Life Sciences, Inc.; Mike Connor, San Francisco Estuary Institute; M. Rupert Cutler, Roanoke, Virginia; Susan Cutter, University of South Carolina; Tim Dillingham, American Littoral Society; Peter Douglas, California Coastal Commission; Leo M. Eisel, Brown and Caldwell; David Hart, Philadelphia Academy of Natural Sciences; John Huff, Oceaneering International, Inc.; Ann L. Riley, Waterways Restoration Institute; David Rockefeller, Jr., Cambridge, Massachusetts; Henry Vaux, University of California; and Phyllis Wyeth, Wilmington, Delaware, a Heinz Center trustee.

Board Launches Business Partners

The Heinz Center Board of Trustees recently launched The Heinz Center Business Council on Science and the Environment. This unique group of corporate CEOs will add a new dimension in thinking and collaboration to the Center's activities.

For more information about the Business Council, contact:
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About The Heinz Center

Established in December 1995 to carry on the work of Senator John Heinz (1938-1991), The Heinz Center is a nonpartisan, nonprofit institution dedicated to improving the scientific and economic foundation for environmental policy through multisectoral collaboration. The Center fosters collaboration among industry, environmental organizations, academia, and all levels of government in each of its program areas and projects. It uses scientific and economic analyses to develop viable options to solving problems, and its findings and recommendations are widely disseminated to public and private sector decision makers, the scientific community, and the public. The active involvement of high-level decision makers in government and industry, as well as of leading academic researchers and environmental activists, enables the Center to make a unique contribution to environmental policymaking.

The Center's work currently focuses on three strategic areas: Environmental Reporting; Global Change; and Sustainable Oceans, Coasts, and Waterways.

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