

NCFNEWS

NORTH CENTRAL FOREST EXPERIMENT STATION

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Are Winters Getting Warmer? The Social Side of Global Climate Change

Pundits can debate the details, but long-term residents of the northwoods are calling it as they see it: Winter's getting warmer. Snowpacks are not as deep, lake ice is thinner, and snowmobilers and skiers are not filling the small motels and restaurants the way they once did.

In some northern communities, where winter has replaced summer as the bread-and-butter tourist season, a rise in the mercury means an economic downturn akin to a farmer's drought. Last year, some towns in northern Minnesota asked to be declared disaster areas after winter fests, ice-fishing contests, and ski races had to be cancelled. Some are asking: What if it gets so warm that winter never comes?

These are not idle questions. One of the climate change scenarios that researchers have put forward is that lakes in the Upper Midwest will no longer freeze by the middle of the century. An aquatic system tuned to freezing and thawing would likely be affected, as would an economy dependent on lake-based snow sports and ice fishing. If the Lake Michigan ice shelf never forms, would the waves from winter storms surge into Chicago's waterfront districts?

The impacts of global warming, whatever they may turn out to be, are decidedly social and economic in nature, yet we have spent little time researching how people perceive global climate change and its effects on their lives. According to Richard Birdsey, Program Manager of the Forest Service's Northern Global Change Research Program, we've tended to invest in the biophysical side of global climate change research.

"What we haven't looked at as intensively are the impacts that these changes have on individuals, on communities, and on our regional economy," Birdsey said. "It's time to also look at the social part of this equation."

Roundtable on Social Effects

North Central is a natural nexus for this kind of work, says Pam Jakes, Project Leader of the Human and Economic Dimensions of Ecosystem Management unit. "North Central has the agency's largest core of social scientists working alongside biophysical scientists, including meteorologists," she said. Together, they can create integrated decisionmaking tools to help communities navigate the bumpy yet balmy future. But they can't work in isolation.

"A Midwest-centered view won't give us the diversity we need to understand regional effects," Jakes said. To widen this view, Jakes worked with Birdsey to convene a Social Impacts of Global Climate Change roundtable that included scientists from the Northeastern and North Central Stations. In a working session early this year, the group brainstormed about coordinated research efforts that would include:

- * a network of community studies focused on global change "hotspots"

(continued on page 2)



Would warmer winters mean ice-free lakes?



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- * a media content analysis and focus group survey on decisionmaking in a climate of risk and uncertainty
- * a Delphi study on the role of public lands in the era of carbon offsets
- * a clearinghouse for social information on global climate change.

Global Change “Hot Spots”

The group’s first task will be choosing data-rich study sites. “Just as the FACE program relies on a worldwide network of sites to understand the global picture, we need a network of community studies that represents the region,” Jakes said. The group is especially interested in climate change hot spots. These are areas at the boundary of two ecological types where ecologists expect to see a “changing of the guard” as plants, animals, even microbes, expand and contract their ranges. This mixing is likely to add strain to places that are already experiencing land use change, e.g., where farms are replacing forests or parking lots are replacing wetlands. Climate change and landscape conversion pile two layers of stress on the same spot, making these good places to study ecological and economic impacts.

In their choice of study sites, the team will build on prior work such as the Northeastern Station’s long-term social science site in Baltimore. “It makes sense to find a mirror site in the Midwest where we can make some head-to-head comparisons,” Jakes said. “We’d also like to tie our choice of community to landscape features. For instance, are there differences in the way communities in glaciated vs. nonglaciated areas perceive global change?”

Is Global Change on Our Local Radar?

Closer to home, the team wants to explore how the risk and uncertainty of global change may affect the way people make decisions. Deb Carr, Research Social Scientist with St. Paul’s Human Dimensions unit, would like to conduct focus groups to answer questions including: Do they see a change in climate conditions over the last few years? To what do they attribute this change? How aware are they of global climate change, and how large a force is it in their lives? What role, if any, does it play in their decisionmaking? Finally, do they make the link between their actions and global climate change?

To set context for these observations, NC Research Meteorologist Brian Potter (from NC’s Atmospheric-Ecosystem Interactions and the Social Aspects of Managing Ecosystems unit) will track

climate patterns, and Ecological Economist Dave Bengston (from NC’s Human Dimensions unit) will analyze media content over that same time period (see article on Bengston’s method on page 5).

National Forests as Carbon Sinks

Finally, the group would like to explore the role public lands may play if emission credit trading comes to pass. Players in this potential market may come to value crops and forests as carbon sinks—places to sequester carbon and thereby offset carbon dioxide emissions. In the past, public forests have been valued as reserves for timber and clean water. In the future, might their highest value be their ability to sequester greenhouse gases? If so, what will that mean for the social benefits we currently derive from forests? A Delphi study (a systematic querying of experts) could yield a “state-of-the-thought” white paper on the new role of public lands.

Amplifying the Signal

Ordinary people often perceive change—and take action—long before the pundits catch on. In the case of global climate change, the signal seems to be: Something’s going on with the weather, and if it worsens, it may affect our livelihoods. Right now, conversations about the social fallout of global climate change are taking place individually, in northwoods cafes and city coffee shops. By analyzing these perceptions and placing them in a regional context, the research from this roundtable could seed and inform a larger discussion—a discussion about solutions.



Warmer winters could have a chilling effect on the snow-sports tourism economy.

“With luck, this ‘amplification of the signal’ may motivate people to take that next step,” Jakes said, “to personally act in ways that will reduce greenhouse gases, and to begin to urge policymakers towards change.” For more information about global climate change, see <http://www.fs.fed.us/ne/global/>



BWCA Storm-Recovery Workshop Gathers Force

It's hard to believe that anything positive can come out of the fearsome superstorm that leveled millions of trees in northern Minnesota last July 4. But the force that blew forests apart is actually bringing cooperators together around a very real opportunity: a chance to study how a forest recovers from a massive natural disturbance.

"Our goal was to pool energies and expertise right from the start, so that what we learn from this storm can be broadly applied—across resource areas and across administrative boundaries," said Logan Lee, Supervisor of the Chippewa National Forest and member of the steering committee organizing the storm-recovery effort. Other committee members are Alan Ek, University of Minnesota; Jerry Rose, State of Minnesota; and Forest Service representatives Mike Prouty, Jim Sanders, and Dave Shriner.

Priority-setting for the research and management response began at a workshop on March 14-16 in St. Paul, Minnesota, sponsored by the University of Minnesota, the State of Minnesota, and the USDA Forest Service—the Superior and Chippewa National Forests, the North Central Research Station, and North-eastern Area State and Private Forestry. What follows is a sampler of reactions to the meeting:

Jim Sanders: Forest Supervisor, Superior National Forest

A year ago, I doubt we could have assembled 60 researchers in a room to talk about forest management in Minnesota. But this was a unique event in a unique landscape, and it drew us together. I'm hoping that in 5 to 10 years, members of this group will still be working together, not just on the storm, but on other issues. What we've formed here is a brain trust, a network of researchers and managers who can systematically take a look at a whole host of issues. Our challenge is to continue the momentum we've started.

Logan Lee: Forest Supervisor, Chippewa National Forest

This was the first time I saw different scientific disciplines interact in this way, and it broadened my vision of what research can be.

We were fortunate to have such a diversity of legal authorities in the room. Some of us have access to private landowners, access to public lands, access to research talent, access to different funding sources, and access to various management tools. Together, we can really take a landscape view.

Alan Ek: Head of the Department of Forest Resources at the University of Minnesota

The meeting excelled in bringing together researchers from Federal, State, and university environments—folks who see each other occasionally but don't always have a chance to work on a common project.

What's most interesting to me about this storm is not the disturbance per se. Natural disturbances in the Upper Midwest are actually quite common. We drive by the sites of large-scale disturbance all the time, but more often than not, salvage operations have hidden the effects from view. In this case, we'll see the storm aftermath in two different settings—managed and unmanaged. In that zone of comparison—that's where the interesting research questions will be answered.

Rick Hokans: Analyst, Land Management Planning Group, FS Northern Region

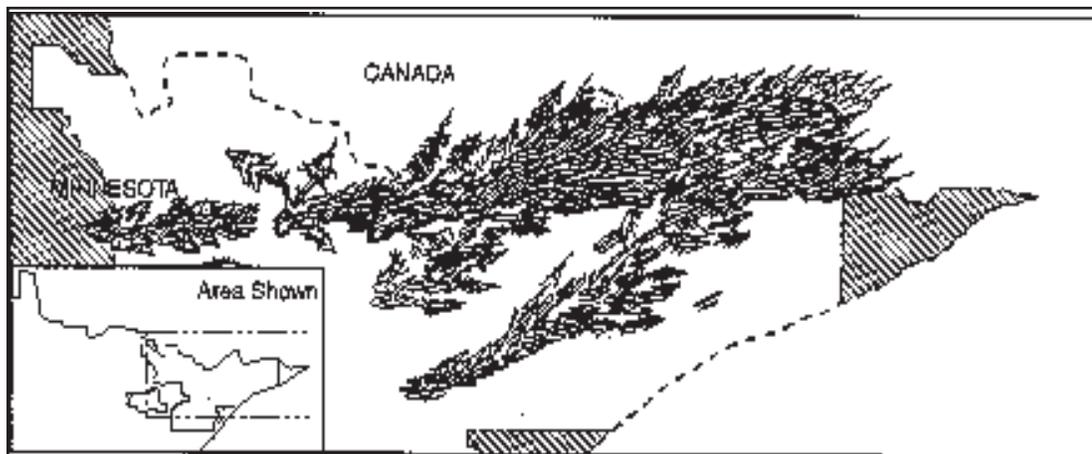
The meeting was a remarkable show of cooperative spirit between the National Forest System and Research. Our managers appreciated the chance to tap directly into researchers for short-term information—data we need to do our environmental impact statements today. Secondly, we got a chance to help set direction for long-term research. We were able to say, "Here's the knowledge and decision support we need to adequately respond to extreme events."

John Dwyer: Project Leader, NC's Urban Forestry Unit, Chicago

I just kept thinking what a profound learning experience this will be for the public. Already, permit applications for BWCA travel are up this year, not down. I would guess that people's fascination with the spectacle of recovery is a part of that. Look at how

many people flocked to see the greening of Yellowstone and Mount St. Helens! Millions of people love the Boundary Waters, and they'll no doubt be curious too. That makes this a teachable moment, and if we do it right, the teaching can go both ways—from us to the public and from the public to us.

For more information, contact Bill Mattson, Storm Recovery Research Coordinator from Forest Service Research, at 715-362-1174.



On July 4, 1999, straight line winds damaged nearly 500,000 acres on the Superior National Forest (shown here). The superstorm also inflicted substantial water damage to lake shores and roads on the Chippewa National Forest, located in north-central Minnesota.

Getting to Know Deb Dietzman, NC's New Director of Communications

Deb Dietzman, the new Director of Communications at NC, spent a few moments recently talking about somebody pretty new: herself. In her Forest Service career journey from the Arapaho-Roosevelt National Forest to the Ottawa National Forest to the Forest Products Laboratory to here, Deb's mostly been asking the questions in interviews rather than answering them. But she caught on quickly to the new role.

What would you like people to know about you?

Instead of doing this interview, let's just have people come in and talk to me," she laughed. "I'm accessible. I like to talk to people and hear their ideas and concerns. Research Information is not the sole repository of good ideas about communication, so please stop in, call, or e-mail me. I'm also looking for opportunities to visit our field offices, perhaps in conjunction with other events that may be happening there. Last fall, my visit to NC's Chicago unit gave me a real feel for the relevance and importance of our social science work.

What brought you to North Central?

Technology is interesting, but natural resources excite my heart. I'm challenged by our work in making science relevant to natural resource decisions, and I'm particularly interested in the human impacts: how people affect the world and vice versa. It's exciting to work with the Station's new integrated research programs that are on the cutting edge of science. And, quite simply, I like change. After 12 years at the Forest Products Lab, it was time for a new challenge.

What does a Communications Director do?

RI works on many communication tools such as press releases and newsletters, but it's my job to look at the big picture of communications at North Central. What image of the Station do we want to convey? I'm spending much of my time now on three major communications products: finding just the right words and right look for the Station's strategic plan, developing a new logo, and bringing our website up to expectations. All three are designed to show NC as the exciting, vibrant, relevant organization it is. A sleek new look, combined with good information about the Station's work and people, will help attract prospective partners, partners who can provide support for NC researchers doing good science. I'm also working on expanding our outreach by increasing NC's mailing lists and legislative contacts. In these tight times, we need to maximize the impact of the resources we commit to organizational communications.

What's your philosophy of communication?

I have a simple one: communication is everybody's business. We all need to reach out and tell others what we do and why it matters.

Tell me one thing that most of us don't know about you.

After I earned my bachelor's degree in journalism/environmental sciences from Iowa State, I joined the staff of the Cherokee (Iowa) Daily Times as a political reporter. It was exciting work, especially in an election year. I remember



interviewing the Governor of Iowa in the back of a car on the way from a football game to a fundraiser because that was the only time he had. My time at the paper helped me develop a priceless skill: being able to write on deadline about anything.

Fill in some blanks about Deb the person.

My husband Gordon is a freelance photographer and an environmental educator. We have a golden retriever named Dakota (come in and see his picture). Since we moved here in November, we've been spending much of our free time remodeling an older home near a Roseville park with lots of trees. What I'm really looking forward to, though, is being outside, working in the yard and flowerbeds. And, let's see: I don't really have a hometown because my dad was a Methodist minister in Iowa and we moved every 4 or 5 years. I call Iowa my home State, and Gordon's from a dairy farm in southwestern Wisconsin. So, NC feels like home, a good place to be.

Contributed by Lucy Burde

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The Evolution of Public Opinion about Forest Roads

Today's town meeting may not be in a physical building, says Dave Bengston, Research Social Scientist with NC's Social and Economic Dimensions of Ecosystem Management unit. The new dialogue is occurring in the virtual space of mass media, in everything we read, hear, watch, download, or respond to.

Bengston and University of Minnesota colleague David Fan have found a way to listen in on this media discussion, thereby measuring public attitudes, beliefs, and underlying values about natural resources. Computerized media analysis, pioneered by Fan, combines the power of a computer with the discerning eye of a researcher to analyze thousands of archived news articles.

The InfoTrend software combs large databases of articles, tracking positive and negative views, how frequently a belief is expressed, which region of the country is represented, and so on. Plotting these results over time yields a detailed "EKG" of the debate—showing exactly when an issue flared up, or when certain aspects of a debate took center stage.

But is it an accurate picture of what people think? "Comparisons between media analysis and surveys have repeatedly shown remarkable similarities," Bengston said. Doris Celarier, Public Involvement Coordinator in the FS Washington Office agrees: "The Bengston-Fan approach mirrors what we find with traditional polls, but does so in a fraction of the time and budget."

The technique proved itself when the Forest Service National Roads Committee asked Bengston and Fan to find out what America was thinking about the 380,000 miles of national forest roads. Their award-winning analysis "provided fundamental information for Forest Service roads policy reform" wrote Committee Head Tom Mills.

Which Side of the Road are You On?

Bengston and Fan analyzed 4,000 online news media stories from 78 newspapers and newswires from 1994 to 1997. Eight main views of roads on the national forests emerged (see diagram below):

Recreational uses of national forest roads were discussed most often, followed by the ecological costs of roads, subsidy cost, commodity benefit, local benefits, roadless recreation, ecological benefits of roadless areas, and fire protection.

An interesting spike occurred in media discussions in the third quarter of 1997, when Congress was debating a bill that would cut spending for Forest Service roads. This time, subsidy costs of roads were expressed most frequently, followed by recreational uses, commodity benefits, and ecological costs.

"Fiscal conservatives and environmentalists were on the same side of the issue," Bengston said. "Both pointed to the subsidy costs of roads as a reason more taxpayer dollars shouldn't be spent on national forest roads." When the team updated their study following Chief

Dombeck's 1998 moratorium on road-building, the discussion shifted again, turning to the recreational and ecological values of roadless areas.

Roads Can Be Barriers or Bridges

Bengston and Fan close their report with some fly-over observations from the media study, including "two dilemmas that any forest road policy must address." The first is a potential conflict between those who favor roads for the recreational access they provide, and those who are against roads because of the ecological impacts they cause. "Most everyone who recreates uses roads to get where they are going, but once they arrive, roads can either ruin the experience or make it possible," Bengston said. The team suspects that the new line in the sand will be between motorized and non-motorized recreation.

Although issues change, the one constant for natural resource managers seems to be a need to "hear all the voices" in our pluralistic society. That's why, in addition to helping managers monitor flows of nutrients, energy, and water through ecosystems, research is looking for scientific ways to sample the flow of public opinion. "If managers can peer into the media debate often enough and easily enough, they're more likely to sense brewing controversy or a change in public opinion," Bengston said. "It's what Mike Dombeck calls 'looking beyond the headlights.'"

For more information about Bengston and Fan's illuminating efforts (including a new study on recreation fee management), contact Bengston at dbengston@fs.fed.us or at (651) 649-5162.

Attitudes	Favorable Attitude Toward Roads on National Forests				Unfavorable Attitude Toward Roads on National Forests			
	Beliefs	Recreational Use & Access: Roads provide access for recreational uses, including people with disabilities & senior citizens	Commodity-Related Benefits: Roads make possible production of commodities that society needs	Local Community Benefits: Roads generate benefits to local communities	Fire Protection: Roads provide access for fire protection & forest management activities	Subsidy Costs: Road building is a taxpayer financed subsidy to the timber industry	Ecological Costs: Roads cause ecological damage such as erosion & habitat destruction	Ecological Benefits of Roadless Areas: Roadless areas provide ecological benefits such as clean water & wildlife habitat
Values	Economic/Utilitarian Values				Ecological Values			Economic, Aesthetic, Moral/Spiritual Values

For Frogs' Sake: Linking Research to Conservation Efforts

Did you know that there are an estimated 4,300 to 4,500 amphibian species worldwide? And did you know that the earliest known frog appeared about 190 million years ago, and that turtles date back to the Triassic Period, some 200 million years ago?

These are just a few of the fascinating facts I recently learned from Laura Herbeck, Wildlife Technician with NC's Central Hardwood Silviculture and Ecology unit in Columbia, Missouri. Herbeck is co-chair of the national research group and the Midwest Regional Working Group of *Partners in Amphibian and Reptile Conservation* (PARC). PARC, established in 1998, is a multi-sector conservation partnership whose mission is to conserve amphibians, reptiles, and their habitats as integral parts of our ecosystem and culture through proactive and coordinated public/private partnerships.



The future of frogs like this one is in good hands, says Laura Herbeck, thanks to research-conservation partnerships.

Despite their long and important role in our heritage, populations of amphibians and reptiles—otherwise known as herpetofauna—have declined significantly throughout the world in recent years. The reason? “Habitat loss, environmental pollution, global climate change, disease, parasites, unsustainable use, and invasive species are primarily responsible for the declines,” Herbeck said.

It's In There: Getting Research into Management Plans

“One of the strengths of PARC is the group's potential to increase communication and cooperation among many diverse groups interested in amphibian and reptile conservation,” said Herbeck.

“For conservation efforts to be successful, results from research need to be incorporated into management plans. PARC provides a setting for continued communication and transfer of information among its participants.”

Herbeck has quickly become an integral part of advancing PARC's mission. Dr. Whit Gibbons, Professor of Ecology at the University of Georgia and one of the founders of PARC, has a high regard for her work with the organization. “Laura Herbeck has been a strong and effective contributor to the efforts of the Midwest group and to PARC at a national level,” Gibbons said. “My assessment is that if all regional working groups can become as organized as the Midwest, and have people like Laura involved in the process, PARC will be able to accomplish its goals and meet all priorities on a national and global scale.”

Making a Comeback

Herbeck's involvement with PARC is closely linked to her work with North Central's Central Hardwood Silviculture and Ecology unit in Columbia, Missouri.

“Amphibians and reptiles are key players in wetland and terrestrial environments—they serve as predators and prey, nutrient cyclers, seeds transporters, and more,” explained Herbeck. “Viable populations of herpetofauna are necessary for maintaining biological diversity within Central Hardwood Forests.”

Project Leader Frank Thompson views Herbeck's work with PARC as a tremendous benefit, both to North Central and to conservation in general. “It's important for researchers to be part of conservation efforts such as PARC because it results in two-way communication between researchers and land managers and planners,” said Thompson. “We get first-hand knowledge of the challenges of conservation and can help see that our research is used in the best way possible. Based on my experiences with the Partners in Flight Program—which PARC is modeled after—it is also highly rewarding to see your research contribute to conservation efforts.”

Conservation efforts like these have been paying off. Three decades ago, crocodilian species were on the verge of extinction due to habitat loss and overexploitation. Today, due to years of protection and sustainable use, some populations have recovered dramatically. Thanks to the work of Laura Herbeck and PARC, there may be many more such successes for herpetofauna in the future.

For more information about PARC, visit its website at: <http://www.parcplace.org/>

Contributed by Laura Hutchinson

