

NC NEWS

NORTH CENTRAL FOREST EXPERIMENT STATION

January 1999

In the News

A New Year's Message

A Year in Science

From Corn to Acorns

*Important New Owl
Publication*

Happy New Year!

To Station Employees, Clients, and Cooperators:

1998 was a year of new beginnings, new directions, and renewed friendships. After several years of holding steady through turbulent times, North Central is moving again. Today, we are pursuing a course that we charted together with our clients and cooperators. It's a new course for us in many ways.

New Beginnings: The Leadership Team

Our organizational chart has new faces, and is far richer, thanks to the addition of two new assistant directors: Dave Shriner and Nancy Lorimer. For those of you who don't know them yet, you will. They are committed to working hand-in-glove with Station scientists and with collaborators.

I am finding them a pleasure to work with. They bring to the table an invaluable set of experiences from outside the Forest Service. Dave was a leader at the Oak Ridge National Laboratory, and Nancy built two successful businesses before rejoining NC. Their perspectives keep us fresh—they question how and why we are doing what we do, and more important, they suggest ways we might improve.

Reluctantly, we said good-bye to Assistant Director Dave Lothner this January. He will be sorely missed, for his wisdom, his deep knowledge of the Agency and its people, and his considerable personal warmth. We'll be watching him in his new beginning—a vibrant post-NC life!

New Directions: Integrated Programs

As you know, resource conditions in our region are in the midst of a historic change, and so is our client profile. Increasingly, decisions about natural resources are made by policymakers, many of whom don't have a background in natural resource management. Consider the

county commissioner who must vote on whether to replace forest land with additional housing. Or the governor who must decide

whether to invite a chip mill to the State. Or the sanitarian who must lobby for a tax increase to protect a town watershed. These decisionmakers are being asked to allocate precious resources, and the consequences of their decisions will reverberate for years to come.

I believe North Central can and should help these decisionmakers make their choices in an informed manner. For that reason, we have to make sure that our research is policy-relevant. We did some soul-searching in this direction during a strategic planning process last year. We examined the issues facing our clients, asked what kind of research questions would be most valuable to them, and then identified integrated programs to help answer those questions. As a result, three highly collaborative programs—Riparian Ecosystems, Forest Productivity, and Midwestern Landscapes in Transition—will be launched in 1999.

To complement these ongoing studies, we'll continue to conduct policy-relevant research in real time. We'll provide input to regional and statewide assessments, as well as information to guide industry choices and best management practices. These efforts will bring us closer to understanding the pressing needs of our clients,



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both traditional forest managers, and policymakers at every scale of government.

Renewed Friendships: Client Outreach

In 1998, we began a round of personal visits to renew friendships with forest industry and the university community. We also signed a major memorandum of understanding concerning gathering rights with the Chippewa Tribes in the Lake States. We'll work closer with these groups this year, forge stronger ties with State Foresters, and as I said, get to know decisionmakers at all levels.

One commitment I want to make to you is that our research, while being of the highest quality, will also be accessible and useful to you. That means that we have to think of new ways to present our work. Publications are appropriate for some clients, but not all. We need to start shaping our information into *tools* that clients can use to understand their local situations. I encourage NC employees to innovate in '99—break the mold and show us what can be done!

It feels good to have the wind in our faces again. As we gather speed this year, we'll all have to manage a dwindling natural resource—our time. I invite you to brainstorm with me about how we can balance our obligations, so that we can remain creative, productive, and most of all, healthy. I am honored to be journeying with you, and look forward to another adventurous year.

Best Wishes,

Linda Donoghue

NC's Science Year in Review

Once again, our scientific team had a great season, in no small part due to the tremendous support of our staff, our cooperators, and our customers. Hopefully, this tally will give you a sense of what it's like to be involved in the creative, competitive endeavor known as modern science.

North Central 1998 Activities

- 104 Publications in refereed journals.
- 194 Non-refereed publications (e.g., General Technical Reports, Research Papers, Resource Bulletins, Research Notes).
- 43 Leadership posts held in scientific societies.
- 91 Invited presentations before scientific societies.
- 58 Invited presentations before lay organizations.
- 49 Tours given to educational and professional groups.
- 168 Short courses/training sessions given to educational or professional groups.
- 199 Video and/or slide presentations made on research findings.
- 8.5% Portion of total FIA plots surveyed.

People on the Move . . .

Congratulations!

David Frazier, *St. Paul*, was promoted.

Pam Jakes and **Kate Weinke**, *St. Paul*, received awards for their outstanding coordination and leadership during the Station's Combined Federal Campaign.

Ronald Zalesny, *Rhineland*, received an award in appreciation for his dedication in developing a reference guide for the Farm and Ranch Safety Management Book.

Sharon Hobrila, *East Lansing*, received an award for her extra effort in implementing and maintaining the Great Lakes Ecological Assessment Internet Web Site.

Dale Weigel, *Bedford*, received an award from the Hoosier National Forest for advising and assisting in the technical setup and training for the Purchase Card Management System for the forest.

Denise Wolvin, *Rhineland*, received an award for extraordinary contributions to the Landscape Ecology Unit.

Richard Sindt, *St. Paul*, received an award for his extra effort in the startup of the Eastern Safety Enterprise Zone and significant strides in the Hazardous Waste Programs for both the North Central and Northeastern Stations.

Nancy Freeman, *St. Paul*, received an award for her extra effort in the design and project management for the fourth-floor remodeling of the Executive Area and the first floor conference room.

Moving on...

Julia Byrd, *St. Paul*, resigned.



After The Floods Come the Forests

When the floodwaters of 1993 retreated from the banks of the Missouri River, they left ruined crops and scoured soils. Thousands of acres were bought by governmental agencies—the Missouri Department of Conservation (MDC), Forest Service, and others—who had a different vision for the land.

“We’d like to see bottomland forests growing where they once did,” said Ken Dalrymple, a wildlife management biologist with MDC. They are especially interested in so-called “hard mast” trees such as oaks that provide acorns for wildlife, and recreational and economic opportunities for humans.

There’s one problem, however. “When you let nature run its course,” says Dan Dey, research forester with the Central Hardwoods Silviculture and Ecology unit in Columbia, “you don’t get hard mast species right away. You get a forest of willows, cottonwoods, and other species that are not so high in wildlife or economic value. So how do we bypass the initial stages of succession and go directly to a hard mast forest?”

The obvious answer—planting—is not a surefire bet. As Dey explained, “Conventional bare root seedlings suffer transplant shock and get off to a slow start the first year. Faster growing species like willow and cottonwood easily outcompete them.” To even the playing field, Dey decided to investigate alternate regeneration techniques.

Air-pruning and Early Fruiting

For 17 years, Wayne Lovelace, general manager of the Forrest Keeling Nursery in Elsberry, Missouri, has been perfecting a regeneration technique he hopes will “bring back the hardwoods.” It’s called the root production method, or RPM. RPM stock is grown in an open-bottom container so that roots are air-pruned. A

dense fibrous rootball forms, helping RPM’s shoot up 3-5 feet in their first year. This helps raise the trees above browsing deer, floodwaters, and competitors for sunlight, yielding a near 100 percent survivorship.

“Even more exciting,” said Lovelace, “is the fact that RPM trees are early fruiterers. Instead of taking 25 years to produce



Missouri croplands covered with sand by the ‘92-’93 floods are being replanted with acorn-producing trees. NC researcher Dan Dey is putting alternative planting techniques to the test.

acorns, the white swamp oaks grown with RPM are fruiting in their fourth year. That means more wildlife food earlier, and a better chance that the trees can reproduce themselves.”

Other cultivation methods tried by Lovelace and MDC include planting the trees on raised mounds to help drain and mix the soil, covering the mounds with fiber mats, and sowing red-top grass as a cover crop. These techniques had not been scientifically tested, until now.

With funding from an EPA grant administered by the University of Missouri School of Natural Resources (UM), Dey and his cooperators from NC, UM, and MDC will plant six 40-acre plots on the Missouri River near Jefferson City. The treatments will include: bare root vs. RPM seedlings, natural soil vs. mounded, a cover crop of red-top grass vs. no cover crop, and a control plot of natural succession. “By considering the variables one at

a time and in combination, we hope to see what is contributing to regeneration success or failure,” Dey said.

Results from this study will benefit anyone looking to establish bottomland forests, says Dey—duck hunting clubs, The Nature Conservancy, the Shawnee National Forest, and others. Wayne Lovelace hopes the unbiased report will help his customers understand why RPM seedlings cost more. Ken Dalrymple hopes the studies will “help managers make the most of their cultivation investment.”

More Disciplines, More Answers

The potential values extend beyond super trees however. Dey will monitor the growth of all vegetation, from ground to canopy. Research biologists Frank Thompson and Dirk Burhans from NC’s Columbia unit will work with Brian Root of MDC to monitor breeding bird success and songbird use. Forest ecologist John Kabrick of MDC will monitor soil conditions in mounded and unmounded treatments and relate this to seedling performance and succession.

Meanwhile, forest economists John Dwyer from the University of Missouri and Tom Treiman from MDC will conduct a cost/benefit analysis of the various regeneration techniques. They will also survey bottomland owners about their willingness to plant hardwoods.

For Dey, the study brings personal satisfaction. “It’s not every day you get to build a forest ecosystem from scratch,” he said. “Even though the evidence is gone, we know hard mast trees were in this bottomland before. What was it that favored oaks, and what management practices can we use to favor them again?” For a region that has lost so much of its native hardwood floodplain forests, answering these questions could bring a flood of relief.

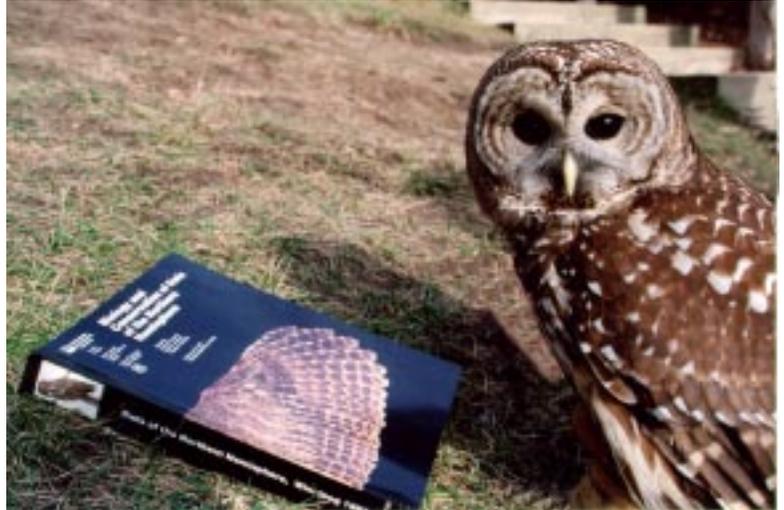
Owl Symposium Proceedings to Play Important Role in Owl Conservation and Management Efforts

A state-of-the-art proceedings, containing the most noteworthy owl research done in the Northern Hemisphere during the past 10 years, has been published by the North Central Research Station. The 635-page proceedings features 91 papers written by 143 people from 13 countries and covers 33 owl species as well as general topics such as owl habitat, migration, and physiology. This collection of the best current wisdom on owls will help decisionmakers, policymakers, and others care for these mysterious and awe-inspiring birds.

The proceedings—a joint effort by the Station, the Washington Department of Fish and Wildlife, the Manitoba Department of Natural Resources, and 36 other sponsors—is the product of the Second International Symposium on Biology and Conservation of Owls of the Northern Hemisphere, held in Winnipeg, Manitoba, in 1997.

Some key findings:

- Owl populations remained fairly stable for thousands of years—until the 20th century when the human factor came into play. And it is the human factor that causes many problems for owls and that will ultimately determine how, and if, we will be successful in conserving owls.
- Habitat loss caused by land management practices and the building of new houses, malls, and streets continues to have a detrimental impact on many owl species. Habitat preservation is the single most important action we can take to help owls and other wildlife.
- The burrowing owl is a model sentinel species of the health of the midwestern and western grassland ecosystems, and the news coming from this sentinel is not good. This owl, endangered in Canada and of concern elsewhere, is fighting for its survival against severe habitat loss of mixed-grass prairies, loss of prairie dog burrows where it nests, high mortality from vehicles, and pesticides.



Don Breneman

Several NC people played crucial roles in publishing the symposium proceedings. Tom Nicholls, retired NC project leader and wildlife biologist, edited the work along with co-editors Jim Duncan of the Manitoba Department of Natural Resources and Dave Johnson of the Washington Department of Fish and Wildlife. Nicholls worked closely with NC printing specialist Mary Peterson and editorial assistant Barb Winters to get the proceedings into print.

To celebrate the release of the new publication, a reception attended by both humans and several species of owls was held December 15 at the Raptor Center on the University of Minnesota-St. Paul campus. Copies of the proceedings (General Technical Report NC-190) are available from the North Central Station Distribution Center, One Gifford Pinchot Drive, Madison, WI 53705-2398, phone: 608-231-9248. The supply is very limited. For those who need a full set of the scientific papers for their work, single copy requests will be filled on a first-come, first-served basis. For those interested in particular papers or owl species, the proceedings is available on the Internet at NC's web site at www.ncfes.umn.edu

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