

To Burn or Not to Burn: Still a Question

Research on mixed pine forests at Seney National Wildlife Refuge may well alter the way prescribed fires are used on the refuge to bring back natural red and white pine forests to of Michigan's Upper Peninsula. Over some years, prescribed fire on the refuge succeeded in decreasing the number of jack pines, but did not enhance the emergence of the red and white pines. Why?

That question led Seney's Forester Greg Corace to theorize that fire may be consuming just what red and white pines need in the soil to thrive. Now, working with Ohio State University scientists Charles Goebel and David Hix, Corace is in the midst of a multiyear research project that has brought a post-doctoral scientist to study forests unlike any he had seen in his native Russia.

The research, expected to be complete in winter 2008, will have direct management applicability. Joint Fire Sciences, a consortium of federal agencies interested in fire research, provided \$300,000 for the research.

Over the past several decades, extensive logging, catastrophic wildfires and fire suppression changed the refuge's forest composition. Today, forests of large-diameter red and white pine are not as prevalent as they once were, although they are essential for some species that are in decline, such as the red crossbill.

Re-establishing the natural red and white pine forests will help fulfill the U.S. Fish and Wildlife Service policy of restoring "lost or severely degraded elements of integrity, diversity and environmental health at the refuge scale." Seney Refuge was established in 1935 to protect migratory birds and other wildlife. Of the 230 bird species at Seney Refuge, approximately half breed, stopover or winter in forest habitat.

When Fire Isn't the Answer

It would seem simple just to remove the existing jack pines and allow natural

re-seeding of red and white pine. Yet, when Seney used prescribed fires in the past to eliminate the jack pines, the red and white pines did not appear to benefit. They did when other timber management techniques – cutting the jack pines and scarifying the duff layer – were employed.

"We are finding some areas where fires, especially very hot slash fires, burned off the organic layer of soil," explains Corace. "Seedlings have failed in part because the soil can't hold water." Yet, prescribed fire appeared to work as a maintenance technique once the red and white pines emerged and have grown to a size sufficient to deal with fire. The research will test this and many more hypotheses.

Fieldwork will primarily be the responsibility of Igor Drobyshev, a post-doctoral fellow at Ohio State University.

Drobyshev has been working with two students in master's programs and two interns paid by the Seney Natural History Association, Seney's Friends organization, who are collecting data before the Upper Peninsula's snow season hits. The data include tree age and an examination of growth patterns, as well as detailed inventories of samples of soil, woody debris and vegetation.

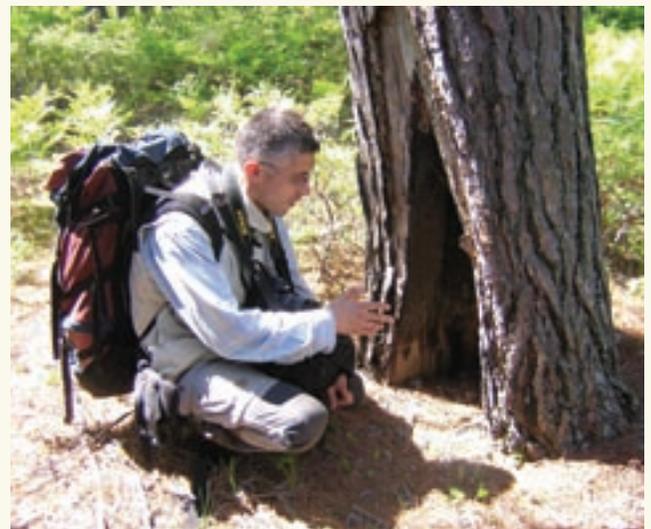
The data will be evaluated before more collection begins again next spring. In total, 80 sites on Seney Refuge will be combed for information.

For now, some fascinating questions are being examined right in the field. Over the summer, for example, scientists began burning through some pine stands to measure the intensity of fire and its effect on different tree species by size.

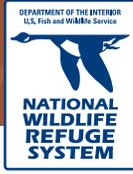
Drobyshev has been fascinated by both the forests themselves as well as the American management of forested land. He has been especially interested in the layers of land ownership, the concept of federally protected wilderness, and limitations on what can be done on such land.

Eventually, the collected data – including information assembled from inventories on lands owned by The Nature Conservancy – will be fed into a decision-aiding model for fire risk management. That model is being developed by Joe Arvai of Michigan State University, and is expected to be ready by winter 2008.

"The research is trying to identify what is good forest management. In some ways, it is trying to prove – or disprove – what my eyes tell me," said Corace. ♦



Extensive logging, catastrophic wildfires and fire suppression have changed the forest composition over the years at Seney National Wildlife Refuge in the Upper Peninsula of Michigan. Research is underway to restore red and white pine habitat on the refuge. (Greg Corace/USFWS)



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Feral cats threaten birds on national wildlife refuges.



Wildlife-dependent recreation is one of the three new policies announced by Interior Secretary Dirk Kempthorne. More than 270 national wildlife refuges offer fishing programs, while more than 300 hunting programs are offered. Environmental education and interpretive program are offered even more widely. (USFWS)



"Nature is often overlooked as a healing balm for the emotional hardships in a child's life. You'll likely never see a slick commercial for nature therapy . . ."

—*Last Child in the Woods*
by Richard Louv

Interior Secretary Dirk Kempthorne announced three new policies that define the unique wildlife conservation mission of the National Wildlife Refuge System and will help refuge managers enhance opportunities for people to participate in wildlife-dependent recreation. The new policies are: mission and goals and purposes; wildlife-dependent recreation; and appropriate uses.

"In an age when the rapid spread of technology and changing land uses make the connection to nature seem out of reach to many Americans," said Secretary Kempthorne, "these policies

will help ensure our national wildlife refuges continue to be places where wildlife thrives and where recreational and educational activities that depend upon wildlife get the top priority." He announced the three policies in a televised broadcast during the annual June meeting of the Outdoor Writers Association of America.

Effective as of July 26, the policies were developed in close coordination with state fish and wildlife agencies. They were first published in draft form in 2001.

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