



Annual Report 2002

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The year behind...

The past year was a good one for the School Forests on all fronts: management, education, research and extension.

In 2002 nearly 670 MBF was marked for sale. Nearly 350 MBF across 70 acres was in regeneration treatments, the remaining volume was in thinnings across 190 acres. Income generated from timber revenues amounted to \$140,000, which more or less equaled our spending on student stipends and salaries (\$34,000), taxes (\$34,000), road and timber contracts (\$55,000), and building maintenance and improvements (\$14,000).

New stand maps for the Curtis and French divisions of Yale-Myers were completed and digitized as part of the development of an integrated GIS-forest information database. We have begun to raise money for a \$500,000 initiative to renovate the buildings at the School Forests. The Morse, Toumey, and French houses are to be restored or repaired and we plan to construct a new dormitory, new bath house, and a second research laboratory at Yale-Myers Forest. Architectural plans for the camp building renovations are currently being developed. For the camp buildings we plan to have a large kitchen with an adjacent dining and drawing room, to add dedicated space for computer use and study, and to include new living quarters. The building will be fully functional for the spring, summer and fall seasons. This up-to-date facility will help accommodate the growing

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Maintaining Wildlife Habitat: A burning issue at Yale-Myers Forest!

With the destructive fires out West, the role of burning (whether prescribed or accidental) in forest management was a hot topic last year. At the School Forests, fire has been part of our management toolbox for nearly 10 years and is gaining a higher profile (see *Environment Yale*, Fall 2002). Fire has been traditionally used by many different cultures around the world to help manage land for particular uses. In recent years the scientific community has come to understand the importance of burning frequency in maintaining different types of plant communities.

At the Yale-Myers Forest, prescribed burns are conducted periodically in a small area of the French division. The goals of burning are to provide students an opportunity to learn about the use of fire in forest management, to promote structural heterogeneity within the forest and to create early-seral habitat, which is critical for many wildlife

species. Maintaining areas of such habitat is increasingly important given the change in land-use patterns over the course of the last century.

In April 2002, students from Dr. Ann Camp's fire ecology course conducted a prescribed burn of a two-acre meadow. Students participated in all aspects of the burn, from laying control lines and lighting fires to mop-up duties. The fire went off without incident due, in part, to the efforts of Kelly Droege (MF '02) and Phil Rigdon (MF '02), both of whom have experience in fighting fires in the western U.S. On the agenda for 2003 is the burning of an oak-savannah that is adjacent to the meadow.

In the longer term, doctoral student David Ellum (MF '01) and Ann Camp are working with the state's Department of Environmental Protection to develop a five-year fire plan that will provide more regularity in the burning cycle and the potential for fall burns.



Ian Branson (MF '03) fires up a burn in order to maintain a wildlife meadow.

Credit: Ann Camp

research and educational needs of the School Forests while reducing the amount of traffic in and out of the Morse House. We plan to make both the Morse and Toumey houses fit for all-season use.

This year we saw the initiation of the Apprentice Forester Program. This program has evolved from the summer crew to include a full-fledged three-month intensive field-based program on forest stewardship under the direct guidance of the forest manager and myself. At the end of the summer, certificates of completion were given to the six Master of Forestry students who served on the crew (see page 4). Other educational activities at the Forests included the usual suite of class field-trips: silviculture, stand dynamics, and forest operations. And, of course, the last three weeks of August saw Yale-Myers inundated by “modsters”, who gave another set of rave reviews to the annual summer training modules held at the forest.

We conducted another successful burn last year in the Red Front Lot, but this time it was integrated with Ann Camp's fire ecology and management

seminar. And, given the vagaries of spring in New England, we are now using a multi-year burn plan to ensure our management goals are met from year to year (see lead article).

Research continues to be a central part of the School Forests' activities. We currently have over 29 active research projects that involve four FES faculty, two post-docs, ten doctoral students, six masters students, and two Yale undergraduates. We also have several non-Yale faculty and students working on projects. Last year we adopted a formal application and committee review process for all research to be conducted at the School Forests. As always, research spans a range of topics, including silviculture and forest ecology, wildlife community ecology, aquatic ecology, landscape ecology, forest history and archeology.

Extension efforts are expanding, as well. Last year we offered guided tours of the Tree Heaven Trail (our first-to-be-revitalized demonstration area) to local community landowner groups, and FES alumni. Work began on the Red Front Lot demonstration area and we kicked off our first annual series of

summer seminars presenting the results of research at the Forests to the public (see page 4).

The year ahead...

This year mapping efforts at Yale-Myers will continue with work on the Plusnin division and development of a related forest inventory database. Improvements to facilities will finally get underway and the Apprentice Forester Program will be continued.

We also intend to undertake a few new things this coming year. The first ever “BioBlitz” will hit Yale-Myers in June (see page 4) and work will begin on the Kozey Road demonstration area. We have initiated collaboration with the Nature Conservancy on projects in and around the Yale-Myers Forest. In the future the Nature Conservancy will work with us on our existing burning program and summer seminar series. Another part of this partnership will include encouraging our faculty and students to help develop management plans for lands within the Nature Conservancy's Quinnebaug Highlands Project, which includes Yale-Myers. As you can see, another full plate!

Power struggle at Morse House nearing an end

What happens when you run three refrigerators while trying to warm oatmeal in a microwave and toast four slices of bread — all on the same circuit? And start the dishwasher? At the Morse House, this daily series of breakfast events usually precedes a rock-paper-scissors game to see who has to reset the circuit breaker in the basement. A significant improvement to the system came early last summer when a camp resident built a small wooden platform so you could stand above, and not in, a pool of condensation while resetting the breaker. When oven mitts were needed to reset the red-hot switches it finally hit us — maybe we should upgrade the electrical wiring in the Morse House to accommodate the increasing demand.

As the first step in what we hope will be a multi-phase renovation, the Morse House will be thoroughly rewired. The

long-term plan is to restore the house structurally and cosmetically, which includes a major overhaul of the kitchen. Though the improvements are long overdue, some camp residents are sure to miss the ungrounded outlets, the extension cords running throughout the house and the routine concerns about using computers and preparing dinner at the same time.

The planning phase for the restoration of the Yale Myers classroom building continues. Being so far removed from the campus yet still a part of the university has made the legal, financial, and administrative aspects of this undertaking more challenging. While the progress is a little slower than originally anticipated, the project is certainly moving forward.

The French House at Yale Myers, resuscitated in the mid-90s by Professor Dave Skelly, will get a fresh coat of



The Morse House at Yale-Myers — where sparks start flying at breakfast paint, glass panes in the windows (to replace cardboard from the Diet Coke 12-packs), and rain gutters this year.

At the Yale-Toumey Forest, the kitchen and bathroom in the house will be upgraded. Former tenant Tom Amarosa held the building together with twine and duct tape as long as he could. When Tom moved out last summer, it was clear that the plumbing and some parts of the structure itself were in need of professional help. Improvements should be completed by summer, just in time for the new crew.

Research at the School Forests

Long gone are the days when the Forest Crew dominated the scene at Yale-Myers Forest. This past year, the School Forests hosted 30 researchers from Yale FES and Yale's graduate program in Ecology and Evolutionary Biology, Yale College, The University of Massachusetts, The University of Connecticut, and Franklin Pierce College. A total of 24 separate research projects, 22 at Yale-Myers and two at Yale-Toumey, were conducted on a range of topics including silviculture and stand dynamics, avian toxicology, amphibian and insect ecology, and fire ecology. This increase in research activity has prompted the creation of a School Forests Research Committee. Starting in 2002, all proposed research is reviewed by the committee with approval granted to research that meets the goals and objectives of the School Forests. We are also working on better follow-up of work undertaken at the School Forests. We are currently compiling a library of papers from research done at the School Forests. The library will be available at Marsh Hall and on-line in the future.

In 2002, archeology and historical ecology joined the long list of research subjects pursued at the School Forests. At Yale-Toumey, archeologist Dr. Robert Goodby of Franklin Pierce College began research along the banks of the Ashuelot River. Dr. Goodby and his students recovered numerous Native American artifacts that indicate the site was occupied twice between 8000-500 years B.P. A summary of Dr. Goodby's findings was published in the fall newsletter of the New Hampshire Archeological Society. At Yale-Myers, Philip Marshall (MESc '02) and Ninian Stein (MESc '03) spent the summer surveying mill sites, stonewalls, and cellarholes, and studying deeds and old maps. Based on this information, Phil has written a paper that documents the agrarian history of Yale-Myers from colonial times to the middle of the 20th century. In her paper, Ninian reconstructs the pre-colonial landscape of the forest. Phil will present his

findings at the Summer Seminar Series (see Announcements, page 4), and both articles will be available soon as School Forest working papers.

Faculty research continues at Yale-Myers Forest and some of the results were published in 2002. Ofer Ovadia, a post-doctoral fellow working with Os Schmitz, has published a paper in the *Proceedings of the National Academy of Science* (99:20) on his work with trophic interactions in old-field ecosystems. Dave Skelly recently had two papers in *Ecology*. The first concerns how the forest canopy affects the performance of larval amphibians (Vol. 83:4). The second critiques the use of "mesocosms," an experimental technique popular with ecologists (Vol. 83:8). Mark Ashton continues his research on the factors influencing the regeneration dynamics and landscape-level floristic patterns in New England.

Three doctoral students wrapped up their Yale-Myers fieldwork in 2002. Heinrich Dohna (MFS '98) finished his experiments investigating beetle habitat preferences and population dynamics. Jason Gear, concluded his fieldwork on springtails in his study of animal movement and predator avoidance behavior. Alex Finkral (MF '97),



Credits: David Ellum

Keith Ellum, Andrew Richardson (MFS '98, PhD '03) and Samantha Rothman (MFS '03) let the sleeping dog (Tacoma) lie as they measure photosynthesis in tree seedlings.

completed collection of tree stem and stand data that he will use to assess the long-term ecologic and economic effects of highgrading. We wish Heinrich, Jason, and Alex the best of luck completing their dissertations, and great success in their post-FES careers.

School Forests explore the potential of selling conservation easements

Over the course of the past year, as another logical step in our continuing development of forest conservation tools and strategies, we began researching the potential for placing some of the School Forests under conservation easements — sometimes referred to as the sale of development rights. Ideally, conservation easements would maintain our current freedom and flexibility for management and research while providing a substantial source of income.

Despite the connotation of its name, working out a conservation easement is a surprisingly complicated endeavor. Numerous consequences,

both direct and indirect, must be considered by all involved parties. Through thorough consideration and discussion, we are learning how existing easements are affecting other forests and, in light of our unique goals and objectives, how they could affect our forests. Students have contributed greatly by collecting relevant baseline data and providing some preliminary recommendations based on their findings. The involvement of Jim Carolan, Yale's General Counsel, and FES faculty member Brad Gentry (who is also an attorney), has been invaluable as the idea of selling conservation easements evolves.

Tickfest 2002: Summer with the Forest Crew

Right from the start, it was clear that the summer of 2002 would be exceptional. Many more students were interested in the summer crew than we could accommodate so we were able to select a great group of Master of Forestry students (left to right in photo): Stephen Dettman, Glen Van Zandt, Amanda Locke, Alison Forrestel, Rebecca Tavani and Ian Stewart (doctoral student and crew leader Zander Evans, MF '97, is in the center). In addition we had the advantage of sage advice from School Forests perennials Alex Finkral, David Ellum and Professor Mark Ashton.

After their training in first-aid and the Game of Logging, the crew moved to Yale-Myers and started the summer with a clean-up of the camp, road maintenance and boundary marking. Next on the agenda was the annual operational inventory. Armed with a brand-new, GIS-based stand map of the division, they conducted a stratified sample of the Curtis division and subsequently prioritized the stands that were in need of treatment. After the crew acquired some experience by marking a few thinnings, they moved on to more complex silvicultural prescriptions such as an irregular shelterwood intended to encourage oak regeneration while maintaining components of both red oak and sugar maple. By the end of the summer the crew marked nearly 600 MBF over an area of 260 acres, a remarkable feat given the crew was occasionally shorthanded because of tick-borne illnesses — both Lyme disease and ehrlichiosis took a toll.

In August the crew moved to Yale-Toumey. Besides marking nearly 80 MBF the crew had to contend with ambiguous boundaries on newly acquired land and a timber theft and abuse of a traditional right-of-way. After finishing work at Toumey Forest in late August, the crew embarked on a “24-7” road trip: all seven School Forests in 24 hours.

The crew managed to play as hard as they worked. The 4th of July barbecue was a big success, in part because of lawn sprinkler wiffleball and the return of the 40-foot Slip 'n' Slide that first appeared in 1996. Other fun included frequent visits to Bigelow Pond and We-Lik-It ice cream.



Credit: Alexander Evans

Toumey or not Toumey? That is the question the forest crew ponders at the memorial to a former Dean of FES.

Announcements & Coming Events

First Annual BioBlitz, June 21, 2003. Join the experts for the First Annual BioBlitz. Over the course of just 24 hours, teams of taxonomists and naturalists will survey one of the eight divisions in Yale-Myers Forest, recording as many plant and animal species as possible. The data will be used to improve management and shared with any agencies interested in placing the forest within a larger landscape context. If you're interested in this opportunity to explore the forest on the longest day of the year, while learning from some of the area's best naturalists, contact David Ellum at david.ellum@yale.edu. All skill levels are welcome.

Yale-Myers Summer Seminar Series, June-August, 2003. The First Annual Summer Seminar Series at Yale-Myers Forest was a huge success. Local residents, individuals active in regional land management, and FES students and affiliates braved the mosquitoes to hear firsthand about research being done at the School Forests. Doctoral students Jason Grear, Heinrich Dohna (MFS '98), Cat Burns and Alex Finkral (MF '97) presented their findings on insect movement and habitat preferences, small mammal ecology, and timber management practices, emphasizing the practical application of their research. The dates and tentative topics of this year's seminars are:

June 26, 2003.

The History of Yale-Myers Forest.
Philip Marshall.

July 10, 2003.

Frogs on the Move: Using genetic fingerprinting to understand amphibian migration patterns.
Anders Halverson.

July 24, 2003.

Patterns of Resource Availability in Forest Microsites.
John McKenna.

August 7, 2003.

Floristic Diversity at Yale-Myers Forest.
David Ellum

Anyone interested in hearing about these projects at the School Forests is welcome to attend. For more details on the seminars contact David Ellum at david.ellum@yale.edu, or visit the School Forests website at <http://www.yale.edu/schoolforest/>.

Demonstration Areas at Yale-Myers. Last spring saw the inauguration of the Tree Heaven Demonstration Trail. In the fall of last year, Shane Duigan (MF '02) and Becky Tavani (MF '02) added an amphitheater at the trailhead and improved the trail along a steep section through an old hemlock woodlot. Work has since begun on Red Front Lot Wildlife Trail. This new trail in the French Division will focus on how knowledge of stand dynamics and silvicultural techniques can be used to create and maintain a diversity of habitats such as vernal pools, open meadows (see lead article on prescribed burning), and woodland coverts. A third demonstration trail is being planned for the area near the main forest camp. The trail will be used to teach forest plant identification and native-tree dendrology and phenology. It will also include an example of a typical southern New England woodlot. In the near future, the Kozey Road demonstration, which illustrates the results of several standard silviculture treatments. The trails will continue to be used for public tours and Professor Mark Ashton's silviculture field trips. We hope to incorporate the main camp trail into the Summer Mods teaching agenda through self-guided tours and exercises.