



THE SPRUCE MOOSE

A publication of the Adirondack Ecological Center Newcomb Campus

Spring/Summer 2003

MAKING A DIFFERENCE IN THE NORTH COUNTRY

by Bill Porter

There's a story about Dick Sage that often comes to mind and I like telling it because it so aptly exemplifies the importance of using the science we learn to make a difference.

The story starts with a call we received one day from a group meeting at Minnowbrook Conference Center in Blue Mountain Lake. Their guest speaker had cancelled and they needed a last-minute replacement. Dick agreed to talk to them about wolves. His presentation was, in one sense, off the cuff because he had no time to prepare other than 25 minutes driving from Newcomb to Blue Mountain Lake. In another sense, he'd been preparing for 35 years because he drew on research we had done. As the story goes, he began by walking up close to one of the group and saying somewhat aggressively, "So, *you* want to put wolves in my backyard!" Well, you could have heard a pin drop in the room.

Wolves were a topic of great controversy at the time and passions ran deep. Dick proceeded to ask a series of questions about the advisability of restoring wolves to the Adirondacks, suggesting to his self-appointed adversary (who was wondering how he'd gotten tagged as being pro-wolf) that there was need to consider some science before making the decision.

Halfway through the presentation, Dick stopped and moved toward another member of the group, who was wishing she had thought to sit somewhere else, and he said, "And *you* want to deprive my community of the chance to cash in on the wolf!" He'd switched positions and charged off with equal vigor about economic consequences and the questions that needed to be asked. When it was over, the audience sat stunned. They hadn't thought about the broad array of questions that needed answers.

To this day, the people to whom he spoke ask me what Dick's real position was on the wolf issue. Did he think we should, or shouldn't restore them?

That's precisely the point. As biologists, we are trying to be honest purveyors of knowledge.

We are trying to help people understand the value of science in some of the decisions that face the region. For many of us, the

real passion we feel is not pro or con. It's making sure the best science is included in the decision-making process.

Wolves haven't been restored to the Adirondacks, in part because of the questions Dick suggested that people ask, and their hesitancy to proceed without solid answers. Sometimes it's just as important for science to pose the questions as provide the answers. That's how we make a difference.

Former HWF Director Recounts a Half-century of Change in the Adirondacks

By Earl Patric

Editor's Note: This is the latest installment in a series documenting historic events at HWF. Dr. Patric served as director of HWF from 1958 to 1963.

The ensuing observations were made while I was resident and visitor to the Adirondacks from September 1950 until the present. None of the impressions are scientifically defensible or based on much other than my own reading on conditions and events. It should be remembered these are the recollections of a 70-plus-year-old in 2002 recalling impressions of a 20-plus-year-old in 1950.



Open refuse dumps were once popular with bear-seeking tourists in the Adirondacks.

In the early '50s the future of the "Forever Wild" provisions of the New York State constitution hung in precarious balance. The sanctity of "wilderness" was much less well understood and articulated then; proposals such as timber cutting within the Adirondack Park and damming the Black River were seriously considered. Today, it seems public support for and acceptance of wilderness preservation is strong and proposals such as these would be immediately and noisily vetoed. Looking back over the changes that have occurred in the past 50 years, it is my opinion the ardent support for "wilderness" has produced both positive and negative outcomes.

To me, traveling through the Adirondacks was more interesting and diverse 50 years ago. Magnificent vistas such as those of the High Peaks from what is now the Newcomb town park and Kempshall Mountain from the south shore of Arbutus Lake have remained completely unchanged over the past 50 years. However, a present-day drive from Newcomb to Tahawus during the summer would allow you only a few glimpses of Mt. Adams or Santanoni Mtn. On the drive along the Blue Ridge Road you cannot see Cheney Pond for the screen of trees. In proceeding from Long Lake to Newcomb during the growing season you rarely catch a glimpse of County Line Flow, Kempshall Mtn., the Santanonis, or the Swards. The price of wilderness preservation has sometimes been the inability to experience wilderness.

The commerce and industry of 50 years ago was stronger and more vibrant in the Adirondack region. Mining, sawtimber, and wood pulp industries were sprinkled through the mountains. The iron and titanium mining lent interest and vibrancy to the local scene in Newcomb. Most major lakes had a mail boat that not only distributed mail but provided a source of news, access, and supplies for lakeside property owners. Rail service was waning but still strong in the central Adirondacks and the mines were mostly served by railroads at the time. Since there were two trains a day each way from Malone to Utica and thence to New York, I could board a "roomette" car at Tupper Lake at 10:20 p.m. and arrive well-rested at Grand Central Station at 7 a.m. — the cost round trip a pricey \$72.10. On the return trip you could board the appropriate car at Grand Central any time between 9 p.m. and midnight and arrive back in Tupper Lake mid-morning.

I believe that 50 years ago there were more interesting way-stations and fascinating places in the Adirondacks. There were ranger stations located in strategic places throughout the mountains. These stations were usually manned by a cadre of unique and interesting characters. There were numerous fire towers atop strategically located mountains and also administered with colorful and intriguing figures. Isolated, self-sufficient communities were found in places like Tahawus, Coreys, Darts, Number Four and



Newcomb's Visitor Interpretive Center helps today's Adirondack visitors get acquainted with the wonders of the region.

Brandreth. This latter village had the distinction of being connected to civilization only through the Adirondack branch of the New York Central railroad. Brandreth seemed to be a thriving community in the early '50s, too. It had its own streets and automobiles, and even a factory, yet it could only be reached by rail service. I was often amused by the seemingly behemoth train stopping there with a few bottles of milk, some letters or a small package. The "bear dumps" in some of these locales were a source of great interest to tourists in the '50s and '60s. There were community refuse disposal sites that were deliberately left uncovered sufficiently to attract black bears. Evening viewing and photography by tourists represented staple fare for numerous communities.

I think there were more "characters" 50 years ago, and these figures added to the ambience. I have already alluded to Noah Rondeau, the "Hermit of Cold River." There were also interesting and sometimes legendary guides and — all too often — poachers who enriched the scene. I was most impressed by the oft-recounted sagas of Ollie Tripp, who lived in Newcomb and related to me hunting and trapping experiences in his time. Some of the loggers and pulpwood cutters were of interest, and I recall hearing about the exploits of "Bucksaw Moran." My more personal and immediate favorite was Rene Bureau, who could buck-up softwood pulpwood with incredible proficiency.

However, in other ways the Adirondack experience is richer today. There are more nature trails and interpretive centers throughout the region, such as the Visitor Interpretive Center in Newcomb.

There is the excellent Adirondack Museum in Blue Mountain Lake. All of the commercial or state downhill ski facilities were developed after 1950 and provide recreation and tourism. I believe there are more hiking trails, lean-tos, and properties open to the public today than a half-century ago. While the views from them have become fewer over the years, the major auto roads are greatly



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improved. There are more cultural centers located among the hamlets and villages in the foothills. The Adirondacks are cleaner – the water, air, and roadsides. The unsanitary bear dumps are gone. There are fewer noisy log-trucks, ore-trains, and chainsaws to disturb the peaceful quiet of the forest. Electric service is relatively reliable to even the most remote and isolated of residents. In 1950 I believe there was only one house in Newcomb with television. It had a huge antenna system, and the picture was incredibly poor by today's standards.

The past 50 years have seen major changes, both positive and negative, in Adirondack and HWF conditions. "Forever Wild" has become a philosophy thoroughly inculcated into Adirondack life, and on balance the result is probably useful and positive. Though there has been a demographic "graying" and a diminution of regional vitality, forests have been saved from plunder by the "timber barons" and the "frenzied loggers." Extensive tracts of woodlands are beginning to blanket the Adirondack Park, though these forests are not and will not become the majestic, stately, and grandiose stands of gigantic trees, teeming with wildlife, so keenly anticipated by ardent — and perhaps naïve — activists and preservationists. Nevertheless, I suspect there will be ardent support for the "Forever Wild" philosophy in the Adirondack Park for several more decades. My guess is that in the first third of the 21st century the entire challenge and debate will be revisited at great length.

Research Investigates Biological Integrity in the Adirondacks

By Michale Glennon

Biological integrity refers to the completeness of ecosystems and their capability of maintaining a community of organisms with structural, functional, and compositional qualities comparable to that of natural habitat of the region. The Adirondack Park provides an ideal location for a study of biotic integrity and sustainability. This 2.5 million ha region of diverse ecosystems is overlaid by a diverse political landscape encompassing a variety of land uses. It is composed of roughly equal proportions of public lands, protected as "forever wild" forest by the state constitution, and private lands managed for a multitude of uses. This research project was an effort to examine the effects of land use management on biotic integrity in the Adirondack Park.

I examined the relationship of land use management to distribution and community structure of two faunal communities. The goal of this research was to explore the effects of land use management on biotic integrity by answering the question: How do the structures of small mammal and bird communities change along a gradient of human impact in the Adirondack Park?

I developed an alternative technique for sampling small mammal populations over large areas and tested it against a traditional live-trapping approach to small mammal sampling. The technique provided the foundation for the mammalian portion of this study and was used to examine changes in small mammal community structure in 30 sample locations along a gradient defined by old-

growth forest, managed forest, and areas of residential development. Small mammals demonstrated a numerical response to the gradient for some species, but not all. Old growth forests contained significantly higher abundance of total small mammals, eastern chipmunk, and *Sorex* species than managed forests or areas of residential development. Differences among management types were reflected more readily in total abundance and community structure than in indices reflecting richness and diversity. Variables describing amount and characteristics of coarse woody debris were most important in describing habitat relationships along the gradient.

The avian component of this project elevated the scope and complexity of the central question by using a multiparameter index to further explore the effects of land use on Adirondack bird communities. I used an Index of Biotic Integrity (IBI) in an examination of breeding bird community integrity across the extent of the Adirondack landscape. Using an approach similar to that used for small mammals, I examined differences in biotic integrity along a gradient of human impact defined by major jurisdictional land use types in the Adirondacks. I found significant differences in total, functional, compositional, and structural integrity on five land use types ranging from hamlet to wilderness. In all cases, integrity was lowest in hamlet areas and increased along the gradient to its highest level in wilderness areas. Biotic integrity showed strong groupings of the five land use classes. I found that bird community integrity was strongly related to roadlessness and that birds responded primarily to the distinction between developed and undeveloped land types.

Lastly, I attempted to explore the implications of the observed patterns in biotic integrity by modeling the effects of increased development under three scenarios of potential residential development across the Adirondack Park. The results of this analysis demonstrated that the open space resources provided by some of the private land use types in the Adirondacks are particularly valuable to biotic integrity and are vulnerable to predictable impacts of increased development.

For more than a century, the debate over land use in the Adirondacks has been about management of the forest, and sustainability has been central to the debate. In recent decades, the concern about sustainability has begun to shift from the threats posed by exploitation of wood fiber to those posed by development. This research suggests this shift is appropriate. Further, this work shows that science now has the tools to lift the level of the debate from narrative depiction of the consequences of mismanagement to quantitative assessment of management alternatives on biotic integrity.



Michale Glennon, ESF PhD candidate collects data to better understand biological integrity in Adirondacks.

The Dynamic Adirondack Forest, 1968-1993

By Karl Didier

The proper management of the Adirondacks requires us to monitor and examine its forests as an entire ecosystem, rather than a collection of individual forest stands or property units.

Unfortunately, most ecological studies are performed on local spatial and short temporal scales. As a result, ecologists try to extrapolate the results from these studies to entire ecosystems, often with confusing results. For instance, some studies have suggested that overstory sugar maple is declining in a few places, possibly from acid deposition, and regeneration is suffering from deer herbivory and competition from American beech. Other studies have suggested that sugar maple is favored by foresters when marking stands for harvest, and as a result, it is doing quite well. The same kind of confusion exists for other species, including beech, hemlock, and red spruce. We began to wonder what the real answer was for the Adirondack ecosystem. Was sugar maple declining? Was beech taking over?

We used long-term and broad-scale data collected by the U.S. Forest Service to look at tree population dynamics on timberlands across all of northern New York from 1968-1993. The results were sometimes eye-opening. The first pattern was a nearly 70 percent increase in forest volume since 1968. Adirondack forests are still recovering from the severe land clearance and forest exploitation of the late 1800s and early 1900s. The second pattern was that mid-sized trees (from 7-17 inches in diameter) were increasing at a faster rate than large trees. This may reflect the preferential logging of large trees (saw timber) over smaller trees (poles), otherwise known as diameter-limit cutting.

However, even more interesting patterns emerged in the composition of the Adirondack forest. Red maple, sugar maple, and black cherry were the big winners, showing 2-4 percent increases in the proportion of the forest that they comprise. Black cherry showed nearly a 250 percent increase in volume! Red spruce showed a 5 percent decline in the proportion of the forest that it comprises, and yellow birch nearly a 2.5 percent decline. American beech, while showing little overall change in volume or proportion, experienced a radical change in population structure. Big beech (trees >13 inches in diameter) declined dramatically, but small beech increased dramatically. This undoubtedly reflects the destructive impact of beech bark disease, which was introduced in the 1950s. However, it looks like the decimation may be slowing,



Karl Didier's PhD research investigates long-term changes in the Adirondack forest.

as these changes were less dramatic from 1980-1993 than 1968-1980.

Many of the changes in other composition are simply natural trends set into motion at the turn of the century. Land clearance, fire, and heavy harvest of spruces favored sugar maple, red maple and cherry, and this trend is continuing to today. Other changes are due to more recent anthropogenic forces, including increased diameter limit cutting, acid deposition, and climate change which may be having negative effects on yellow birch and red spruce. In conclusion, the Adirondack forest is a dynamic ecosystem, where the footprint of anthropogenic forces linger for centuries.

Trends in Songbird Abundance at HWF

By Stacy McNulty

Declines in neotropical migrants (songbirds) have been linked to changes in habitat on both breeding and winter range. However, our picture of songbird population health is complicated by the fact that all songbirds are not affected equally by forest succession or management. Songbirds that nest in the forest canopy may find the habitat less appealing when an area is managed for timber but gradually return as the forest grows back. Research at HWF is paving the way toward explaining differences in songbird abundance and diversity related to forest change.

AEC staff have counted breeding songbirds each summer since 1983 as a part of the Adirondack Long-Term Ecological Monitoring Program (ALTEMP). We conduct point-counts in an unmanaged (old-growth) deciduous stand, a selectively-cut mixed stand, and a deciduous stand managed under the shelterwood method where the overstory was removed on half of the stand.

We measured the relative abundance (RA, the number of individual birds/count) of 33 species. Red-eyed vireos and ovenbirds, birds found in mature deciduous forest, had higher RA in the deciduous stands than the mixed stand. Red-eyed vireos showed an increase in RA in the shelterwood stand over time as the stand changed from grasses and herbaceous species to raspberry bushes and young trees. Conversely, the RA of chestnut-sided warblers and least flycatchers, birds associated with "early-successional" habitats, declined in the shelterwood stand over time. We will continue to monitor songbirds on HWF as the forest changes to understand long-term changes in songbird populations.



Ovenbirds are commonly heard during bird surveys at HWF.

SPOTLIGHT ON RESEARCH

Graduate Research at AEC/HWF ■

Editor's note: Several new graduate students are involved with research projects at HWF. Here are just a few:

Kemal Gökkaya (MS candidate in EFB with Dudley Raynal) is investigating how nitrogen fixation by speckled alder, a common Adirondack wetland shrub is affected by phosphate fertilization. Phosphorus is a major nutrient that limits primary productivity and nitrogen fixation at low availability. In Kemal's field fertilization experiments, he added superphosphate fertilizer to two alder-dominated wetlands at HWF. Fertilized plots yielded significantly higher specific nitrogenase activity than those in unfertilized wetlands. Fertilization also significantly increased twig length, twig biomass and foliar biomass.

John Campbell (Ph.D. candidate in EFB with Myron Mitchell) is examining the importance of biotic vs. abiotic processes on water chemistry during winter. John is studying two first order streams and their surrounding watersheds at HWF. The watersheds are adjacent to each other and have similar physiographic features (e.g. size, slope, aspect, elevation), yet the stream chemistry differs remarkably. He will be monitoring the chemical composition of precipitation, throughfall, snow, snowmelt, soil water, and streamwater from October through April for two years. John's study will increase understanding of the sources of chemical constituents in streamwater during the dormant season.

Jan Herr (MS candidate in EFB with Dietland Müller-Schwarze) will investigate whether beavers are able to discriminate between territorial neighbors and strangers. During his first field season in spring/summer 2003, Jan will attempt to trap at least one adult male from each of 20 active beaver colonies at HWF using live-traps and snares. Castoreum, a substance secreted by beaver to mark territories, will be collected from each trapped male. Jan will observe the behavior of colony-members as they encounter scent mounds he created with castoreum from either the colony's neighbor or a distant colony.

Deer tagged at HWF travels more than 60 miles

By Jeremy Hurst

A recent conversation with a landowner curious about the deer in his backyard wearing yellow, numbered ear tags put us on the trail of a white-tailed deer a long way from HWF. In mid-February, 2003, deer #250, was reported to have taken up winter residence in the vicinity of South Corinth, NY, approximately 60

miles (as the crow flies) southeast of HWF, where she was first captured in July, 2001. She was confirmed to be in the area March 11 by aerial telemetry.

Deer #250 was captured as a yearling in the lower Adjidaumo area of HWF, where she remained throughout the summer of 2001. However, come fall of that year we lost all track of her until these recently reported sightings indicated her having undertaken a significant dispersal from her natal range. Female white-tailed deer in the Adirondacks typically establish home ranges adjacent to or overlapping with their immediate kin, and only the rare 3-5 percent of female deer disperse from their natal area. Dispersal distances of > 30 miles have been reported in Midwestern states but are unusual for the Adirondacks. As deer in the Adirondacks are migratory, utilizing separate summer and winter ranges, we may be observing the combined effect of dispersal and winter migration.

Adirondack Deer / Forest Dynamics Research Gets International Attention

Few places in the world are as pretty a venue for a science conference as Davos, Switzerland. An international conference on the role of deer on forest dynamics brought together biologists from as distant parts of the world as the Xiangling Mountains of China and Black Hills of North America. Huntington Forest research was well represented.

In three presentations, Karl Didier (doctoral student at ESF), Bernie Patten (Institute of Ecology at the University of Georgia) and Bill Porter explained our current understanding of how deer are shaping the forests of the Adirondacks.

Didier's work examined the impact of deer across the entire Adirondack Park. He showed that understanding the impact of deer requires that we look at many different geographic scales, from local levels of perhaps a thousand acres to landscape scales of more than a 100,000 acres. The other two presentations drew on the nearly 40 years of study of deer and northern hardwoods, synthesizing our understanding of the ecology of deer and how they are now affecting the composition of tree species that will compose the Adirondack forest for the next two centuries.

Patten showed that managing deer as part of the forest ecosystem is akin to flying an airplane on instruments: if we focus on only one or two gauges, we are bound for disaster.

Porter expanded on this message, showing that the composition of future forests is dependent on not just a suite of factors, but a five-year window in time when specific conditions for each of those factors are all optimal at the same time. These presentations are now available in published form. Drop us an e-mail or a card, and we will gladly send you a reprint.

RECENT PUBLICATIONS RELATED TO AEC/HWF

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Sage Fund Endowed

The ESF Foundation has just announced that the Richard W. Sage, Jr. Fund has achieved sufficient resources to be considered an endowment fund.

Present contributions total a little over \$10,000. Our goal is \$100,000, so keep this one on your list for gifts. Remember that your contribution to the ESF Annual Fund can be designated to go to the Sage Fund.

To make your contribution on-line, please go to <https://www.info.esf.edu/scripts/giving.asp> and select the Richard W. Sage Jr. Apprenticeship Fund.

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