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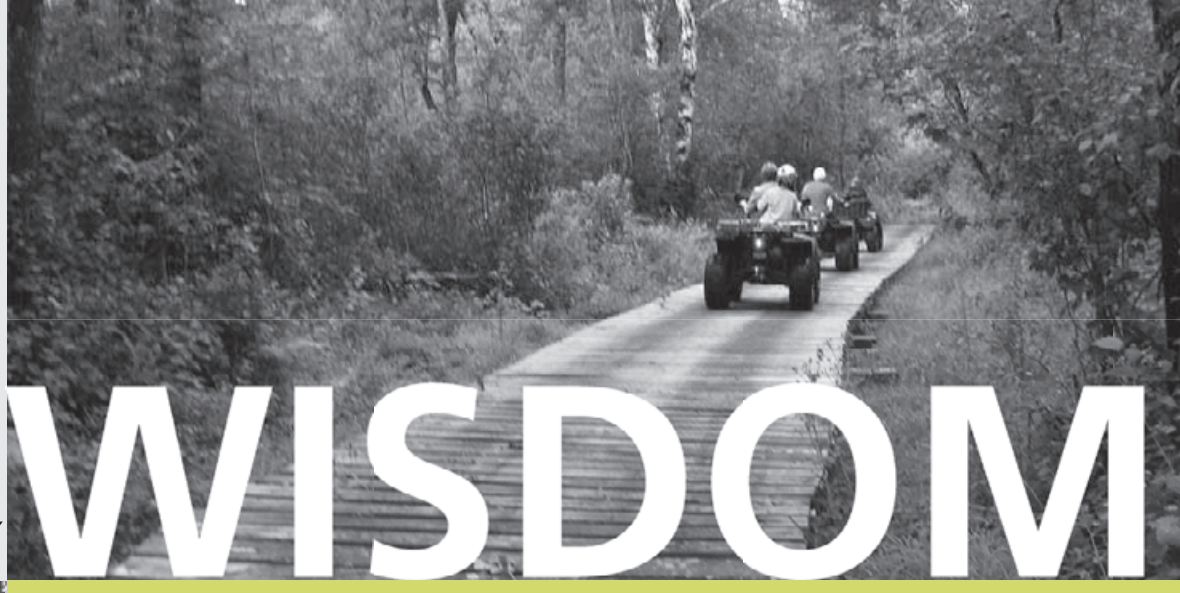
Recreational Issues Facing Forest Managers

forest WISDOM



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in this issue:

Recreation Trail Management and Cooperative Decision Making

by Mark Jacobs and Kathryn Fernholz

Managing motorized recreation trails on public lands in Northern Minnesota

Twenty-first century forest managers face many challenges that were not on the 'radar screen' a generation ago, and motorized recreation is high on the list. In fact, in 2006, U.S. Forest Service Chief Dale Bosworth listed unregulated motorized recreation as one of the top four threats to U.S. forests. These new challenges require managers to cut through the stakeholder 'turf-war' rhetoric and proactively engage all interested parties in an open, thoughtful process to develop a long-term solution, not just 'put-out-fires.'

All-terrain-vehicle (ATV) use on public lands in northern Minnesota has evolved into a traditional and controversial use. Usage started more than 20 years ago with hunters using 3-wheelers to get back into remote areas; but over the last decade, the popularity of recreational ATV use (trail riding) has grown significantly. The primary use of ATVs is shifting from being a form of utilitarian transportation to a recreational activity. A growing type of recreational activity in the region is group- or club-organized ATV rides. These shifts have led to increasing user conflicts and more extensive areas of damage to sensitive soils and wetlands by irresponsible riders. The anticipated continued growth of recreational ATV use has sparked a debate on how to deal with both the expanding interest and impacts relative to public land. Some interest groups have proposed to severely restrict ATV use on public lands; others have advocated for more trails.

In 2006, Aitkin and Itasca counties proposed to the Minnesota Department of Natural Resources (MN DNR) to develop an integrated ATV trail system — encompassing an area the size of Delaware — that would connect existing trails, enhance the economic impacts to local communities, and move the growing recreational trail use to a trail system designed for their use away from sensitive areas. MN DNR accepted the proposal for the 70-mile ATV Trail, a $250,000 legislatively funded trail development project.

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forest **GUILD**
P.O. Box 519
Santa Fe, NM 87504
505-983-8992
505-986-0798 (f)
www.forestguild.org

Editor

Marcia Summers

Staff

Mike DeBonis
Executive Director

Henry Carey
Senior Forester

Renee Denipah
Administrative Assistant

Zander Evans
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Photo above by Zander Evans

Dear Forest Guild members and friends,

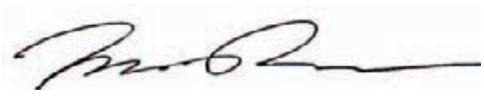
Recreation is an activity that best connects humans with their outdoor world. For many of us, time spent in the out of doors at an early age shaped our perception of and relationship with nature. Growing up in Vermont, the Green Mountain National Forest was the place where I first got a taste of the "woods." Without a doubt, those early hikes, ski trips, and campouts in the Green Mountains are a large part of why I am a forester today. As a kid, I took it for granted that the national forest was always there. It never occurred to me until much later in life that a group of people had to put the effort in to make our national forests a reality.

One hundred years ago, the Weeks Act was passed into law. It granted the federal government authority to acquire and maintain national forests and to protect the watersheds of navigable streams. Its passage made possible the creation of the Eastern national forests, including the White and Green Mountains. The passage of the Weeks Act was a true collaborative effort. It took the tenacity and leadership of Congressman John W. Weeks (MA) and dedicated groups of concerned citizens and organizations to push the legislation through. Groups like the Society for the Protection of New Hampshire Forests and the Appalachian Mountain Club represented place-based interests and were instrumental in passing the Weeks Act.

The Act was one of the first pieces of legislation that established a conduit for the U.S. Forest Service to work across boundaries with a broad array of partners to achieve conservation success. This model of collaborative forest management championed through the Weeks Act remains one of the best tools for addressing the complex, multi-issue challenges facing today's public forests.

Unlike national parks, national forests were intended to be managed for multiple-use and public values of recreation, timber harvesting, wildlife, and watershed protection. The Weeks Act led to the creation of 52 national forests in 26 Eastern states and the addition of 19.7 million acres of national forests and grasslands across 41 states and Puerto Rico. Approximately 20 percent of the nation's clean drinking water has its origins in forests preserved under the Weeks Act, and more than 800 miles of the Appalachian Trail travel through forests that were purchased under the Act. For those who utilize these public lands for their livelihood, solitude, and recreation pursuits, the Weeks Act is of tremendous importance.

This issue of Forest Wisdom focuses on the relationship between recreation and responsible forest management and explores successes and challenges experienced by Guild foresters. As I reflect on the centennial of the Weeks Act and the impact it had on public forests and people's relationship with the land, I see how lessons learned from the Weeks Act inform our own forestry work. It starts with the health of the forest. We must maintain the health of the land to achieve the clean water, fiber, biodiversity, and recreation benefits that come from it. Individuals united by a shared, common vision can surmount tremendous challenges to achieve real, lasting change. The management decisions we make today, positive or negative, will have an indelible impact on our children and our children's children.



Michael DeBonis, Executive Director

Recreational trail management, from page 1

Aitkin County Land Commissioner and Forest Guild member Mark Jacobs was designated as the project leader and stated at the start of the planning effort, "A lot of my cohorts thought that I was crazy to take on this project; but someone needed to step forward. This is a land-use issue, and I'm a land manager. ATV use has become a traditional use, and the problems associated with that use must be proactively managed. We now have funding to develop and design sustainable trails that will, in my opinion, ultimately relieve pressure on more sensitive areas of our public forests and hopefully enhance our local tourism economy."

Volunteer Trail Ambassadors on patrol.

To assist with the planning and decision making for the trail project, a broad-based 19-person oversight committee was formed with citizen and agency representation from both counties. The committee's first order of business was to request proposals for a project coordinator. Dovetail Partners, Inc. of Minneapolis was chosen to provide project services that involved coordinating public meetings and managing the public and stakeholder input process.

The Aitkin-Itasca 70-mile ATV Trail Committee established the following project goals for the project:

- There will be at least 70 miles of new trail.
- The trail will have desirable destination points that provide a diverse, enjoyable experience for users.
- It will have an environmentally friendly design that addresses environmental protection via a comprehensive assessment.
- It will develop local community support through an inclusive and transparent public process and will link communities for economic benefits.
- It will enhance enforcement efforts by decreasing "gray areas" relative to ATV accessibility.

Since the project launch in October, 2007, there have been more than 25 public meetings held by the committee and facilitated by Forest Guild member, Katie Fernholz of Dovetail Partners. Public engagement in the project has been supported through open house events, periodic progress-report newsletters mailed to local elected officials and businesses, an email contact list (more than 200 citizen contacts), a media list for distributing news releases and public notices, and a project website with project materials and online videos to help share information.

When local contractors and vendors started construction in 2009, the project was given a new name, the Northwoods Regional ATV Trail. Trail corridor clearing was conducted in winter during frozen soil conditions to reduce site damage and soil disturbance. Although wetlands comprise about 50 percent of the local land base, wetland crossings were avoided whenever possible. In instances where wetland crossing were unavoidable, low-impact crossings such as wooden puncheon bridges were utilized. Wetland crossings now account for less than two percent of the trail corridor footprint.

Last summer, the first segments of the Northwoods Trail were officially opened. Use on the new segments has already been substantial. There was considerable publicity surrounding the new trail including a grand opening ceremony held in July. Specially trained citizen Trail Ambassadors routinely patrol the trails and submit reports (with GPS locations and photos) to MN DNR conservation officers concerning off-trail violations, signage needs, trail-user counts, invasive species, trail damage, etc. These reports are forwarded to trail sponsors, such as the Aitkin County Land Department

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Kathryn "Katie" Fernholz
Katie is the executive director of the Minneapolis-based Dovetail Partners Inc., a non-profit organization that focuses on forestry-related issues. A Forest Guild member since 2002, Katie also serves on the Forest Guild Board of Directors.

Mark Jacobs
Mark is a Forest Guild Professional Member and Land Commissioner for Aitkin County, MN, where he supervises the management (221,000 acres) of public land and resources. Lands managed by the Aitkin County Land Department have been FSC certified since 1997.

Photo of Calypso at right and those on page 5 courtesy of Richard Stevenson.

Using Field Observations of Calypso Orchid as a Gateway to Further Learning and Protection of Rare Species

by Richard Stevenson

Richard Stevenson

A Forest Guild professional member since 2006, Richard is a forester for the Michigan Department of Natural Resources where he is currently the manager for the Michigan State Forests in Luce and West Chippewa Counties in the East upper peninsula.

The best natural resource professionals are dedicated to being good stewards of the lands in their care; but their training doesn't make them experts on everything. As foresters, we often have to balance society's dependence on the forest for wood products and recreation, for example, with the protection of the forest's ability to sustain all forest resources. If we hear of plants or animals at risk because of forest product removal or recreational patterns in the area, then we need to take action to mitigate the damage or avoid those risks.

I work in the eastern Upper Peninsula and the northeastern Lower Peninsula of Michigan. In this landscape, I have taken care of state forestlands, as well as assisting private landowners and working on projects with Michigan State Parks. My interest with special plants is to learn all I can about a rare species so that I can apply that knowledge to making good forest management decisions. Plants have various needs and site requirements. Sometimes protection and management strategies don't become apparent without extensive knowledge.

In this article, the example I use is calypso orchid (*Calypso bulbosa*). The main reason calypso orchid is so rare is that it seems to want to grow in stable-state northern white cedar (*Thuja occidentalis*) stands with no human impacts. These sites may be close to the Great Lakes, with shallow, rich mineral soil over limestone that are prime areas for second homes, scenic roadways, pathways, parks, and other human disturbance. Another typical site would be Rich Conifer Swamps (RCS) with shallow depths of mineral soil over the water table. As described in the Michigan Natural Features Inventory, RCS communities are groundwater-

influenced, forested wetlands dominated by northern white-cedar. They are often sites subject to logging coupled with over abundance of wintering white-tailed deer (which makes northern white cedar regeneration very doubtful). Changes to the native hydrology can also cause cover type conversions that have eliminated many Calypso orchid sites.

Recreation on these sites can bring negative influences from several sources. Roads, trails, and pathways have often been constructed without prior survey of the native vegetation. In cedar stands, the high ground favored by Calypso is also the best site for park or campground infrastructure or the building of recreational homes. A related recreational threat is that people love Calypsos. Foot traffic compacts the litter layer that it must have for root formation, and sometimes Calypso seekers trample the very plant they are searching for. Photographers often remove vegetation to get that perfect photograph. In so doing, sometimes they alter the amount of shade, which has an immediate impact on the health of the plant. Photographers have also plucked pollinated Calypsos because they fade in color after pollination and no longer make the ideal image.

Calypso orchid description: Calypso is one of the rarest and smallest of North American orchids. Here are a few characteristics that will help you identify them. Think four inches tall! They have just one bright green, pleated, basal leaf the size of a dime or nickel. Flowering plants tend to have the larger leaf size. The leaf is very low to the ground, usually lying on top of cedar litter. The single leaf is visible for most of the year. It may not be visible from July to September. In October or November, the new leaf emerges and over winters.

As you get better at it, you can find Calypsos by locating the leaf. However, the flower is what gets all of the attention because it is extraordinarily lovely. In Michigan, it is a medium magenta-to-pink flower with white and yellow accents. As it gets pollinated, the flower fades in color to a muted pink, then to almost beige. Actually, it is much easier to see in low light situations if it has already faded to beige. Because of the tricky dappled sunlight, the magenta can be hard to spot. The flower blooms around mid-May, and by the first week of June, it is fading fast. You may never see a seed head. Pollination seems to be unsuccessful more often than not. Overcast days are best for searching for this plant.

Calypso microsite: The site requirements change with proximity to the Great Lakes and latitude. However, these site qualities are always the same: it will never flood; it is never found in more than dappled sunlight; and it is never in absolute shade. Exception: you may find scattered Calypso leaves in the shade, and those plants will flower if a single tree falls to create just a little light. If many trees fall, look back at the edge of the shade and the light. Forget about sites with heavy deciduous litter. Northern white cedar litter is preferred, but sometimes pine or spruce litter will suit the plant. This is especially true as you move to Lake Superior. Sites may also have Dwarf Lake Iris (*Iris lacustris*). This iris grows on sunnier microsites than Calypso. When the first Dwarf Lake Iris blooms in the sun, look in the shade for Calypso blooms.

> "Calypso orchid is valuable on the black market and is almost always over harvested. Calypso is rare for these reasons: People steal it and destroy its habitat."

Management implications: Leave Calypso sites alone! If a timber sale or recreational site is being planned, leave at least a one-eighth mile buffer (10 chains). You must protect the site from excessive sunlight, changes in moisture levels, and change in litter composition. Calypso likes a canopy closure just under 100 percent. Don't allow heavy foot or vehicle traffic. Compaction of the litter can kill the fine roots in the litter layer. Provide a relatively stable state with only minor canopy changes from single-tree mortality or small wind events. When the light is altered, the drainage is altered; then the litter layer is altered; and thus, death to Calypso.

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"Humans can spread the disease both commercially, via the nursery trade, and recreationally, via infested soil on shoes or tires."

At right - Bleeding tanoak canker. Photos for this article were provided by Alison Forrestel.

Sudden Oak Death at the Point Reyes National Seashore

by Alison Forrestel

The Point Reyes National Seashore encompasses more than ninety thousand acres on the coast of California, just north of San Francisco. Approximately one third of Point Reyes is forested. Major forest types include Douglas-fir (*Pseudotsuga menziesii*)/tanoak (*Notholithocarpus densiflorus*) forest, oak-dominated hardwood forest, bishop pine (*Pinus muricata*) forest, and redwood (*Sequoia sempervirens*)/tanoak forest. These forests lie at the heart of a disease epidemic. Sudden Oak Death (SOD) is killing millions of oaks and tanoaks from Monterey County (in central California) north to Curry County (in southern Oregon). Hosting over two million visitors each year, Point Reyes National Seashore faces unique challenges and opportunities managing recreation in the context of SOD.

What Is Sudden Oak Death?

SOD is a forest disease caused by the non-native pathogen *Phytophthora ramorum* which mainly impacts oaks and tanoaks in coastal hardwood, mixed evergreen, and redwood forests. Dying oaks and tanoaks were first observed in Marin and Santa Cruz counties in the mid-1990s, and *P. ramorum* was identified as the cause in 2000. It is one of many plant pathogens in the genus Phytophthora. In fact, the name Phytophthora comes from Greek and means "plant-destroyer." Other pathogens in this genus include *Phytophthora cinnamomi*, which causes root rot in a variety of species and ecosystems and *Phytophthora infestans*, the cause of the Irish potato famine.

Depending on the host species, *P. ramorum* can infect the leaf tissue, cambial tissue, or both. Dozens of species of trees and shrubs support foliar infections, and while they are not significantly impacted by the infection, the disease sporulates from their leaf tissue and spreads to other individuals. To date, *P. ramorum* is known to infect the cambial tissue of five species (coast live oak (*Quercus agrifolia*), interior live oak (*Quercus wislizeni*), California black oak (*Quercus kelloggii*), canyon live oak (*Quercus chrysolepis*), and tanoak where its bole cankers girdle and eventually kill infected trees. Trees that host cankers often appear to die rapidly with their foliage turning brown in

At left -
Trail blocked by SOD debris.

a matter of weeks. Mortality rates differ between species, and the true oaks have greater natural resistance to the pathogen than tanoak which has little to no known resistance. Tanoak is also the only species which is both a foliar and a bole canker host. At the stand level, it is not unusual to observe tanoak mortality of close to 100 percent, an indication that it may eventually reach functional extinction.

SOD has substantial impacts, both ecological and beyond. On the ecological side, oaks and tanoak define much of the structure and composition of several coastal forest types. They are abundant acorn producers, and their decline is likely to affect native animal species that feed upon acorns, as well as cascade up the food chain to keystone species such as the northern spotted owl. In redwood forests, tanoaks are one of the few ectomycorrhizal hosts, so mortality due to SOD has the potential to impact below-ground mushroom communities as well as nutrient and hydrological cycling. Other impacts could include changes in fire behavior and invasive species establishment in mortality gaps.

The pathogen spreads through multiple pathways. Over short distances, spread is mainly due to rain splash, especially during warm spring rainfall events. There are multiple agents of long-distance spread including wind, waterways, humans, and possibly animals. Humans can spread the disease both commercially, via the nursery trade, and recreationally, via infested soil on shoes or tires.

SOD and forest management

Research on SOD has lead to a number of recommended forestry practices. Because the pathogen is primarily vectored on California bay leaves (*Umbellularia californica*), removing bay trees near oak or tanoak stands may prevent or delay pathogen spread into those stands. Such santitation techniques are being explored by tribal groups in northern California for whom tanoak is culturally important. A similar, more aggressive approach is also being used at the northern end of the zone of infestation in Oregon in an attempt to prevent spread further north. Bay removal is not being used at Point Reyes because the disease is already widespread and well established in the park. Research has also lead to the development of Agrifos, a chemical treatment which can prevent infection when applied to healthy trees. This approach is being used at Point Reyes on cultural heritage oaks in the Bear Valley visitor center area. Ongoing research by the US Forest Service is aimed at developing *P. ramorum*-resistant tanoaks. Although this research is a long way from completion, there is hope that resistant tanoaks may be developed in the future.

Land managers in Marin County and in Oregon have used prescribed fire in an attempt

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Alison Forrestel
A Forest Guild professional member since 2008, Alison is the fire ecologist for Point Reyes National Seashore. She is interested in the interactions between fire and diseases such as Sudden Oak Death. She is also pursuing a PhD at the University of California, Berkeley.

At right - In the Northeast region, white-tailed deer often reach peak densities where field, forest, and wetland mosaics occur. Photo by Jesse Mohr, Native Geographic, LLC.

Promoting Diverse Forest Values through Deer Hunting

by Jesse Mohr

Jessse Mohr

A Forest Guild professional member since 2008, Jesse Mohr is Executive Director of the Upper Valley Stewardship Center and owner of Native Geographic, LLC. His work, teaching, and research often span the fields of ecology, forestry, and wildlife biology.

The most recent tally of my understory plot was similar to the prior five: two red maple (*Acer rubrum*) seedlings, 100 percent fern coverage, zero percent shrub cover, and five percent midstory. Given the number of canopy openings from recent windthrow, the understory of the 60-year-old conifer stand was not developing the way I anticipated. This forest's history as a former pasture is part of the problem, by aiding the establishment of hay-scented fern (*Dennstaedtia punctiloba*). I think that deer, and their selective browsing pressure, are also probably part of the problem. This pasture is part of the Upper Valley Stewardship Center's property. The Center is located in Haverhill, New Hampshire, a bit more rural and further north than most widely documented deer overabundance problems. However, as is commonly discussed by foresters in the region, it sure seems that addressing deer pressure would be integral to efficiently regenerating the stand to meet ecological, aesthetic, and timber goals.

History of deer management and hunting

The history of white-tailed deer (*Odocoileus virginianus*) hunting and management runs deep in the Northeast. Nursing the herd back from the brink of extinction in the late 19th century is one of the region's earliest and greatest wildlife management successes. Today, many local deer populations throughout the region exceed both ecological and social carrying capacities, necessitating effective management. Regulatory and voluntary tools still abound to protect and manage for the herd; but now as deer management has shifted from bolstering the herd to addressing deer overabundance, the tool box feels a bit lighter. I believe one viable solution to deer overabundance lies in the hands of our blaze orange woodsmen and woodswomen.

Deer impacts

Intensive deer browsing can reduce vertical habitat diversity by removing ground, shrub, and midstory layers. Deer-related loss of these layers and habitat niches has been tied to songbird decline in some studies. The preferential browsing of deer can also alter forest composition, which can be problematic for timber and wildlife. In the region's northern hardwood forests, for example, sugar maple (*Acer saccharum*), white ash (*Fraxinus americana*), and oak (*Quercus sp.*)—some of the region's premier lumber and mast trees—are preferentially browsed, thus shifting the competitive advantage to

less desirable regeneration, such as American beech (*Fagus grandifola*) suckers and striped maple (*Acer pennsylvanicus*). In more southern regions, deer intake of acorns has substantially reduced the availability of this mast for other wildlife species.

One of the most challenging impacts of overabundance is the interplay between deer, ferns, and small mammals. Rapid woody plant growth often precludes fern dominance. However, when deer shift the competitive advantage by browsing woody plant species and avoiding ferns, understory monocultures of hay-scented, bracken (*Pteridium aquilinum*), and New York (*Thelypteris noveboracensis*) ferns can quickly develop. These three species are capable of forming dense organic mats and reducing forest-floor light levels, further reducing germination and growth of woody species. Many of the region's premier timber species do not successfully regenerate under the fern canopies. This problem is further exacerbated by the feeding activities of small mammals, whose populations often increase under the protective fern canopy thereby removing a greater percentage of the seed bank and feeding on a greater percentage of seedlings.

The interplay of these factors comes to a head during forest management operations. Overstory removals can lead to further dominance by fern species. Concerns related to deer overabundance extend beyond forestry and wildlife. Higher deer densities have been linked to increases in crop damage, vehicular collisions, and Lyme disease.

Recreational deer hunting as a viable management approach

The Northeast Deer Technical Committee's 2009 review of deer management options to reduce deer densities and human-deer conflicts in the Northeast concluded that regulated deer hunting is the most effective population management tool currently available. For most landowners who lack the financial and technical means to engage sharpshooters or antifertility treatments, regulated hunting is the most cost-effective

At left -
Deer have created a 5-6 ft. browse line in this stand's midstory hemlocks, which is indicative of high winter densites.
Photo by Jesse Mohr, Native Geographic, LLC.

deer management tool. Through regulated hunting, the size and fecundity of the deer herd can be manipulated by adjusting hunter bag limits, number of antlerless and doe permits, and timing and length of season. However, for this tool to be viable there must be enough hunters.

Sport hunting continues to decline throughout the region. An article in the *Economist* (November 2008) stated that the number of hunting licenses sold in the last ten years has dropped 12 percent in Vermont and 28 percent in New Hampshire. The Hunting Heritage Action Plan, completed by the Wildlife Management Institute and the Association of Fish and Wildlife Agencies, has identified lack of access, including loss

At left -
An aerial view of The Upper Valley Stewardship Center, a 2000-acre working forest, farm, recreation center, and wildlife preserve.

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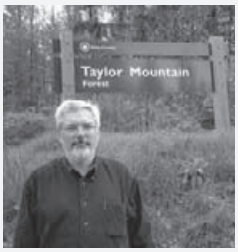
At right: Forestry students on a field tour at a restoration harvest site on Taylor Mountain. Photo provided by King County DNRP.

Balancing Forest Stewardship and Recreational Use in an Urban County

by Bill Loeber



Bill Loeber
A professional Forest Guild member for eight years, Bill has helped private landowners grow trees based on their stewardship objectives for 31 years in New England and Washington. Bill has worked 14 years for King County DNRP, and currently divides his time between public forest land management and private landowner technical forestry assistance.

With a population of 1.9 million inhabitants that includes the city of Seattle, King County is the 14th most populous county in the U.S. As the urban center and economic engine of Washington State, what may be surprising to some is that approximately three/fourths of the county is still in forest cover with rural and forest zoning designations. The existence of this urban rural interface can result in forest land management conflicts when residents' desires for goods and services from the forest exceed the ability of the ecosystem to provide them. The King County Department of Natural Resources and Parks (DNRP) is responsible for the stewardship of a 26,000-acre system of open space that includes working forests as well as parks, trails, natural areas, agricultural lands, and flood hazard management lands.

The King County Forestry Program (KCFP) was created in 1996 when county planners realized that protecting the land base through zoning was not sufficient. The program had two primary focuses: the establishment of a technical assistance program for private landowners, and a land acquisition program that targeted properties threatened by conversion to residential use that had significant wildlife habitat value, primarily regarding salmon streams. These acquired properties eventually became categorized in the inventory as working forests. KCFP's objectives for these working forests are to demonstrate the importance of environmentally sound forest management and conservation of the county's forestland; and provide educational and passive recreational opportunities for the public while preserving the site's ecological, wildlife, and water quality values.

Taylor Mountain Forest, DNRP's largest working forest, provides one example of the challenges inherent in balancing sustainable management objectives with historic recreational use patterns that may not align with those objectives. Our 2003 forest stewardship plan included a strategic planning map and an assessment of geologic, biologic, social, and hydrologic resources. It recommended three restoration harvests to occur in the initial ten-year management cycle. The first of these was implemented in the summer of 2005 on 65 acres of mature to over-mature red alder (*Alnus rubra*) and bigleaf maple (*Acer macrophyllum*). The goal was to convert this poor-quality hardwood stand to mixed conifer with a minor deciduous component.

DNRP faced several challenges in the planning and implementation of the restoration harvests. In light of the forest management land use conflicts of the 1980s and 90s in the Pacific Northwest, KCFP staff was aware that a successful, sustainable harvest would require integrating social concerns into the harvest planning, including effective communication with stakeholders and the general public.

To ensure that a wide range of stakeholder input was received, DNRP prepared a Taylor Mountain Forest Public Use Plan and Trail Assessment. Staff applied for and were awarded grant funds to complete a formal planning process and ensuing document and maps. One purpose was to get all of the recreational users (horses, mountain bikers, and hikers), local land managers

(such as Washington DNR and Seattle Public Utilities), and King County DNRP discussing the area and creating an interagency plan for how the working forests would be used for recreation. This formal process helped ensure that all user groups were represented. An equestrian group who had constructed numerous riding trails, some of them in ecologically sensitive areas, was particularly interested and involved in the planning process. Later their involvement as volunteers allowed for the construction of new trails to U.S. Forest Service (USFS)standards. This has resulted in nearly four miles of new trails (two miles through forest harvest areas), two miles of social trails brought up to USFS trail standards, and closure of two miles of social trails through wetland areas: a net gain for both recreational users and wetland functions. Although equestrians are considered the primary users of Taylor Mountain Forest, all trails are open to mountain bikers and hikers as well.

Currently, six years after the first harvest, the Douglas-fir (*Pseudotsuga menziesii*), western redcedar, *(Thuja plicata*) and western hemlock *(Tsuga heterophylla*) seedlings we planted at 425 trees per acre have a survival rate of approximately 75 percent. There are three-five bigleaf maple stump sprouts per acre as we did not apply the traditional industrial practice of thin lining the cut stumps with Triclopyr Ester. We may mechanically control any denser areas of maple coppice growth with chainsaw felling in the next two-three years.

We had very minor natural red alder regeneration as we used a shovel yarding system which lifted the logs as opposed to ground skidding which creates such a desirable seed bed for pioneers like alder. We removed vexar netting deer browse protection about a year and a half ago from the cedar as the leaders had grown above the browse line. The conifers have grown out of the seedling stage and are rapidly becoming saplings, an indication that these species are well suited to the site.

The main lesson we learned from our working forests' early harvests was to clearly explain ecological costs and benefits of any forest practice and present it to the public as early in the planning process as possible. Successful public land stewardship is ensured by managing stakeholders' expectations in a cost effective manner. ■

Editor's note: The 2010 Update of the King County Open Space Plan, one of the primary policy documents guiding the stewardship of these lands, can be accessed on the King County DNRP website. http://your.kingcounty.gov/dnrp/library/parks-and-recreation/documents/about/2010OpenSpacePlan/KC_OSPlan_2010_All_V.2.pdf

Photos provided by the King County DNRP. From top to bottom -

Post-harvest, a crew is shown building an authorized trail on Taylor Mountain.

A typical Type A wetlands area on Taylor Mountain.

Seedlings thriving on Taylor Mountain post-restoration harvest site.

> "Six years after the first harvest, the Douglas-fir, western redcedar, and western hemlock seedlings we planted at 425 trees per acre have a survival rate of about 75 percent."

SOD at Point Reyes, from page 7

MEMBERSHIP

Professional Membership in the Forest Guild is open to all forest professionals whose work is directly related to the stewardship and protection of forests, whether that work occurs through on-the-ground management, policy, advocacy, or research.

Other individuals who share a concern for forests and forestry are invited to participate as **Supporting** or **Sustaining Members**.

Students are also encouraged to join and become involved.

JOIN TODAY
www.forestguild.org

At right -
The SOD wayside exhibit near the Bear Valley visitor center.
Photo provided by Alison Forrestel.

At top -
Photo by Zander Evans.

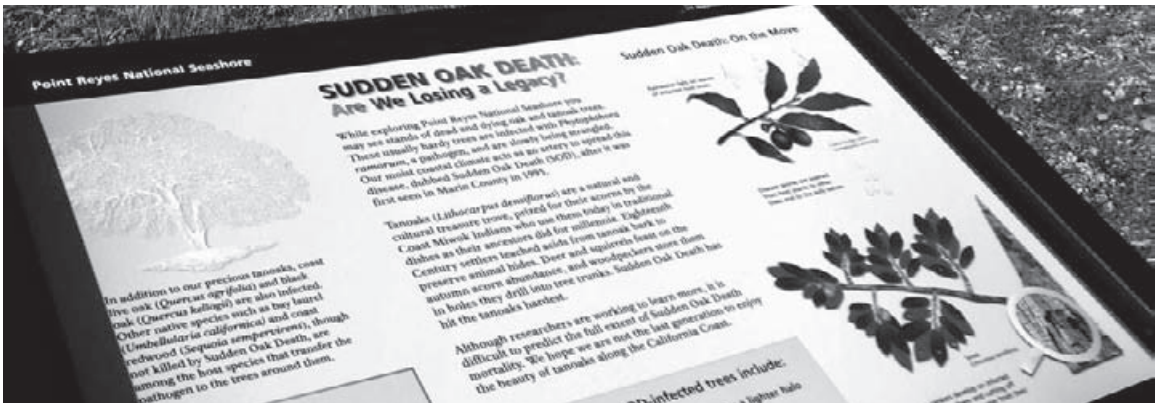
to eradicate *P. ramorum* from infected stands. Unfortunately, this has not been effective and tanoak sprouts following treatment with fire have quickly become re-infected. Managers are also concerned that additional fuels in diseased stands may lead to increased wildfire hazard. Research from the 2008 Basin Fire in Big Sur, California showed that stands with recent SOD infections burned with higher intensity than both healthy stands and stands that had been infected for several years or longer.

SOD and recreation

SOD both impacts and is impacted by recreation. Dead and dying trees may affect the visual experience for park visitors. Fallen trees may block trails before trail crews are able to remove them. At the same time, each of the millions of visitors who come to the park has the potential to spread the disease to regions not yet affected such as the Sierra Nevada foothills or the southeastern U.S. Point Reyes National Seashore staff take this issue seriously and work hard to educate visitors about SOD and what can be done to prevent its spread. Point Reyes National Seashore is takingmultiple approaches to visitor education about SOD and invasive species in general. For example, a wayside exhibit recently installed near the Bear Valley visitor center explains the ecology and impacts of SOD and provides suggestions for stopping SOD spread. Located near one of the park's most popular trails, it has the potential to reach large audiences. In addition to this exhibit, smaller signs posted at each park trailhead during the annual wet season from November through April inform visitors about ways to stop the spread of SOD. Some parks and protected areas have set up boot and mountain bike tire washing stations at trailheads both to raise awareness and to prevent spread. Point Reyes simply has too many trailheads for this to be a viable option. Parks that have not yet been affected by this disease may opt to close certain trails during the rainy season in an attempt to prevent the pathogen from arriving and becoming established.

Point Reyes National Seashore is also using the internet to reach an even broader audience. The park website has information for visitors about SOD, reports on SOD research in the park, and links to external SOD websites. Our podcasts and webcasts are aimed at educating the public, school groups, and park visitors about SOD.

As is the case with many invasive species, there is a direct link between SOD and recreation that present both challenges and opportunities. The greatest challenge is working to ensure that recreation activities don't lead to increased spread of invasives. The greatest opportunities lie in visitor education. Our hope at Point Reyes National Seashore is to connect the story of Sudden Oak Death and how to prevent the spread of *P. ramorum* to the broader story of how invasive species impact our ecosystems. If people think twice about the seeds or mud stuck to their boots, the feed they use for their horses, or the potential impact of a non-native plant they might buy for their landscaping, we're doing our job. ■



Hunting as a management tool, from page 9

due to posting or development, as a primary reason for hunter abandonment. This loss is further compounded when hunter recruitment is considered. Because hunting is traditionally passed down through families, when parents abandon the sport, their children are less likely to hunt. To make deer hunting a viable long-term management tool, landowners and land managers can help by encouraging hunting on their properties, guiding hunters to effective hunting locations, and protecting existing open space.

Our strategy at the Upper Valley Stewardship Center

The Center is located on a nearly 2,000-acre campus surrounding the village of East Haverhill including the Oliverian Valley Wildlife Preserve and Becket Farms. We share and manage the property with the Mount Prospect Academy and the Oliverian School, creating a special community that balances sustainable land practices with educational and therapeutic services for youths. This partnership with the schools is both a great asset and a great obstacle to deer management on the Center's lands.

The Center is home to a diversity of habitats—forested and open wetlands, fields, old orchards, shrub lands, and extensive hardwood and mixed forests. We have adopted a multi-use management philosophy where education, recreation, biodiversity, and timber goals are balanced across the property. Much of the Center's financial support comes from the schools. So our forests are not burdened with the same level of revenue generating needed by the average forest landowner, thereby freeing the Center to manage for recreation, education, and biodiversity goals on par with timber goals. This philosophy is reflected in how the Center is beginning to proactively manage deer.

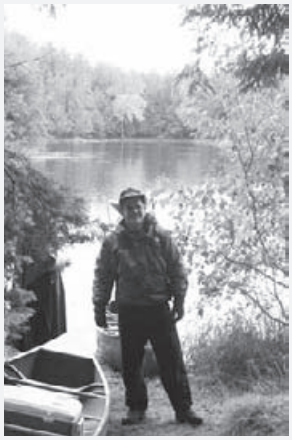
Deer management on the Center includes both hunter and multiple-species management. Prior to 2008, the Center's lands were minimally open to hunting in order to maximize safety for the 40-60 students using the Center's lands on any given day. Following two years of planning, the Center's lands were opened last year under a tightly controlled, by-permission-only hunting system. Hunters are assigned a specific portion of the property and given advice about deer habits in the area. By restricting hunting locations, the Center avoids safety conflicts with students and other recreational users of the property. The Center manages hunter quality by awarding access to hunters with proven safety and hunting track records. Hunters are also asked to submit information on their hunt. If deer become increasingly abundant, the Center will be even more discriminating in looking for dedicated hunters by requiring them to hunt a minimum number of hours.

On the Center's lands, active promotion of deer habitat occurs where it overlaps with other wildlife, recreation, and educational goals. For example, the Center is converting an old pasture to a handicapped-accessible hunting area. This pasture was selected because it is adjacent to known deer travel-ways and softwood cover; complements existing utility line right-of-way shrub cover; and does not result in loss of interior forest habitat.

Last fall, Oliverian School students moved an old sauna to a landing overlooking the former pasture. The students spent a week converting the sauna to a fully enclosed, wheelchair-accessible hunting blind. The "Hot House" will see its first use in the fall of 2011. The blind may also be available for youth hunting weekends.

The old field and adjacent forest edges are managed for a mosaic of old field herbs, shrubs, brambles, conifer cover, and forage plots. With in-house expertise and technical wildlife and forestry support from University of New Hampshire Extension, plans to promote habitat for deer, bear, bobcat, and other early successional-dependent species are being put into place. Every year, up to one third of the old pasture will be mowed. With the exception of a few small islands of dense shrubs and forage plots, the entire

continued on page 14



MISSION

The Forest Guild promotes ecologically, economically, and socially responsible forestry as a means of sustaining the integrity of forest ecosystems and the welfare of human communities dependent upon them. The Guild provides training, policy analysis, and research to foster excellence in stewardship, to support practicing foresters and allied professionals, and to engage a broader community in the challenges of forest conservation and management.

At top - An canoeing enthusiast in rural Wisconsin.

Hunting as a management tool, from page 13

wildlife management area will be mowed on a three-year cycle, maximizing habitat availability during any given year.

The Center hopes to offset the cost of mowing and forage plots through the USDA Natural Resources Conservation Service (NRCS) cost share program, which has previously supported the Center on a number of riparian planting, forest and farm management planning, habitat management, and wetland restoration projects. This strategy is allowing the Center to simultaneously increase deer hunting and access, manage for multiple species, increase habitat diversity, and provide outdoor educational opportunities for the partnering schools.

The often daunting task of maintaining a forest's diverse ecological and cultural values requires a broad ecosystem-based management approach. To this end, I believe one of the simplest and most important things landowners and land managers can do is make a dedicated effort to support deer hunting and to ensure that hunters have access to productive hunting grounds. This not only helps keep the herd in balance with its environment, it also supports the broader interest and ethic necessary to maintain the vitality and diverse values of our forests. ■

"One of the simplest and most important things landowners and land managers can do is make a dedicated effort to support deer hunting."

Protecting Calypso orchids, from page 5

Keeping the orchid thieves away: Calypso orchid is valuable on the black market and is almost always over harvested. Calypso is rare for these reasons: People steal it and destroy its habitat. They come in all ages and sizes. Any person who finds out about a Calypso site is likely to tell someone else, who tells someone else, and so on until there are no Calypsos on that site. Because I revisit specific sites to study them through the year, I have witnessed holes in the ground where plants were formerly located. I have replanted Calypso plants that an orchid thief carelessly dropped on the ground. I have also seen recreational trails built right on Calypso orchid sites by well-intentioned folks who never asked an expert. On recreational sites, it may be possible to provide one supervised site for Calypso viewing. This is most effective when knowledgeable people lead one very small group tour. In my experience, trying to take larger groups, or repeat trips, almost always leads to micro-site alteration through compaction and plant trampling. A Calypso field tour is best suited to very special people: the kind who wish to be stewards of other Calypso sites, for example.

In summary, I have just hit the high spots on what I have learned of this beautiful, endangered plant. I hope I have shown that it is possible for novices with very little knowledge of a special species to gather more knowledge as they observe and learn. Using care, revisit sites in different seasons to learn more about them. Learn as much as you can! Practice excellent forestry to protect rare species! ■

Photo of Calypso above by Dave Powell. USDA Forest Service. Bugwood.org.

The articles published in Forest Wisdom represent the views of the individual authors and are not necessarily those of the Forest Guild.

Recreation Trail Management, from page 3

(ACLD). Trail Ambassadors logged over 1,000 hours on ACLD-sponsored ATV trails in 2010.

In addition to the trail project, ACLD contracted with Dovetail Partners to develop a comprehensive recreation trail plan to guide future motorized and non-motorized trail development on the 220,000+ acres of Aitkin County-administered lands. Aitkin County also updated their county parks ordinance to limit recreational ATV use on county-managed forestlands to forest roads/trails that are signed "open" during specific periods of the year (May-October). Unsigned trails are only open for hunting related purposes during the late fall big-game hunting season. Off-trail travel is restricted to retrieving big-game animals during legal hunting season. These rules are consistent with new rules on MN DNR-administered land in Aitkin County and enhance enforcement efforts and reduce user conflicts. As of January, 2011, planning for construction of the final sections of trail is continuing to move forward. ■

Conclusions and Recommendations Resulting From the Project

1. Public lands are seeing increased environmental damage due to "under-regulated" or illegal ATV use.
2. Not all ATV users are the same. Differences range from recreational trail riders to utilitarian users with single- as well as group-organized activities.
3. Land managers have a responsibility to address ATV use and motorized recreation so that the activity can be balanced with other forest management objectives.
4. Consideration of economic, social, and environmental impacts and benefits should be included in the design of motorized and non-motorized recreation trails.
5. Emphasizing opportunities to connect existing trails to create a system can be beneficial and help to create linkages between local communities.
6. ATV use should be restricted in sensitive areas or during sensitive times of the year.
7. A comprehensive recreation trails plan can help address the full range of recreation interests while minimizing and mitigating conflicts.
8. Public involvement in recreation management planning is important and needs to be well planned, consistent, and structured.

More information about the Northwoods Regional ATV Trail System is available at http://www.northwoodstrail.net ■

> "ATV use has become a traditional use, and the problems associated with that use must be proactively managed..."

Guild Membership and Policy Council Members

Sarah Deumling - OR
Amber Ellering - MN
Scott Ferguson - OR
Dave Halley - NC
Brad Hutnik - WI
Steve Lindeman - VA
Dan Pubanz - WI
Mary Snieckus - MD
Dan Stepanauskas - NH

Photos at left provided by Katie Fernholz and Mark Jacobs.

forest **GUILD**
P.O. Box 519
Santa Fe, NM
87504

Nonprofit Org.
US Postage Paid
Santa Fe, NM
Permit No. 276

forest WISDOM

Guild State and Region Coordinators:

Northeast States

Tim Abbott - CT
tel: 860-672-6678
greensleevesenviro@sbcglobal.net

Dan Donahue - CT
tel: 860-429-5709
dfdnwf@charter.net

Jeff Luoma - NY
tel: 518-523-9329 x121
jwluoma@hotmail.com

Christopher Riely - RI
tel: 401-225-6135
christopher.riely@gmail.com

Lake States

Peter Bundy - MN
tel: 218-546-7626
ppbundy@crosbyironton.net

Thomas Wyse - WI
tel: 715-682-9651
wyse.14@osu.edu

Southeast Region

Nate & Jessica Wilson
tel: 931-924-4539
jessandnate@blomand.net

Pacific Northwest Region

Mark Miller
tel: 541-602-2180
mark@troutmountain.com

At right - Northwoods ATV Trail, Aitkin County, MN.