



TinMountain

CONSERVATION
CENTER

1245 BALD HILL ROAD - ALBANY, NH 03818

SPRING/SUMMER 2007

NEWSLETTER

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LOOK INSIDE FOR



NATURE ARTICLES



TMCC EVENTS



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DIRECTOR'S LETTER

We look to science to cure diseases, understand and solve the challenges of stretching finite natural resources to match an expanding population, and unlock latent technological advances that make coping with life's tribulations easier. However, science only can be used to solve issues when we listen. When it comes to our energy future, I would argue that we should be listening intently.

One great scientist has said, "I'd put my money on the sun and solar energy. What a source of power! I hope we don't have to wait 'til oil and coal run out before we tackle that." When great scientific minds urge us toward certain actions, why do we too often shy away? Perhaps it is fear of the unknown or change, or maybe it's because we believe the fossil fuel energy system is not completely broken, so don't fix it.

We have known for half a century that fossil fuels eventually will be exhausted. Some pollution issues associated with fossil fuels, e.g., lead and acidic deposition, have been tackled responsibly; however, the greatest potential threat may be our inability to curb greenhouse emissions and global climate change. It will take a major change in thinking and action to break the inertia developed by the fossil fuel wagon.

The great scientist mentioned above, who extolled the virtues of solar energy, was Thomas A. Edison. Tin Mountain Trustees and supporters took Edison's suggestion to heart when planning and building the new Nature Learning Center. The Center has been running on solar power since last August with the sun satisfying all electrical and about two-thirds of the heating needs. Solutions are available, and more could be if we are open to new ideas.

Because scientific endeavors require both intensive and extensive research as well as review by peers, findings and theories do not happen overnight. If we truly value science, it seems that we should embrace the new information and ideas and put them to good work. The American composer and philosopher John Cage may have said it best, "I can't understand why people are frightened of new ideas. I'm frightened of the old ones."

BIRD HABITAT PROJECT



This summer, Tin Mountain will launch a major bird habitat enhancement and monitoring project on the land at the Nature Learning Center. Concentrating on four habitats including open field, mid-succession forest, mature forest, and wetlands, bird populations will be monitored throughout the year with point counts and banding efforts. Management

efforts to enhance bird populations will include releasing promising mast trees, maintaining snags and coarse woody material, planting wildlife shrubs and trees in selected locations, maintaining fields, and a variety of stewardship activities.

The ultimate goal of the project is to garner interest and support within the community for native wild birds and conservation issues affecting them. We hope also to provide a useful record of seasonal species use of the four habitats and cultivate interest in citizen research efforts. This will be an excellent opportunity to involve experienced birders as mentors to students considering an environmental career or simply those people with a natural curiosity about natural science.

BIRTHDAYS AT TIN MOUNTAIN!

Here's a different twist for celebrating birthdays for young and old. Tin Mountain naturalists will tailor a nature birthday party that will tickle the fancy of outdoor enthusiasts of all ages. Why not have a little fun outside exploring the natural world, playing games, and enjoying ice cream and cake? Details on page 11.

THE GREAT ROOM IS A GREAT PLACE FOR A FUNCTION

If you need a fantastic place to hold a special event or function, what better place than the Dixie & Buzz Coleman Great Room at the Tin Mountain Nature Learning Center. The post-and-beam facility and grounds are beautiful, and your rental fee goes to support Tin Mountain environmental education programs in local schools and communities. Give us a call to learn more.



THE BUILDING WORKS GREAT!

Thank you! Thank you! Thank you! From the entire staff, Trustees, volunteers, and members, a special thanks to everyone who supported the capital campaign project to build the new Nature Learning Center on Bald Hill in Albany. It was a colossal undertaking, many years in the planning stages, but the organization finally has a permanent home. It is testimony to a “very excellent” idea (borrowing a Stoney Morrell adjective) that attracted many very excellent people over the past 7 years to do very excellent work.

The layout of the building, the mechanical systems, local materials/craftsmanship, and the aesthetics combine to produce an efficient workspace and a tremendous teaching vehicle. The classroom/laboratory substantially enhances our teaching efforts and the presentations in the beautiful post-and-beam Coleman Great Room and Brett’s fireplace add just the right atmosphere to Tin Mountain programs. At long last, the very substantial Tin Mountain natural history collection of books and references is available to the public for perusal in the new library. The Goldberg Observatory is a great place to enjoy a cup of tea or coffee and see who has been attracted to the birdfeeders. There are always great displays from the natural world in the Macomber Lobby, as well as works from the featured artist of the month.

This spring there is plenty of activity outside as work begins on landscaping, which will include the Abbott’s Ice Cream/White Mountain Oil Court Yard. The West Oxford Agricultural Society (Fryeburg Fair) barn, preserved in 2004, provides a look at past construction techniques and showcases the fine restoration work accomplished by a team of local craftsmen. Work has also started this on the Stoney Morrell Boardwalk and wildlife observation platform along Chase Pond.

In addition to the building itself, the opportunities afforded by having the adjacent land and pond for programs, the barn for storage and seasonal program space, and the ready access to teaching space and props make a tangible difference in the teaching efficiency of the Tin Mountain staff. Each day, the facility hums with activity from Nature Nuts and guided trail walks to school field trips and volunteers doing all sorts of helpful tasks. The public is invited to visit and become more involved.



WOODS IN THE BUILDING

The new building has provided Tin Mountain with a unique opportunity to promote the use of local materials and showcase the fine craftsmanship in the area. The economic, social, and environmental benefits might prompt some to pay a premium for local goods and services; however, Tin Mountain’s experience suggests that the cost difference between finely crafted custom cabinets from local woods and “off-the-shelf” cabinets from big box stores can be minimal. The difference in quality and durability is enormous.

Wood from 20 local tree species is represented in the new Nature Learning Center, and the stories of their procurement are as interesting as the woods themselves. The white pine that was used to sheath the entire building, to make the purlins and short beams in the great room, and to panel the main entry room was harvested from the building site and sawn on-site with a portable sawmill. Some of the larger white pine beams in the great room were harvested by David Shedd from trees planted by his grandfather on his land in Bartlett. The northern red oak used for the 10 larger posts (10” x 14” x 9’) in the great room were harvested from five trees on David’s land with enough additional wood to lay the floor and build the first two fires in the great room fireplace.

The spalted sugar maple used in the kitchen and older red maple with the blue stain were materials that one of the carpenters had on-hand and was willing to part with at an excellent price. Much of the other sugar maple, yellow birch, white ash, and red oak lumber was sawn by our construction manager, Kim Thomas, for another client almost 10 years ago, and it was made available at a fair price. Our construction manager, farmer, and past boat builder also obtained the black cherry, basswood, and butternut that was taking up room in the barn of the fellow from whom he buys his hay. The beautiful copper beech (European) that was used in many door panels was sawn by Kim from a shade tree on the coast of Maine over 15 years ago and kept for some unforeseen purpose all that time.

The story of the woods used in the building is one of resourcefulness and commitment to using locally harvested and processed timber. The building affords an opportunity to display local woods that are too often overlooked during building and remodeling projects. By showing the different woods that are available and applied to various uses, it is hoped that more people will choose to work with local species. Weekly building tours are available every Saturday at 9 AM, or a tour may be arranged by calling the office at (603) 447-6991.



Building Photos c. John Hession



ORCHID BIOLOGY

OCCURRENCES IN NEW ENGLAND

Guest Writer, Jeff Lougee, The Nature Conservancy

Orchidaceae, the orchid family, is a vast and prolific group of plants. Although they are found worldwide, most wild orchids are found in the tropics. A wobbly spring walk onto a kettle-hole-bog in northern New England would reveal a variety of orchids including the elusive dragon's mouth (*Arethusa bulbosa*), a magenta-pink orchid. In the tropics, many of the thousands of species of orchids worldwide grow as epiphytes in the canopy of tropical rainforests. Living high above on large limbs of rainforest trees, they derive no water or nutrients directly from host trees; instead, they extract nutrients from rainwater and air. Over the centuries, a delicate mantle of soil collects, which provides habitat for other species inhabiting the rainforest canopy.

Orchids are flowering plants (angiosperms) producing seeds in enclosed fruits and currently dominate the earth's flora. Orchid domination of the epiphytic plant communities of tropical rainforests speaks to their astounding diversity. These epiphytic plant communities represent nearly ten percent of all higher plants.

Orchid diversity is more than sheer species abundance. Orchid biology provides clues to the uncanny evolutionary processes that created them. They have irregular flowers (asymmetrical) with upper and lower parts comprised of three sepals and three petals. Many plant families have irregular flower shapes; however, only orchids fuse their male (*stamens*) and female (*pistil*) reproductive parts into a single structure called the *column*. The lower petal, or lip, serves as a landing platform for specific pollinating insects. The flower structure provides a sublime mechanism for getting a preferred insect to rub against the column, thereby collecting/depositing pollen.

For example, grass pink (*Calopogon tuberosus*), a common bog orchid in the northeast, has an upside down flower, i.e., the lip is upright rather than protruding. Carpenter bees land on the lip, deceived by superficial hairs suggesting a nectar source. The lip promptly collapses backwards along a hinge sending the bee into the curved cradle of the column. There it is coated with pollen or delivers a welcome pollen package.

Orchid flowers deploy pollination strategies that have generated interest for hundreds of years. The flower offers a glimpse of orchid biology, the relationship with their habitats, and as the famous evolutionary biologist Charles Darwin found, the history of living things. In 1877, Darwin wrote in *The Various Contrivances by which Orchids are Fertilised by Insects*:

"In my estimation of orchids, hardly any fact has struck me so much as the endless diversities of structure – the prodigality of resources – for gaining the very same end, namely, the fertilization of one flower by pollen from another plant."

Most orchids go to great lengths to ensure cross-pollination (plants swapping genes), and Darwin saw in orchids one of nature's most demonstrative expressions of genetic diversity driving evolutionary processes. This thinking is evident Darwin's great work, *On the Origin of Species*, published in 1859.

In *On the Origin of Species*, Darwin introduced his theory of *natural selection*, which maintains that competition for survival serves to filter the fit from the unfit. Over the millennia, nature will favor organisms possessing traits that enable successful and vigorous reproduction. Orchids had perfected thousands of "contrivances," as Darwin called them to ensure successful cross-pollination, reproduction, and genetic diversity. Robust cross-pollination enables the swapping of genes required for adaptations and emergence of new species.

Orchids produce abundant tiny lightweight seeds, and consequently, many orchids depend upon the wind for dispersal. Although their flowers are stunningly complex, their seeds are nondescript and require a fungal host to germinate. Orchid seed dispersal depends upon flooding the landscape with lightweight seeds, which aids in finding the right fungal host. Producing vast amounts of seeds is complicated by orchids producing only enough pollen to pollinate one or two plants. To ensure none of this precious resource is wasted, orchid pollen is packaged into waxy masses called the *pollinia*. The pollinium is picked up by the insect and the entire mass deposited at the next flower visited. Occasionally, a mosquito is observed flying with a pollinium mass on its head!

The great diversity and beguiling biology of orchids is rooted in this delicate obligate process ensuring successful reproduction and genetic diversity within a population and helped shape Darwin's thoughts about natural selection. Today's orchids are the result of competitive forces at work over millions of years. One species evolved a clever method to attract and deposit pollen on a bumble bee, and then another genetic adaptation imparted a more effective means. Some mutated slightly resulting in a switch from bumble bees to moths as pollinators. Still others inhabited wetlands matching the emergence of their flowers to the activity of local pollinators while another met with greater success in a sunlit forest.

Of the 200 orchid species in the U.S. and Canada, roughly 60 occur only in southern Florida. Some are common and widespread species, others are exceedingly rare. New England has about 60 orchid species and are split about evenly by habitat preferences. Some 30 species inhabit wetlands, a few of them preferring bogs, but most take advantage of more enriched sites like sparsely wooded fens. The other half are found in a variety of places from the backyard to the deep woods.

One striking group of New England orchids is the
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NEW FACES AT TIN MOUNTAIN

Along with our new building, there are many new faces at TMCC. Welcome to Chris De Nuzzio, who was the camp director at our Jackson site last summer and flowed right into her new position as Teacher/Naturalist in August. One of Chris's first jobs was helping move Tin Mountain into the new building. Once the dust settled, she jumped right into teaching our Environmental Year program in Bartlett and Tamworth, as well as Project K.I.T.E. programs in many of the other schools. Chris's background includes a variety of environmental teaching jobs and four years teaching Middle School Science. Chris has a B.S. in Environmental Science from the University of Massachusetts, Lowell, and a M.S. in Environmental Studies from Antioch New England Graduate School. Chris has hiked all of the New Hampshire 4,000 footers and enjoys hiking in all seasons. Her other environmental interests include vernal pools, and the amphibians that inhabit these unique wetlands.

Chris replaced Teacher/Naturalist Joshua Potter, who changed positions to become the Outreach Coordinator for TMCC. His new position entails setting up new programs such as our brownbag lunch speaker series, adult nature courses, and field study courses. He will continue some teaching duties including the Forests For The Future program.

We were thrilled to have had two interns on staff this winter, Jennifer Bean and Berkley Cline. Jennifer Bean came to us as a graduate student at Antioch University New England in the Environmental Studies Department. She worked on interpreting the "green" aspects of the Nature Learning Center, including the solar thermal heating system, photovoltaic electricity production, and the sustainable woods used throughout the building. Jen painted diagrammatical solar exhibit murals, facilitated a Tin Mountain solar nature program, and made the front page of the April 19th Mountain Ear. Jen successfully completed her graduate studies this spring.

Berkley Cline was completing her graduate studies in Environmental Education from the University of New Hampshire when she began her internship. She worked closely with the teaching staff leading a variety of programs from Project K.I.T.E. to Nature Nuts. Berkley is a familiar face around Tin Mountain Explorer Camps where she was the Assistant Director for numerous years. Berkley successfully earned her Masters Degree in May and is continuing on at TMCC this spring and summer.

Steve Thomas has joined us part time as the Building and Properties Maintenance Manager. Steve is responsible for keeping the fires stoked, the driveway plowed, and the buildings maintained here and at our various summer camp outposts.

You might recognize him as the guy who always has a camera around his neck on many of our Nature Program field trips. He is an avid photographer and wildflower enthusiast. Welcome to all of our new staff members and thank you to our interns.



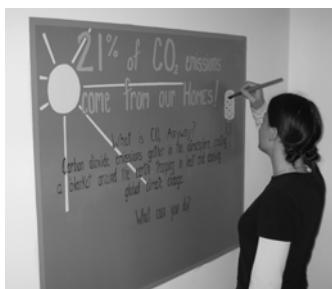
LAST CHILD IN THE WOODS

(Saving our Children from Nature-Deficit Disorder)

Review by TMCC Trustee Richard Stewart

"Nature-Deficit Disorder." Remember where you first learned this term, for it's certain to enter America's vocabulary in much the same way as "Silent Spring." Indeed, not since Rachael Carson's landmark book warning of the unintended consequences of the unchecked use of pesticides has a book had as great an impact on naturalist educators as Richard Louv's Last Child in the Woods.

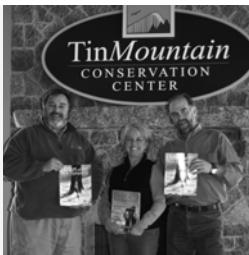
Only this time the subject is not falcons or eagles, but our own children and the insidious factors of a modern society that might be impacting their intellectual, emotional, social and spiritual development. The term Nature-Deficit Disorder is introduced by Louv not as an existing medical diagnosis, but as a concept supported by both scientific and anecdotal data, that can be recognized and addressed. Further, the book is a call to parents and educators to address our failures as a community to provide our children opportunities for unstructured nature play, and the consequences of this oversight.



Ecopsychology investigates the link between the human mind and the environment. Branches of this field have demonstrated the therapeutic values of human/pet relationships and in human/garden relationships. New studies indicate that just viewing a landscape contributes to the recovery of surgical patients, and also decreases illness among prison inmates. Louv writes "A growing body of evidence indicates that the direct exposure to the natural world is essential for physical and mental health," and this only makes sense when one considers how the human nervous system has evolved over millennia to interact with its natural environment. Some of the benefits are: decreased illness, improved recovery times, reduced stress levels, better motor coordination, and improved academic performance. But, these benefits are frequently being denied the next generation as we fail to recognize the full impact of the natural world on the still-developing nervous systems of our young people. He further points out ". . . new studies suggest that exposure to nature may reduce the symptoms of Attention Deficit Hyperactivity Disorder (ADHD) and that it can improve all children's cognitive abilities and resistance to negative stresses and depression."

Louv amply documents the myriad of ways that today's children have become increasingly distanced from a direct exposure to nature. Some of these ways are obvious to any interested observer such as increased television viewing, internet use and video games, or the lack of open spaces in

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TMCC partners with *Heart of NH* magazine for membership benefits. Look for Tin Mountain naturalist articles in upcoming issues.

NEW MEMBERSHIP LEVELS

Tin Mountain has been a membership organization for a number of years. In the past, the tangible benefits of membership were limited owing to no public base from which to provide services. With the completion of the new building, the benefits of membership have expanded significantly. Membership provides some very real advantages. In addition, the membership effort now will be separated from the Annual Fund Drive, Equipment Drive, and other development efforts.

Trustee Beth Sturdevant best explained the difference between membership and fundraising development. "People will join Tin Mountain initially, for the programs, events, and services that they can receive as members. Once they become members and are involved with Tin Mountain, they begin to more fully appreciate the organization and will look for ways in which they can give back to the organization through volunteering, contributing to the Annual Fund, bringing in new members, and other supportive activities."

Besides free admission to all Community Nature Series Programs, invitation to member-only exhibits and events, receipt of all Tin Mountain publications, and e-mail notification of events, family memberships also receive discounts to Tin Mountain summer camps and a one-year subscription to the magazine *Heart of New Hampshire*. Higher membership levels offer other premiums such as hats, t-shirts, polar fleece vests, and field guides.

The various levels of membership have been assigned new names corresponding to the natural succession of tree species that occur in a deciduous forest. The six categories of membership range from pioneer, early-succession tree species (i.e., quaking aspen and white birch) to mid-succession tree species (i.e., white ash and northern red oak) to late-succession tree species (i.e., American beech and sugar maple) found in climax northern hardwood forests. Just as many different tree species make up the forest, Tin Mountain needs members at all levels to sustain the organization.

ARTISTS DISPLAY WORK

Andrea Kennett was the first artist to display original artwork at the TMCC Nature Learning Center. Her lush oil paintings depicting local scenes were well received. Rotating monthly displays are planned throughout the year. Edward Cooke's art will be on display in June, followed by photographer Andrew Thomas and painter Carl Owen.



NEW PROGRAMS AT TIN MOUNTAIN

Several exciting new Tin Mountain programs have been launched that afford opportunities to delve deeper into various natural science and cultural history topics. The new Nature Learning Center provides an excellent place for inside presentations, in-depth study, and outside exploration of nature.

Adult Nature Courses were kicked off in January with *Winter Ecology* course by Dick Fortin. Through four classes and a field trip, students learned about winter conditions in the natural environment, plant and animal adaptations, winter wildlife signs, and the influence of snow on wildlife. Carol Foord began her four-week course, *Settlement History of the Saco Valley & Mt. Washington Region*, in late February with a look at the physical and human factors that have shaped the land. Through selected readings, artifacts, lectures, and field trips, students learned about the rich history of the region from the last glaciation through the Native American contact period with the Europeans to the agrarian settlement period. In May, Executive Director Michael Cline offered *Botany for Northern New England* covering the basics of plant biology, plant anatomy/morphology, and leading to improved taxonomic and plant identification skills.

Field Study Intensives are one-day to three-day hands-on course covering specific topics that are designed to build and enhance naturalist skills. *Winter Photography* was offered in January with Ed and Kathy Bergeron. TMCC staffers Mike Cline and Joshua Potter taught *Dendrochronology and Winter Tree I.D.* in March.

On the second Thursday of every month, Tin Mountain presents the **Eco-Forum** brownbag lunchtime speakers series. Fashioned on the Commonwealth Club of CA, Cleveland City Club Forum, and the National Press Club Luncheons, the *Eco-Forum* brings noted experts to the Nature Learning



Center for presentations on a wide variety of provocative issues followed by a Q&A session. In January, Rob Del Mar and Dr. Eric Morgan spoke of climate change-induced effects in the arctic region noted on their trek across Baffin Island last summer. February brought John Burroughs Medal recipient and noted naturalist Ted Levin to speak on *The Beauty of Evolution*. In March, Dr. Sally Stockwell of Maine Audubon Society discussed the appeal of *Plum Creek's Plans for the Moosehead Lake Region – Paradise Lost?* Renowned ecologist Dr. Rick Van de Poll spoke in April on *No Net Loss of Wetlands*? And Rachel Rouillard, Director of LCHIP explored *A State Role in Land Conservation*? in May.

Parents and grandparents should not miss the opportunity to bring their 3- to 5-year-olds to **Nature Nuts** each Wednesday morning from 10-11:30 AM. Each week, a Tin Mountain teacher/naturalist leads a seasonal exploration of the natural world that is guaranteed to fascinate both the Nature Nuts and parents/grandparents. Join us at the Nature Learning Center for a morning of nature songs, crafts, hikes, and games based on the theme of the day.

For upcoming Adult Nature Courses, Eco-Forum topics and Nature Nut themes visit our website at www.tinmtn.org



TMCC PURCHASES 1,200 ACRES OF TIMBER LAND



An anonymous donor with a passionate interest in sustainable forestry and the natural environment provided funds for Tin Mountain Conservation Center to purchase 1,181 acres of timberland in Conway from The Nature Conservancy. The donor, who provided all funds necessary to purchase the land, believes that Tin Mountain has earned the support and confidence of local communities and is uniquely positioned to teach by example about sustainable forest management and to impart a strong stewardship ethic.

According to Tin Mountain's Board of Trustees Chair, David Sturdevant, "Acquisition of the timberlands not only protects dwindling productive forestland in the valley from future development, but it also provides Tin Mountain with new education opportunities and a chance to demonstrate that well-managed forest lands can make economic and ecological sense. This was a very generous gift, and we plan to make certain that it is a wise investment for the future of our local communities and our organization."

Sturdevant continued, "We are perhaps best known for the environmental education programs in local schools, summer nature camps, and community nature program series. However, among our official purposes drafted 26 years ago are: 'to promote understanding of forest management, wildlife management, ecology, and conservation practices ... through operation and maintenance of outdoor classrooms where various practices may be observed in action, 'to educate the general public regarding good forest management' and 'to maintain properties dedicated to good conservation practices.' This recent acquisition fits that purpose perfectly."

The lands obtained are a portion of the former Bear Paw lands that were donated to The Nature Conservancy in 1998 including a 500-acre parcel south of Route 302 along the Fryeburg/Conway town line as well as several separate and adjoining lots (67 to 239 acres in size) north of the East Conway Road approaching the Green Hill Preserve.

"The land was carefully managed in the past, is well stocked with high volumes of timber, and includes many valuable ecological and recreational natural features," said Tin Mountain Executive Director and forester Michael Cline. "The timing of this major gift could not be better. Our new nature learning center was constructed with the goal of putting locally harvested and processed wood in the hands of local craftsmen. Now, owning our own forestland, Tin Mountain can demonstrate responsible forest management to supply that local timber and conserve the forests that underpin our traditional way of life."

The local Upper Saco Valley Land Trust, initially established by Tin Mountain and others, will hold and monitor a conservation easement on all of the forest properties. The easement allows for sustainable forest management, educational programs, and low-impact traditional public recreation, but prohibits clearcutting, subdivision and development. The donation nearly triples the land trust's easement holdings from 670 acres to 1,851 acres.

It will take some time to explore the new lands. Tin Mountain is planning numerous public trips to visit them and to begin planning for its future use. Call for more information.

**Stone Mountain Arts Center presents
Richie Havens**
December 2nd to benefit Tin Mountain Conservation Center!
Ticket information at www.stonemountainartscenter.com

Noteworthy



Hillclimber Andrew Toplyn
Top Pledge Raiser



Mary Power Recognized
For Hillclimb Efforts



Seth Rockwell, Speaker
Building Dedication



Nature Learning Center
Builders Acknowledged



Garden Club Holds
Annual Meeting at TMCC



School Students Enjoy
Nature Learning Center



Winter Camp and
Festival are Lots of Fun!



Tin Mountain Honors
Dixie and Buzz Coleman



Students Benefit from
TMCC Field Trips



Nature Nuts Held Every
Wednesday Morning



2007 First Season Auction
was a Great Success!



Mother Earth Visits
TMCC on Earth Day



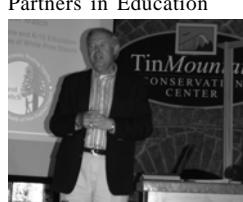
TMCC Receives Going Green
Environmental Hero Award



Judy Fowler Named Honorary
Trustee by Trustee Chair



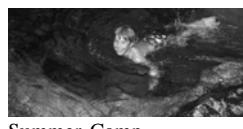
Dave and Jeanne Mason
Partners in Education



UNH Professor Rock Invites
TMCC as Forest Watch Host



TMCC Winner of 2007
Merit Award for Excellence
from Plan NH



Summer Camp
Registration Resumes

Last Child In The Woods

(continued from page 5)

many urban environments. But, perhaps less obvious are other factors such as overprotective homes and schools based on unrealistic fears or threatened liability, or organized sports instead of self-organized creative play, or nature lessons through video documentaries rather than through hands-on experience, and more time required indoors for homework. One reviewer told of a toddler who, when visiting from the city, reacted in terror to the suggestion she put her bare feet on a mowed lawn. The mother admitted to avoiding grass because she feared it might be too full of germs! While this may seem extreme it only points to a growing unnatural alienation from our biological environment. Louv speculates that while attempting to protect our children from the many real or imagined fears, we may be actually exposing them to other risks, including obesity and possibly ADHD.

So, how does Tin Mountain Conservation Center respond to the call of this book? Simply because we live in a more rural environment doesn't mean that our children are immune from Nature-Deficit Disorder. The fact that through Tin Mountain programs we expose over 3,000 children each year to the magic and mystery of the natural world is already a giant contribution. And the philosophy of beginning with the children has been a sound foundation. However, if we hope to generate the support needed to continue and grow our efforts, it is first going to require expanding this message into a broader segment of the adult population by getting educators and parents more involved. Some groups have already co-opted the No Child Left Behind theme and re-worked it into a program called No Child Left Inside.

A good starting point is to read Richard Louv's book to begin a discussion on this topic. It's a thought-provoking book, a wake-up call for anyone concerned about the future of our children, and it's full of suggestions for parents, educators and community leaders.



Orchid Biology

(continued from page 5)



lady's slippers. The lip of their flower is modified forming a large, hollow pouch resembling a slipper (or moccasin). Most common is the pink lady's slipper (*Cypripedium acaule*), which are commonplace in NH due to the extensive acidic granite bedrock. In its northern range, the pink lady's slipper may take on an albino form. Thus, white lady's slippers in NH are most likely pink lady's slippers. The unique pouch of this species is another "contrivance" that ensures pollination. Insect pollinators, enticed by fine hairs, enter the pouch through a thin slit in the top. Once inside, the insect finds the pouch devoid of nectar and must crawl out through the top since the slit is a one way street. Exiting the pouch, they brush against the overhanging column.

Each year, the NH Natural Heritage Bureau receives phone calls when pink lady's slippers are flowering - "hello, I'd like to report a rare orchid in my backyard." Although less common than some species, their relative abundance means they don't receive special protection under state or federal law. Conversely, any of the other five species of lady's slippers native to the northeastern U.S. are very uncommon species. The small white lady's slipper (*Cypripedium candidum*), is only known from a few places in central New York and the upper mid-west and is protected by the federal endangered species act.

The list of threats to orchids is long. Tropical deforestation may eliminate dozens or even hundreds of species each year that have yet to be described. Orchid collecting is also a potent threat, particularly because it often focuses on the rarest species. The movie *Adaptation*, which is based on a book called *The Orchid Thief*, provides a glimpse into the world of orchid collecting in southern Florida. In the movie, an orchid collector searches south Florida swamps for the ghost orchid, a species named for its rarity. The collector hires Seminole Indians to collect orchids since they are immune from the state and federal laws protecting them. The strategy is an adaptation, or "contrivance" used by humans to facilitate a success - one running counter to thousands of years of evolutionary forces that gave rise to the ghost orchid.

Orchids face the same threats in New England. Two years ago, 20 stems of large yellow lady's slipper (*Cypripedium pubescens*) vanished from Weeks State Park in Lancaster, NH. It was an utter waste since orchids are notoriously difficult to transplant. Habitat conversion and fragmentation via development is New England's version of tropical deforestation. Mitigation plans involving transplanting populations of endangered orchids to pave way for development have failed miserably. A few dozen stems of a federally protected species called small whorled pogonia (*Isotria medeoloides*) were removed from a site slated for development in central NH and transplanted to an area of apparent suitable habitat. None made it to a second growing season.

Private conservation groups and government agencies like The New England Wildflower Society, state Natural Heritage Programs, the U.S. Fish and Wildlife Service, and The Nature Conservancy have invested significant resources to protect our rare orchids. In the last 20 years, dozens of populations of rare orchids have been protected from development by land acquisition, the understanding of habitat requirements, and consequently, species distribution has grown remarkably. Nearly half of The Nature Conservancy's preserves in New Hampshire provide habitat for rare orchids including small whorled pogonia, green adder's mouth (*Malaxis unifolia*), small and large yellow lady's slippers (*Cypripedium parviflorum* and *pubescens*), three birds orchid (*Triphora trianthophora*), auricled, heart-leaved, and lily-leaved twayblades (*Listera auriculata*, *cordata*, and *convallarioides*), and showy orchids (*Galearis spectabilis*). They are testament to yet another powerful adaptation – the tenacious will of many to protect our irreplaceable biological diversity. Within their spirit lies a hopeful and rich future.

WHY NOT RENT A NATURALIST?

Tin Mountain naturalists have been poking around the greater Mt. Washington Valley and northern New England for a very long time – collectively for more than a century. They know where to see the best spring flowers, the most warblers and other neo-tropical migrants, the most interesting old growth forests, the neatest wetlands, the best wildlife canoe outings, and much more. If you, a group or business would like to spend a day with a Tin Mountain naturalist exploring natural features of your choice, call Joshua for more information at 603-447-6991.

We can plan an unforgettable nature experience for you.



TIN MOUNTAIN SAYS GOODBYE TO TWO EXTRAORDINARY FRIENDS

Stoney Morrell was a tremendous friend of Tin Mountain and dedicated much time to making it the respected environmental education organization it is today. Tin Mountain founder Barbara Henry set her sights on Stoney early, recruiting him to serve as a Trustee shortly after the organization was formed and later as Chair of the Board. With Stoney's love of nature, it was a natural fit and he helped develop the bedrock principles that have guided the growth of Tin Mountain programs over the ensuing years. He was always a phone call away and eager to help in all ways possible. We have many fond memories, but we miss him tremendously.

Steve Card was a long-time supporter of Tin Mountain and participated in many programs. He was always looking for tangible ways to help, whether it was working with the Forest for the Future school program or helping to organize a trail day on Tin Mountain property. Steve was part of the Northeastern Lumber Manufacturers Association, and each year he would organize a tremendous volunteer day putting their employees to work for Tin Mountain. Since most were timber scalers/graders, one year they graded all the timbers for the post-and-beam great room at the Nature Learning Center. Another year, they built 14 picnic tables and a foot bridge on one of the trails. He was one of those people that quietly got many things done. He was a great friend, and we miss him.

VOLUNTEER OPPORTUNITIES

Tin Mountain Conservation Center relies heavily upon volunteers to fulfill our mission to bring environmental education to the Mt. Washington Valley. The opening of the new Nature Learning Center presents many new volunteer opportunities, and we need your help more than ever. Please call us at (603) 447-6991 or email Joshua Potter at jpotter@tinmtn.org if you are interested in helping out at special events, at our Nature Learning Center, or on the trails throughout our 138 acres of forests and fields.

Tin Mountain volunteers are vital to our many special events held throughout the year, including our First Season Dinner/Auction in March, Earth Day in April, the Mt. Washington Bicycle Hillclimb and Century Ride in August, the Fryeburg Fair in September, and Halloween Hoots in October. At our Nature Learning Center, we always need friendly volunteers to greet guests and help answer phones, assist with office jobs, and help to organize our natural history library. This spring and summer, we will have lots of exciting opportunities for volunteers to pitch in on our grounds. There is much landscaping to be done, trails are always in need of upkeep and blazing, fields need to be maintained, and in June, we plan to start our boardwalk project on Chase Pond. There is always something going on at Tin Mountain, and we would be grateful to have your help!



HANDMADE QUILT-TMCC RAFFLE

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RAFFLE WINNER-TAMMY ARMSTRONG



TAXIDERMY COLLECTION *Donated by Tom McAllister*



ROCK AND MINERAL COLLECTION *Donated by Charles and Maryanne Harding*



The Tin Mountain community generously contributed \$1.6 million to the Nature Learning Center Capital Campaign Fund.

We still need to raise \$500,000 to reach our goal.

There are a number of ways to help:

Make a contribution now,
Make a pledge of support,
Make a gift of stock or securities,
Make a gift of personal property,
Make a life income or deferred gift,
Purchase an image for yourself or loved one on the nature mural prominently displayed in the lobby.

We would be happy to talk with you.

WISH LIST

Bio-scope	Garden tools
Field guides of all sorts	Hand tools of all types
Old logging tools	Coleman stove repairs
Fossils	A taxidermist
Easel/flipchart	DVD player
Vacuum Cleaner	
Mounted or carved songbirds, birds of prey, waterfowl, etc.	
Sugaring tools (spiles, buckets, brace & bit)	
Trail tools (loppers, hand saws)	
Subscriptions to nature magazines (back issues as well)	
Science and natural history references for library	
Table Cloth for Dining Room Table in Library	
Native Plants for Nature Learning Center Gardens	

35TH MT. WASHINGTON AUTO ROAD

BICYCLE HILLCLIMB

AUGUST 18TH

On February 1st, the day on-line registration opened for the Mt. Washington Auto Road Bicycle Hillclimb, the field filled to its capacity – 600 riders – in just 32 minutes.

This 7.6-mile all-uphill race to the summit of the highest peak in the northeastern United States is the primary annual fundraiser for Tin Mountain. For the privilege of pedaling up the unrelenting grade, sometimes with winds of 40 mph or more, elite and amateur cyclists pay an entry fee of \$300, from which all proceeds go to the educational and environmental programs of the Conservation Center. Tin Mountain issues a big thank you to the Mt. Washington Auto Road and all of the riders. We are always looking for volunteers for the Hillclimb.

6TH ANNUAL MT. WASHINGTON CENTURY RIDE

AUGUST 19TH

The *Mt. Washington Century* is a supported 100-mile bicycle ride around Mt. Washington on August 19th benefiting Tin Mountain programs. The Century begins and ends at the base of the Mt. Washington Auto Road in Pinkham Notch, the same location as the *Mt. Washington Auto Road Bicycle Hillclimb* held the day before on August 18th. Several alternatives routes are available for those not opting for the entire 100-mile ride. One is an 80-mile route around the mountain, and the other an out-and-back 40-mile ride. Water, snack, and comfort stations are located at strategic places along the course.

For more information and to register, go to the Tin Mountain website www.tinmtn.org and click on the TMCC Mt. Washington Century. The homepage provides detailed information about routes, registration, pledge sheets, and other useful information.

SPECIAL THANKS TO OUR VOLUNTEERS

Theresa Beckett	Ginny and Warren Martin
Katrine and Frank Biddle	David McKie
Carol Brown	Mary Meier
T.O. Currier	Nancy Morrison
Carol and Phil Gaeta	Tara Taylor
Susan and Don Goodwin	Miles Waltz
Sally and Ron Kratt	Merle and Herm Weber



NEW ! TIN MOUNTAIN BIRTHDAY PARTIES

For adults and children turning 3 and older
Hour-long program led by a TMCC Teacher/Naturalist
Use of party room and kitchen for 2 hours
Refreshments supplied by the family
Subject to facility rental policy
Cost: \$100/members, \$125 non-members
Limit: 15 children, Each additional child- \$5
Children ages 2 and over are included in the count
Cake: Additional \$15-\$30 Price varies by size

PARTY THEMES

Animal Tracking
Awesome Amphibians
Incredible Insects
Rocks and Minerals
Astronomy- Evening Star Watch
Amazing Avians
Owls of New Hampshire
Forest Fun
Seasonal Nature Hike



ECO-FORUM

FREE AND OPEN TO THE PUBLIC

LOCATION: NATURE LEARNING CENTER

JUNE 14, NOON-1 PM

WHERE ARE THE WILD TROUT IN NH?

Dianne Emerson, NHF&G Fisheries Biologist

JULY 12, NOON-1 PM

Windpower-Siting Challenges in New England

Ken Kimball, PhD, Director of Research, AMC

August 9, Noon-1 PM

Zoning-From Smart Growth to Sustainability

Steve Whitman, Planning Consultant,

Jeffrey H Taylor & Assoc



Tin Mountain

CONSERVATION CENTER

Basic Membership:

- Free Admission to Nature Program Series
- Invitation to Member Only Exhibits and Events
- Email Notification of Upcoming Events
- Tin Mountain Decal
- Voting Privileges at Annual Meeting
- Quarterly Bulletin with Tin Mountain Updates
- Membership Tax Deduction

www.tinmtn.org



\$35 Quaking Aspen (Individual)

- Basic Membership Privileges for One Adult

\$50 Paper Birch (Family)

- Basic Membership Privileges for Two Adults and Children 18 and Under
- Discount to Tin Mountain Camps
- Subscription to *Heart of NH Magazine* www.heartofnh.com

\$100 White Ash

- Paper Birch Plus:
- Tin Mountain Hat

\$250 Red Oak

- White Ash Plus:
- Bring a Friend! Free Admission to Nature Program Series for a Friend
- Tin Mountain T-Shirt Size _____

\$500 American Beech

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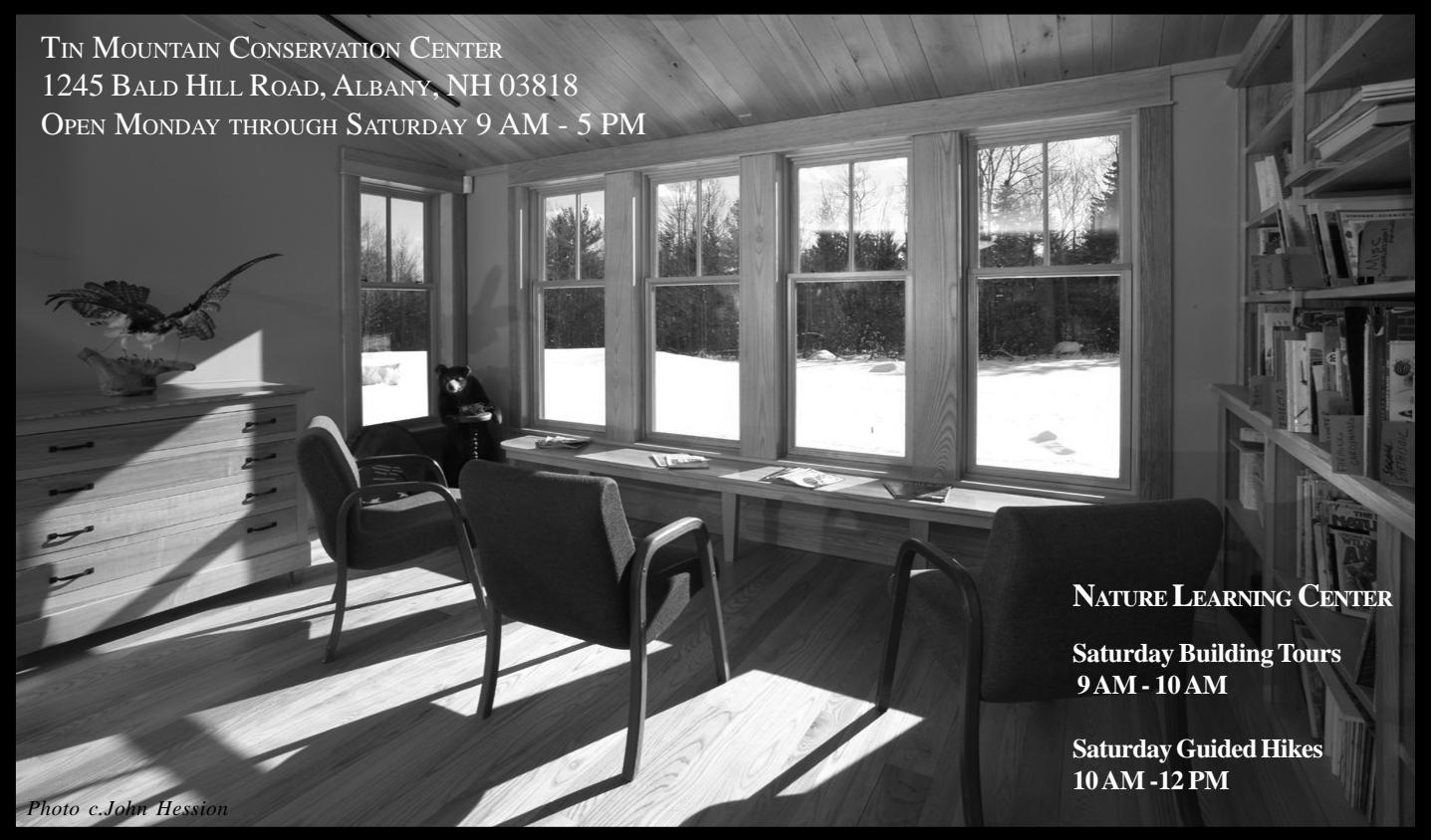
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NATURE LEARNING CENTER

**Saturday Building Tours
9 AM - 10 AM**

**Saturday Guided Hikes
10 AM -12 PM**

Photo c. John Hession

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