



To Tree or Not to Tree

by Tim Boyle

all photos this issue by Tim Boyle

*Oh Christmas tree, Oh Christmas tree,
Your cloak wants to teach me something:
Your hope and durability provide comfort and
strength at any time.
Oh Christmas tree, Oh
Christmas tree,
That's what your cloak
should teach me.**

*Literal English translation of the last stanza of "Oh Tannenbaum", traditional German holiday song

But where do you come from, evergreen?

Where will you ultimately end up?

Each year, 25 to 30 million living conifers give "the ultimate sacrifice" to become iconic fixtures for those celebrating Christmas with real trees in the United States. But where did the magnificent-smelling evergreen all dressed in tinsel and generations-old ornaments come from? What did it take to get it to market? What becomes of it after all the ornaments are packed back up for another year and it's dragged outside to stick in the snowbank by the curb?

Or if it is an artificial tree, what did it take to get that tree to its stand?

Where will it be many years from now?

A few years ago, some incidents in our Minnehaha Creek neighborhood pushed me into thinking deeply about Christmas trees, and to begin writing about them, our culture, and the Christmas tree industry.

The concept of using fresh evergreens seemed to me to be a lot of resources and logistics to bring an item to market for such a short term of use, ending in abandonment rather than consumption. These ideas were definitely biasing my perspective against using natural trees at the time.

As our lives often show us there is more than one side to a story (hopefully we are aware of it at the time), so has mine.

This year I find myself employed as a Christmas Tree Inspector for the State of Wisconsin's Department of Agriculture, the fifth largest Christmas tree

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The President's Letter

by April Rust, MNA President

Labor Day came late this year, ushering in a later start to the school year but an earlier start to fall, with abrupt, chilly, overcast weather. In addition to all the phenology changes this time of year, for many MNA members, fall signals the start of a new program year with classroom visits and lots of planning for the events like Halloween and fall festivals. Not only is fall programming season in full swing now, but the fall conference season has started up, with the annual NAAEE Conference, the Education Minnesota Teacher Conference (MEA), and the first ever National Green Schools Conference, this year taking place in Minneapolis, all in October.

Our own MNA Annual Conference runs November 12-14 in Hudson, WI, and the NAI National Conference is in Las Vegas, Nevada, November 16-20. Most of us are lucky to attend just one of these annual conferences although they all have much to offer.

Whether you are a current MNA member, or haven't joined or re-joined MNA and are reading this from a colleague's desk or bulletin board, I encourage you to make the 39th annual MNA conference your top conference pick this November.

MNA conference coordinator Hallie Wunsch includes more information on the conference in this issue like the excellent field trips and events throughout the weekend, but I thought I'd highlight some of the presentations in this year's conference to encourage you to attend.

We've recruited two local big names in the river valley world as our keynote speakers— Dan McGuinness and Dr. Richard Ojakangas. Dan's talk will focus on the idea that conservation is about people taking care of the places they love and Dr. Ojakangas' will focus on the roadside geology of Minnesota and the St. Croix Valley.



In addition to our two keynotes, the conference includes four concurrent session time slots with many outstanding speakers and topics throughout the weekend.

In the 'Leadership & Skill Building' slot we've got Dr. Peggy Knapp from Hamline University sharing her research on Minnesota leadership in environmental education; Tamarack Nature Center Director Mary Vidas discussing current trends, gaps and career options in environmental education; Belwin Conservancy Executive Director Steve Hobbs talking about partnering with organizations to set land conservation priorities in the watershed; and Fort Snelling State Park Assistant Manager Kathy Dummer describing how she transitioned from interpretive naturalist to park management.

The always popular 'Natural History & Research' theme includes Retired Naturalist Dave Crawford leading a session on the geology of Interstate State Park; National Park Service Historian Jean Schaeppi-Anderson sharing the history of the St. Croix Valley and its legacy; University of Minnesota Research Biologist Mark Hove talking about Minnesota's native mussels; and water quality protection with Randy Ferrin, the retired head of the St.

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President's Letter - continued

Croix Basin Water Resources Planning Team.

In the 'Hot Topics' area, we have Amy Kay Kerber giving an update on the 'No Child Left Inside' legislation and a current status of national EE policy; Will Steger Foundation Education Manager Kristen Iverson Poppleton sharing the new Minnesota's Changing Climate Curriculum; and a couple sessions on different aspects of invasive species, including Teresa Wolfe from the National Park Service talking about a model for citizen involvement in aquatic invasives outreach, and Carole Gernes with the Ramsey Washington Metro Watershed District sharing how to prevent the threat of new invasive plants through early detection.

The final heading of 'Teaching and Interpretation' includes educator Liz Malanaphy describing her "Just add Water" curriculum and programming; Lowry Naturalists Laurel Sundberg, Emily Hanson, and Elise Bushard, sharing how in these days of less bus money you can design a puppet show for the road, and artist Roy Edward Power with an engaging session on storytelling.

Whether you are a fledgling naturalist or well into your career, this year's MNA Conference has much to offer. I encourage you to register now and join us in the beautiful St Croix Valley!

Scatterbrains: Hoarding for Success

By Jodi Gustafson - Eloise Butler Wildflower Garden

The most difficult part about leading a tour that involves animals – whether they are birds, insects, mammals, or herps – is actually finding those critters. Some of the most uncomfortable birding tours I have ever lead have been the ones where, for some reason or another, we just couldn't find any birds. One day, I will find a spot where the birds are really active, full of charming antics, and then, as soon as I lead an eager group of birders to that same spot, suddenly, the birds have all decided to take a collective nap. And I, the tour guide, am left groping for an explanation that satisfies their curiosity, as well as gives them hope that next time, they will be able to have a good birding experience.

I dread the day that I lead a tour to look for butterflies, frogs, snakes, or any other woodland creature, and we just don't find any.

But there is one magical animal that we are guaranteed to see on any foray into the woods – squirrels. The family Sciuridae includes red squirrels, gray squirrels, chipmunks, and woodchucks, among others. And just because they are common, doesn't mean they aren't interesting.

Their accessibility makes for a really great tour of the woods. You can give kids or first-time binocular users a perfect target for practicing their binocular skills. You can tailor the subject matter to your audience, by discussing basic life cycle



and food acquiring methods for young audience members, to more advanced behavioral topics for adults.

Evidence of squirrel activities are easily found, including squirrel nests in trees, holes dug in the ground, and nuts that have been chewed upon. Every member of your tour will be able to actively participate and contribute to the tour by relating their own squirrel stories. Who hasn't seen a squirrel do something cute or memorable?

Autumn is a perfect time for a squirrel tour, because different squirrels have different methods of caching food to get them through the winter. Members of your group may have observed that red squirrels, although much smaller physically than gray squirrels, more aggressively defend their territory than gray squirrels. This is a result of how they hoard their food. Gray squirrels employ "scatter hoarding," where they dig multiple holes throughout their territory, and bury the seeds and nuts they've collected in individual holes.

Red squirrels and chipmunks use a different tactic. They store their food collection in a centralized location. Red squirrels amass a large collection of food in a midden, while chipmunks cache their food in their burrow or nest. This technique, called "larder hoarding," means that red squirrels and chipmunks must protect that food source, because if it gets raided and stolen, their whole collection for the winter is gone. Ask your audience, *Why do you think red squirrels ferociously defend their territories? What are they defending?*

In the book Squirrels, the Animal Answer Guide by Richard W. Thorington Jr. and Katie Ferrell, the authors relate a study by Fritz Gerhardt, who demonstrated that pilfering among North American red squirrels is quite common. He color marked uneaten cones in middens and then located them again, finding that ownership changed for 25% of the cones.



In all, 97% of the squirrels in his study pilfered cones, some of them stealing far more than they lost to other squirrels. Clearly, those chattering red squirrels have a right to be anxious about trespassers!

Another question to ask is What are the dangers of scatter hoarding and larder hoarding? With scatter hoarding, squirrels need to have a method of remembering where their food is buried. Also, some other animal might inadvertently find a few of the nuts that have been buried by the squirrel, and then might easily find more nuts buried nearby. Some of those nuts might also germinate into plants, although clever squirrels will remove the germinating part of the nut before burial. Gray squirrels expend an enormous amount of energy burying food, and then locating the food when they are hungry. On the other hand, a midden is susceptible to rot and fungus, as well as a single disastrous raid that could wipe out the food supply for the winter.

Which strategy is more successful? For scatter hoarders, storing food away from the nest allows a squirrel to move the nest if there is a parasite infestation. Inadvertently, scatter-

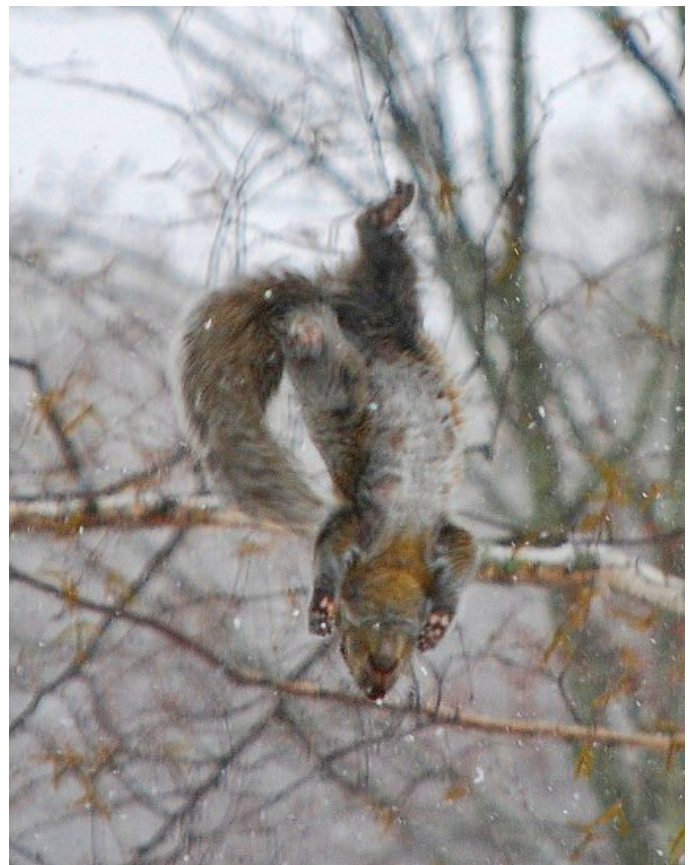
hoarders use statistics to improve their chances of recovering their food. If a midden is raided, all of the food could be lost. But if a few stores of buried nuts are stolen here and there, the squirrel should be able to find the remaining stores.

For larder hoarders, who concentrate their food within a defended territory, "the squirrel is able to guarantee access to food year round. Chipmunks, which store food underground in their burrow, do not even need to go above ground to feed during the winter and instead can feed off their store until the weather improves" (Thorington and Ferrell).

One other type of food storage among the Sciuridae of Minnesota is demonstrated in the body fat storage among woodchucks. Instead of expending all that energy in gathering, burying, storing, and defending their food, they simply eat as much as they can, pack on the fat, and then find a safe place to hibernate for the winter.

Clearly, with the abundance of Scuridae in the city, all three of these methods are highly successful. So why not consider the squirrels next time you need to develop a tour or program?

- Jodi Gustafson



producing state in the nation.

If you are talking about CT production (I'm going to abbreviate "Christmas tree" from now on) by the 'total number of trees harvested per state' as opposed to 'number of operations with sales per state' or 'total tree acreage per state', the top five states are: Oregon, North Carolina, Michigan, Pennsylvania, and Wisconsin, with Minnesota coming in tenth in this category.

Marketable CT's are grown in all fifty states and in Canada. Conversely, eighty percent (80%) of artificial trees purchased worldwide are manufactured in China, with Americans spending over \$130 million on them in 2008, according to the U.S. Commerce Department.

As an aside, in 2009 Americans spent over \$1 billion on Christmas ornaments from China, and in perhaps the greatest irony of all, we spent more than \$39 million buying nativity scenes shipped in from the East. But I digress. Hmmm. Making notes for another article here...

Obviously, many of the trees from the top producing states are shipped to other places and states. This is where the tree inspectors come in, for the most part. As tree inspectors, our purpose is to stop or at least limit the spread of plant pests and diseases, however it's impossible to inspect every tree. Tree farms in my territory range from a couple acres to over 230 acres. Many are even larger further north.

In Wisconsin, some counties we do as group inspections with as many assistants as we can get for a team, for others individual inspectors are solely responsible. There is also a fairly narrow window of time to inspect, as we are inspecting perennial nurseries right up to the time the CT growers begin shearing and preparing their trees for market, so there is about a six-week window to do the whole state before things start to ship. One back-handed advantage of the timing is that we can also inspect for Gypsy Moth egg-masses and lifestage while doing CT inspection, as the fields are often bordered by large, tasty deciduous trees, the leaves are beginning to come down, and the eggs are easier to see.

On the other hand, this usually means now we have to walk or if possible drive the perimeter of those 230 acres.



It may have been a blue ribbon tree in years past, but something went horribly wrong somewhere. There is always a certain percentage of "failure to thrive."

The primary things involved in CT inspection are whether the grower is an interstate shipper, which states they ship to, if those states require phytosanitary documentation, and if they ship out of a pest quarantine zone.

We also keep track of which species they grow for harvest, and of course we look for plant pests and diseases. The Department of Agriculture is, in Wisconsin anyway, also part of the Department of Consumer Protection (it says so on my card) and our duty is to protect the public health and also to make sure they are getting their product as advertised. The public in the case of agriculture not only includes Billy Bob buying a tree for his family, but also Bobby's

Tree Farm, Inc. when they are purchasing their seedlings or nursery stock from their supplier, be it from within the US or internationally.

Hence, we enforce our licensing and regulations, and follow up with inspections, hopefully to maintain the quality of the end product. It's interesting how some growers or dealers see us as 'the bad guys' and others see us as a huge resource and a valuable diagnostic and reporting tool. As I've said, my main focus is consumer protection, and I as a consumer feel I have a personal stake in that as well.

A lot of planning, work, resources, and chance go into CT farming.

States by Total Trees Harvested

	2007	2002	% Change
Oregon	6,850,841	6,466,551	6%
North Carolina	3,085,383	2,915,507	6%
Michigan	1,572,208	2,380,173	-34%
Pennsylvania	1,179,733	1,724,419	-32%
Wisconsin	950,440	1,805,981	-41%
Washington	785,304	1,164,139	-33%
New York	348,043	618,917	-44%
Virginia	313,710	507,791	-38%
Ohio	272,981	372,957	-27%
Minnesota	202,259	483,885	-58%
Indiana	198,899	186,303	7%
Vermont	168,206	151,249	11%
Tennessee	166,542	149,770	11%
Maine	126,908	164,406	-23%
California	119,855	383,940	-69%
Connecticut	113,622	133,861	-15%
Illinois	112,617	144,008	-22%
New Hampshire	82,124	107,725	-24%
New Jersey	78,791	132,458	-41%
Maryland	77,801	99,183	-22%
Massachusetts	75,914	72,522	5%
Georgia	50,607	80,862	-37%
Idaho	48,145	55,083	-16%
Texas	42,327	80,914	-48%
West Virginia	42,102	80,098	-30%
Iowa	39,575	57,254	-31%
Montana	32,104	43,793	-27%
Alabama	31,183	35,670	-13%
South Carolina	31,113	38,871	-20%
Missouri	27,344	92,483	-70%
Kentucky	23,724	56,473	-58%
Mississippi	20,889	39,594	-47%
Rhode Island	19,251	23,085	-17%
Louisiana	17,227	43,742	-61%
Kansas	15,731	29,094	-46%
Nebraska	15,180	24,215	-37%
Oklahoma	14,310	18,818	-24%
Florida	13,776	15,320	-10%
Colorado	13,404	11,508	16%
Delaware	10,819	16,183	-33%
Arkansas	10,636	18,146	-41%
Hawaii	8,323	4,233	97%
South Dakota	4,161	3,715	12%
Utah	2,126	3,744	-43%
North Dakota	1,150	2,007	-43%
New Mexico	314	2,935	-89%
Arizona	289	(D)	(D)
Alaska	0	0	0%
Nevada	0	(D)	(D)
Wyoming	0	3,030	-100%
U.S. TOTAL	17,415,971	20,898,065	-16%

grow, maintain, harvest, and transport crops has increased and doesn't make it easy for a farmer with a large, heavy commodity needing

to be moved a long distance to turn a profit.

Overall, the tree industry is changing.

I've talked to growers that have been in the business for over thirty years who say that when they first started they thought they could "just stick 'em in the ground and walk away". Some realized what it took to succeed and thrived, others could not maintain their fields and failed. It's still happening every day. I'm not sure what will happen to tree farming in the future.

A story I often hear is that the landowner is advancing to the age where it's physically difficult to work the fields, but the kids aren't interested in taking on the farm. Many tree farmers are past retirement age but can't stand to see their trees fail after all they've put into them, and are 'making it go one more year'.

On the other hand, giant tree farming operations are increasing in size in North Carolina and other states due to a longer growing season and frankly, more cheap migratory labor. Often the same labor forces that work the trees for the Christmas tree season in North Carolina are those that have just finished the orange grove season in Florida and will need to return home after their working visa runs out. Not many Americans would want to perform this very demanding labor for their low pay, but these workers are experts at what they do. This makes it even more difficult for small northern growers to compete with the superfarms.

Compared to other agricultural crops, CT's have some advantages. They don't normally require the heavy fertilization, pesticides, and day to day maintenance that some ornamental and food crops do, and they grow where many of these other crops wouldn't fare well. They also provide a good habitat for a variety of mammals, birds, insects, and on down the line.

It can take as many as 15 years to grow a tree to typical CT height (8 - 10 feet) or as little as 4 years, but the average growing time is 7 years. This builds up a green space and habitat that is a more dependable host than a typical row crop field.

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Selling trees like selling a piece of art. Everyone has different tastes as to what they want to see in their home, or what one particular grower THINKS their customers will want. Oftentimes, they ARE pieces of art.

The amount of shearing that over time goes into shaping and guiding the growth of a CT into a 'form' is substantial, and you can see a 'bad haircut' a mile away. Also there are different ways to shape the trees, especially the different species, to hopefully appeal more to a specific buyer.

Two of the most popular CT species are the Fraser fir and the Balsam fir (and their cultivars, yes they have cultivars). I was assisting one of the northern Wisconsin inspectors (who is basically a walking encyclopedia, especially when it comes to evergreens) and as we were looking at the trees I said, "These are Balsams but they don't look like the Balsams we saw in the last field. They seem sort of "squatter" or something. Why is that?" She laughed and said, "It's all in the shearing. Some people like them shorter and squatter, some prefer tall and columnar. I'm laughing because I have a cartoon on my refrigerator with two people buying trees; the short, rotund guy is looking at a short, squat tree, and the tall skinny guy is looking at a tall columnar tree. The word balloon above both says, "Perfect!"

Workers use different tools to shear the trees and each leaves a different 'brush stroke'. Some



Christmas tree growers have to think long term and make sure their timing provides the proper size tree every year.

use loppers to tweak individual branches, some use machetés to shape the entire tree at once. Those same tools might be used at different times or stages of growth to accomplish different things.

Weeding and maintenance go the same way. Most 'choose and cut' farms want a very clean look to their turf and ease of access for foot traffic, while mass-producing interstate shippers might do the minimum weed and turf maintenance to lower tree costs. Some believe in "spray, spray, spray", and others believe that some amount of weeds are a barrier against voles and insect pests.



Even a few weeds got past the "scorched-earth" pesticide treatment policy at this Choose & Cut farm. They didn't have much of a bug problem though.

In electronics school they always told us to "check the power supply first." In agriculture they drill into you, "start with good plants and good soil." This is a simple concept with deep implications. It also determines what needs to be done before, during, and after harvest. As with any organism, genetics play a big part and CT's are no exception. Some trees want to sprout lateral shoots uncontrollably, others have barely a node along their branches. Soil plays a huge part as well, with drainage, anchoring, nutrient balance and the amount of available light being just a few of the many variables in the equation. Some people like a particular specie of tree for their Christmas tree. It may be tradition, or shape; something that has open needles and branch growth - more space for all those ornaments, or perhaps color, or specific needle type.

Species such as Scotch pine have been suggested for households with cats, as the sharp, stiff needles tend to reduce climbing and toying, and some species have, through marketing, developed name recognition in certain locales as the 'must have' tree.

Another factor for the growers is what the buyer is going to use the tree for, as not all trees will fit into a living room. Some are raised as "Cathedral Trees" and are grown massive and columnar to be the centerpiece of an architectural or even entire village setting.

Some species' popularity has waffled over the years; the Scotch and white pines with their long needles that drop sooner are often too much to clean up for some. These trees are also known to begin to brown out earlier than others, even in the field, so measures are often taken to reduce the effect of this. Such measures include spray-tinting the tree with a water-based pigment. The next time you see an abnormally dark green Scotch pine in your local tree lot, part the branches and take a close look at the trunk and stems. Often a subtle green tint covers the wood, an overspray of the giant airbrush used while the tree was still growing in the field, to keep it healthy-looking. Indeed, it is said that if you walk into the right tavern in north-central Wisconsin during happy-hour in the middle of November, you will probably see a trail of green boot tracks leading to the bar and restroom.



See if you can spot the painted tree. Notice that it is actually two-toned, as the sprayer evidently didn't want to waste paint on the bottom boughs that would be cut off anyway.



Shaped, tagged by the buyer, ready for an angel on top.

With as many species of trees as there are, there are probably just as many ways to harvest them. The 'cut your own' or 'you choose it, we'll cut it, bale it, and carry it to your car' places are common, but some include unique machines specially made for shaking the tree and reducing the number of loose needles for transport, and some employ custom, often homemade balers to wrap the tree with baling twine and protect its shape during transport.

Most commercial farms cut their trees with next year's harvest in mind. Some sell complete spaded trees for transplant as living Christmas trees, while others cut the trees with a certain percentage of low branches purposely left on the remaining stump. Some of these farms will let these trees grow back from the stump on their own accord, so called "stump-farming", and some contend that a few living branches help shun the Pales weevils and other pests that like to bore into dead stumps that would otherwise remain from complete clear-cutting. Some farms leave their stumps in the ground and plant new starts around them, others pull them or bulldoze and have a gigantic bonfire in the middle of the winter with the culls.

Still other farms try to use all the possible leftover bits and pieces, using the cast-off branches for wreaths and bough production, sometimes even raising crops specifically for this application. What is practical for one business may be unapproachable for another farmer.

Continued next page

As far as what happens to the trees after the holidays, it really depends upon where you live. Many city crews that pick up trees as part of a recycling program chip the trees into mulch that is often used in local parks, or offered back to the public. The industry claims 93% are recycled via community programs.

El Dorado Hills, CA, a fairly upscale community with a population of approximately 42,000, generated 27 tons of mulch from their CT's in 2008. In a similar program in Edmonton, Canada, the cost of chipping the city's Christmas trees was over \$100,000 per year. In most Canadian cities surveyed, the tree chipping cost varied from \$1 - \$3 per single tree.

Some local cities charge to pick up trees, others do not. Anoka County operates the Bunker Hills Compost Site, which is normally open for two weekends in January to receive Christmas trees and evergreen garlands not recycled.

In Mesa, AZ, the city has been running a program which accepts donations of live potted trees, which are planted in Mesa City parks. Live trees five feet or taller are accepted at Mesa Fire Stations.

Artificial trees have their own set of advantages and disadvantages. They can often be purchased or recycled through thrift stores to reduce the importation of new plastic and keep the old trees out of the landfill longer. They can be reused and passed down through families. On the other hand when they finally do make their way to the landfill, they will be there for centuries, often containing toxic chemicals such as PVCs and lead.

One last point that is often overlooked: Christmas tree fires cause some \$16 million in property damage each year. 13% happen in February or later. Many "fake" trees are flame retardant, but if you do manage to set one on fire, it will burn very hotly and emit toxins such as dioxin.

Yes, trees as decoration are controversial; for proof, visit any blog. But the trees themselves have many hidden and subtle stories to tell - let's make sure we use all of our senses and objectivity to listen.

- Tim Boyle

The 2010 MNA Conference is right around the corner! (Nov. 12 -14th)

Here is the Saturday field trip itinerary to whet your naturalist adventure palette!

Saturday, November 13, 2010

2:30-5:30 PM

Off-Site Sessions at the MNA Conference

There are 5 off-site sessions offered as part of the conference this year. Sign up for one of these when you check in and register at Camp St. Croix. Transportation for the field trips is not provided, however we'll help coordinate carpooling at registration. Please bring your own water bottle and snacks.

Point Douglas, Ghost Town on the St. Croix

Point Douglas is more than a swimming beach near Prescott, Wisconsin. Once considered for the first military post in the area (before Fort Snelling), it became a busy stopping point where the early pioneers got off the boats coming up the Mississippi River to settle in the Minnesota territory. In just a few decades this booming town vanished from the map. Learn the history around this unique area and tour its cemetery, one of the oldest in the state. Participants will travel to Carpenter St. Croix Valley Nature Center for a presentation and take a walking tour of historic sites. Presented by Carpenter Nature Center Staff, Denmark Township Historical Society, and Minnesota historians.

River Crest Elementary School: Using "green design" as a teaching tool for sustainability

Join River Crest Elementary School staff and architects from Hoffman, LLC as they share their experience in design and construction of a LEED Gold for Schools building.



– 2010 MNA Annual Conference –
Camp St. Croix, Hudson, Wisconsin
November 12 –14th, 2010

Minnesota Naturalists' Association



Saturday Field Trips - continued from previous page

Learn how the building's design and sustainable features enhance student learning and how these same sustainable features are used as teaching tools for students, staff and the community using sustainable practices.

Scenic 35 drive to Barn Bluff

Barn Bluff in Red Wing, MN is a popular destination for those seeking an unparalleled view of the St. Croix river. Be prepared for a short though moderately strenuous hike to the top of the bluff with local guide Bruce Ause, a retired 30-year Director of the Red Wing Environmental Learning Center. We'll discuss life along the river, human history, natural and geological history, local lore, and watch for eagles and other birds from this popular bird watching area.

Kinnickinnic River, Class 1 trout stream

The "Kinni" is a 25-mile long stream that runs through River Falls, WI, eventually feeding into the St. Croix River. It's designated an "Outstanding Resource Water" by the Wisconsin Legislature - the highest classification possible. Learn about local efforts, strategies and partnerships that the Kinnickinnic River Land Trust and the City of River Falls are pioneering to protect and enhance this urban trout stream. Afterwards, participants will get hands-on fly casting lessons from expert fly fishing anglers from the Federation of Fly Fishers.

Geocaching...it's happening, are you?

Geocaching has been growing in popularity since its arrival in the 1990's. In the first hour of this session, participants will learn the history of geocaching, how it works, as well as policy and guideline development around this new recreational pastime. For the remaining two hours, participants will geocache for official MNA conference geocaches containing great prizes. GPS units will be provided.

Can't wait to see you there...!



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Organization _____

(This information will appear in the membership directory, unless otherwise noted)

How did you hear about MNA?

How long have you been a member?

Membership runs one year from payment of dues.
Please make checks payable to **MNA** and mail to:
**MNA Membership, c/o Krista Jensen, Lebanon Hills
Visitor Center, 860 Cliff Road, Eagan, MN 55123**

I am a:

- NEW MEMBER
- RENEWAL
- MAEE MEMBER

Membership Level:

- \$25 Professional
- \$20 MAEE Member (Prof.)

Please check if applicable:

- Please do NOT include me in the membership directory
- Please do NOT include me on mailing lists

*Our Mission:
"The Minnesota Naturalists' Association exists to advance natural and cultural resource interpretation for the purpose of fostering wise stewardship of all resources. The MNA offers its members growth opportunities in skill and career development and serves as a forum for interpreters to pool knowledge, share ideas, and establish contacts with colleagues."*