

The Forest Steward's Journal

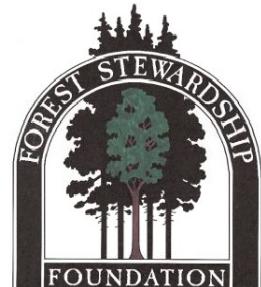
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The MISSION of the Forest Stewardship Foundation is to “educate and inform landowners, natural resource professionals and the general public about the science and ecology of forest lands, the many values derived from forested lands and the principles of sustainable forest land development.”

DISCLAIMER: As in the past, we again advise that this information is submitted for your interest only. The Foundation’s mission, as indicated above, is to “educate and inform”, not to advocate or persuade. The Foundation takes no position, either endorsing or opposing, approving or disapproving, any of the assertions or arguments in the contributed information.



From the Chair

My winter “From the Chair” journal message was cautiously optimistic, but I think we have turned the corner and normal appears at hand. We made it through our virtual landowner conference in fine shape, but I’m ready to reserve our hotel in Helena for an in-person conference next April and I hope you are too.

One of the highlights of our recent landowner conference was Matt Bell’s presentation on bats. Glenn Marx has collaborated with Matt and I know you will enjoy his article “Forest Health Creates Diversified Bat Habitat”. Matt has suggestions that all forest landowners should be aware of to improve bat habitat.

Gary Ellingson summarizes the 2021 landowner conference, “Becoming the Best Forest Steward Possible”. Skyler Hoefer gives us another enlightened update on timber market conditions and Jill Hautaniemi, DNRC forest pathologist helps us better understand the identification and effects of Elytroderma Needle Cast.

I would like to offer my personal apology to Tom Jones, author of the excellent winter journal article “Salvage of Damaged Timber and Small Sawmills”. Changes were made to the article without Tom’s approval for which we sincerely regret.

I would also like to welcome our new board member, Jon Reny, who is taking over many of the data base tasks that our Treasurer, Linda Leimbach, has done for many years. Jon, a professional forester with a Masters degree in Information Technology, will become our membership chair. Jon retired from Libby’s Cabinet Peaks Medical Center in 2020 in their Information Technology department. We are thrilled to have Jon on board.

In summary, 2021 is looking bright for the Foundation. Lorrie Woods has done an amazing job with our web site, so make sure you check that out at <https://www.foreststewardshipfoundation.org>. A special thanks to our generous members and sponsors. I hope you enjoy this edition of the journal.

Ed Levert, chair

Forest Health Creates Diversified Bat Habitat

Glenn Marx, Executive Director, Montana Association of Land Trusts; Board Member, Montana Forest Stewardship Foundation



Matt Bell presenting during one of the popular Gates of the Mountains Bat Tours (set for August 10, 12, 24 & 26 at 8:15 PM in 2021).

Matt Bell's unofficial title is "Bat Enthusiast" and while he is indeed enthused about bats, a more appropriate description might be "Bat Champion."

Matt works fulltime as a GIS Coordinator and Land Steward for The Montana Land Reliance, a statewide land trust based in Helena, but he also is an education volunteer for the Montana Department of Fish, Wildlife & Parks specializing in bat and amphibian programs. He provides tours and presentations about the important role bats play in pollination and pest control, including a very well received presentation during the 2021 Montana Forest Stewardship Foundation's Eleventh Annual Forest Landowner Conference, held April 22-23. He has a degree in Wildlife Biology from the University of Montana and has spent four years on Montana's Amphibian and Reptile Inventory Crew, and three years restoring aquatic habitats for the U.S. Forest Service on the Beaverhead-Deerlodge National Forest.

Matt's presentation at the Forest Landowner Conference can perhaps (simplified for the purposes of this article) be broken down into two sections: 1) Why bats are beneficial; and 2) How you as a forest landowner can create good bat habitat.

Bats serve as nature's pollinators, and pollinate or disperse seeds for over 1,000 species of plants and flowers, including bananas, mangos, cashews, breadfruits, and balsa wood. Here in Montana, bats are best appreciated for insect control.

"A single little brown bat can eat over 1,000 insects per hour as it forages for food," Matt says. "A little brown bat is about the size of your thumb (weight about one-third of an ounce) and can live over 30 years."

Multiply those numbers...1,000 insects per hour, per each little brown bat, for 30 years...and you realize that's serious insect control. The estimated benefit – less pesticides etc. – of insect control from bats is over \$3.7 billion per year.

SOME BASIC MONTANA BAT FACTS

There are 15 species of bats that reside at least part-time in Montana, 12 of which are species of concern based on declining populations or threats to habitat. Some bats are small and can easily navigate in small more cluttered areas – using ultrasonic pulses called echolocation, one of nature's miracles – to forage for food, and some bats are larger with longer wing spans and require bigger open areas for foraging.

Bats typically have one offspring per year, termed a pup. Some of Montana's bats roost in snags, some roost in loose tree bark or tree cavities, some roost in stumps or logs, and some roost in rock formations or caves. Some overwinter in Montana through diversified hibernation sites, and some migrate to warmer climates in the winter. Some roost in human-made bat houses, in sheds, garages, inside walls or behind signs attached to houses, and it is possible for one fairly contained roost site to house over 100 bats.

A fungal virus named White-nose syndrome has recently arrived in Montana, and it is a bat killer. It was confirmed in a bat found in eastern Montana, and it has spread from Europe to the eastern U.S., through the central part of America, and is now in Montana. It has killed upwards of 7 million bats in the U.S. and represents a major threat to Montana and North American bat populations.



Matt (second from right) and a group of high school students and the new bat house they built at Spring Meadow Lake in Helena.

Bats can carry rabies (like other mammals can) and anyone who comes across a bat that appears sickly, or injured, or any bat behaving unnaturally, should stay away from it and contact your local MT FWP office or county health department.



It has been interesting to note that on nighttime trail camera pictures, bats are frequently observed when big game animals are present, but rarely observed when the big game animals aren't there. Perhaps it's a symbiotic relationship where the big game animals attract populations of biting insects, the bats get a concentrated prey base and the big game animals wind up with fewer bites than they might have experienced. Apologies for the poor picture of the drop tine bull (photo credit Sam Gilbert).

Bats drink water on the fly, wings out, tongue dragging through the water, so they need an open area above and along the water surface. Following basic Montana forest streamside management zone guidelines through selective harvest with understory shrub growth to help produce insect populations is good for forest health, water quality, and bat habitat and foraging.

"This is an oversimplification, but basically a healthy forest will likely produce the diversity bats need to roost, forage, access water, rear pups and thrive," Matt says. "Conversely, a forest choked with small diameter saplings with few snags, no openings in the canopy and no water...or a large clearcut with no snags, no water and no structural diversity, will make the habitat much less desirable for most of our bats."

Bats often rely on the availability of several roosting locations over the summer season – depending on temperature, food sources and more – so a rich diversity in the location, diameter, species, height, and decay stage of snags is critical.

"Snag retention and recruitment are important forest management tools to promote the availability of suitable roosting sites," Matt says. Structural characteristics such as peeling bark, hollows or crevices, and diameter (>15 cm) can provide optimal thermal and protective qualities that bats prefer. It's also important to consider, when feasible, felling snags over the winter months when it's unlikely bats are actively using them.

Bats are one of the least understood and least appreciated animals on earth, and bat populations around the U.S. and elsewhere are declining "at alarming rates." White-nose syndrome is a vital threat to individual bats and to bat colonies (White-nose syndrome is unique to bats and is not transferable to other animal species or humans). Yet bats are essential allies in pest reduction and for fruit, flower and plant pollination.

"Montana forest owners can play an important role in bat conservation through forest management, and it was encouraging to see the interest and excitement in improving bat habitat and forest health during the forest landowners conference," Matt said.

With some basic understanding about bat habitat and basic forest management actions, you too can become a "bat champion."

Contact info for Matt: matt@mtlandreliance.org (406) 443-7027
 Other helpful information: Western Bat Working Group
 Montana Field Guide / Bats
 Montana Natural Heritage Program / Bats

MANAGING YOUR FOREST FOR BAT HABITAT

Many forest landowners value bats for their pest control and an "Inside Forests" brochure published by state and federal agencies, Montana timber companies, MSU Extension and the Montana Wood Products Association suggests that "somewhere between fear and fascination, bats represent a remarkable and valuable group of animals in our fields and forests."

Check out the Montana Forest Stewardship Foundation's website (<https://www.foreststewardshipfoundation.org/publications>) for the "Inside Forests" report and a document titled "Forest Management and Bats". Both contain helpful information about bats and Montana forest management.

"It's challenging to declare a bunch of absolutes about private forest management and bat habitat, but there are some definite guidelines," Matt says. "Generally, diversity in tree stand and age classes; diversity of tree species; diversity in tree spacing, age, diameter and species of snags; availability of water and an open approach to water sources; are all positive attributes for providing suitable foraging habitat for the greatest number of species."

11th Annual Forest Landowner Conference Goes Virtual

Gary Ellingson, Montana Forest Stewardship Foundation Board Member

In show business the phrase “the show must go on” means that regardless of what problems occur a performance that has been planned must still be staged. After having had to cancel the planned and advertised 2020 Forest Landowner Conference (conference) due to the COVID pandemic the Montana Forest Stewardship Foundation Board of Directors (Foundation Board) faced the uncertainty of how and when to deliver the 2021 conference. A decision had to be made early in 2021 to allow time for planning and advertising a springtime conference. At that time there was no certainty of what the world would look like in April when it was decided the conference should occur. The Foundation Board was certain of only one thing... the show must go on!

Ultimately a decision was made to move forward with a virtual conference that would support the Foundations mission of “education and informing; landowners, natural resource professionals and the general public about the science and ecology of forest lands, the many values derived from forest lands and the principle of sustainable forest land development.”

Hosting a virtual conference was a new challenge for the Board with many unknowns in regard technical challenges that needed to be overcome so that the audience and presenters could participate easily and effectively. The Board secured the services of Caroline Mellor, a trained facilitator with the Langdon Group to assist them. This turned out to be a great decision and many thanks to Caroline for her competence, patience, and professionalism.

The conference was formatted with two half day sessions and presented on Zoom on April 22nd & 23rd. Participants were able to register electronically on the Montana Forest Stewardship Foundation (MFSF) website. If you missed the conference check the MFSF website (foreststewardshipfoundation.org) where the speaker presentations will be posted and available to view at your convenience.

From the comfort of their homes and offices conference participants were treated to presentations from a diverse array of speakers who presented on many interesting topics. They were able to ask questions through chat rooms, view of fellow participants and presenters by video, and participate in interactive polls during the conference. Speakers were able to show videos, present PowerPoint presentations, and interact with audience members. It truly was the next best thing to being there!

The 11th Annual Forest Landowner Conference would not be possible without the financial support from several key sponsors. Northwest Management, Inc. has co-sponsored the conference for the past eleven years and is very active in providing planning and coordination services. This year NMI forester and Montana Area Manager Eric Hoberg played a key role and did a wonderful job. Financial sponsorships were received from Betch Family Trust, Idaho Forest Group, Marks Lumber, Montana Logging Association, MT Tree Farm Program, Peter and Maria van Loben Sels, Stimpson Lumber, F.H. Stoltze Land and Lumber Co., U.S. Forest Service, and Weyerhaeuser.

The conference would also not be possible without the participation of our speakers and presenters who work very hard to provide informative and interesting presentations. We would like to extend special thanks to Dr. Peter Kolb, MSU Extension Forestry Program; Bonnie Hamilton, MT Department of Revenue; Ashley Juran, MT Department of Natural Resources and Conservation; Kelley Barkell, U.S. Natural Resources Conservation Service; Mat Bell; Bat Enthusiast; and Bryan Lorengo, Montana Logging Association.

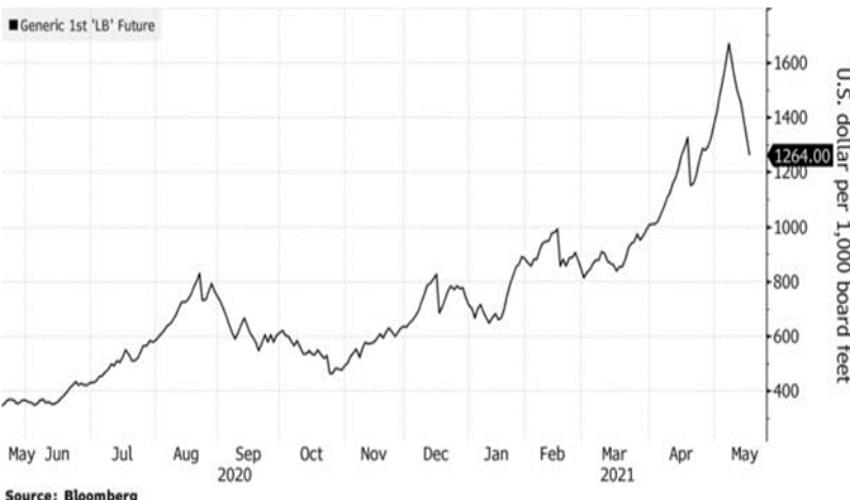
Thanks also go out to the Montana Forest Stewardship Foundation Board whose members volunteer their time and energy to support the Foundation’s mission. Without them the Foundation would not exist.

Currently the Foundation Board is hoping to resume with a “real” landowner conference next spring in Helena, MT. Stay tuned and please plan to attend. We look forward to reuniting with you in person!

Spring Lumber Market 2021 Update

Skyler Hoefer, Idaho Forest Group St. Regis

As we start to see trees breaking bud, wild flowers blooming and the grass greening up, you also start to see log trucks rolling to mills. Since the Winter Journal, lumber prices have continued to break records and set new benchmarks. Bloomberg reported on May 10th, lumber futures traded at \$1733.50. Lumber futures have since started trending downward. Many experts think the lumber rally has peaked. Will you see the price of lumber come down to historic normal prices? The simple answer is probably not in the next few months.



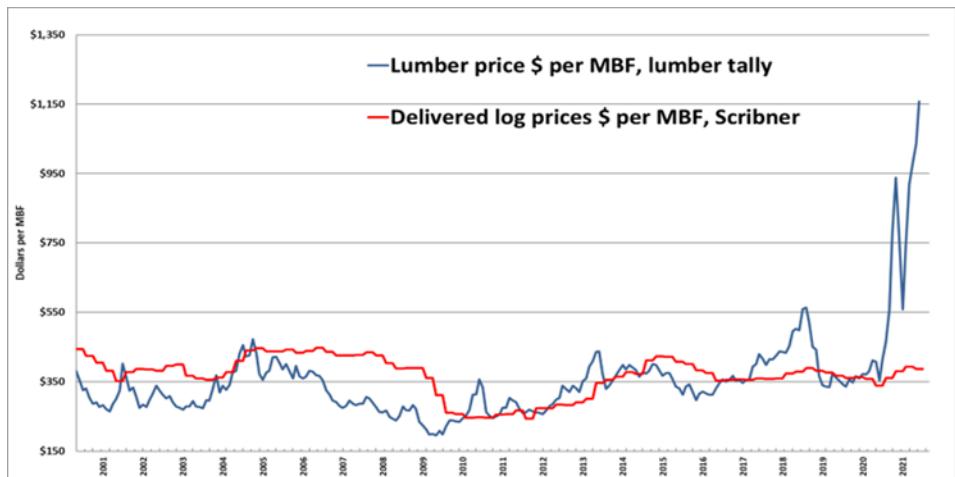
Source: Bloomberg

With the surge in lumber prices, are landowners' seeing increased log values in Montana? Steve Hayes with University of Montana's Bureau of Business & Economic Research stated: "As far as Montana prices when you compare 4th quarter 2020 against 1st quarter 2021 the average is actually down slightly, but if you look at 1st qtr. 2020 and 1st qtr. 2021 prices are up about 15%." Hayes also added, "No one knows what is going to happen for sure on log prices and lumber prices but I don't see a huge increase in stumpage or delivered log prices in the near term."

Mr. Hayes collects quarterly delivered log costs from purchasing facilities across Montana. I reached out to Mr. Hayes and he provided a nice graph showing Montana Delivered Log costs vs. Random Lengths. Thanks Steve for the great information.

Montana is truly a unique place. We have diverse landscapes and multiple commercial tree species that grow widely in different ways. I have heard concerns expressed about low log prices being offered and I have also heard of high prices being offered. I encourage every landowner to market your logs and try to get all the information you can. Prices will vary depending on species, size, quality, and geographic location. Supply and demand also influences log prices. Currently, in portions of Idaho and Montana, mills are coming out of "Breakup" with above normal inventories. High inventories and increased availability of logs can result in lower than expected prices. But the stars could align and you get the deal of a lifetime. Every landowner's situation will depend on many factors. I too agree with Hayes that I do not think you will see a huge increase in log values. I will close with this, lumber and log markets can be extremely volatile and volatility seems so be the normal now. If Montana sees a busy fire season and log deliveries and logger availability decrease, a simple fire season disruption could play a dynamic role in increasing log values.

Across the U.S. new home construction has slowed in some States and continued to accelerate in others. Building or purchasing a home has also turned into a costly endeavor. With the increasing prices of lumber and all other materials, new home construction has increased \$24k-\$40K above normal costs. On top of that, labor shortages and choked supplies have created inflation and delays. If you want to purchase an existing home, be prepared to pay dearly for it. Prospective home buyers and realtors are reporting that homes are selling within minutes, paying, or receiving prices considerably over asking price and that there is a lack of home and property availability. Lumber, building and housing look to remain red hot.



(Source: BBER and Random Lengths)

Elytroderma Needle Cast

Jill Hautaniemi, Montana DNRC Forest Pathologist



Multiple brooms in an infested ponderosa pine stand. Photo by Amy Gannon.

Ponderosa pine is a drought-tolerant pine species of western North America that flourishes in areas too dry for other tree species or where regular fires have cleared out competition. Over the last century, however, organized fire suppression efforts have resulted in more shade-tolerant Douglas-fir trees encroaching upon these once open, low-density ponderosa pine stands, making ponderosa pines more susceptible to disease.

One such disease is Elytroderma needle cast, a disease that primarily affects ponderosa pine but can sometimes be found on other two- and three-needled pine species in western North America. Elytroderma needle cast is caused by a fungus (*Elytroderma deformans*) that infects new needles via wind-borne spores in the spring. The needles become discolored, die, and are usually shed or “cast” before the next growing season. The Elytroderma fungus grows from the needles into the branch, becoming systemic within the host and making it capable of infecting new needles each year. Although not usually fatal, 2-3 years of successful infections can kill a tree outright as a result of the continual loss of the previous year’s needles and the death of the only living, growing tissue in the branch, the cambium layer. More commonly, however, the weakened tree becomes susceptible to bark beetles and root diseases, which ultimately lead to its death.

An Elytroderma infestation can be distinguished from insect pests and other diseases by the distinctive combination of needle death and broom formation. Needles infected with Elytroderma are usually discolored at the tip while the base remains green. Additionally, in mid to late summer, fruiting bodies will appear on the needle which look like thin, black, vertical slits. Infected trees also grow witches’ brooms, which are abnormal proliferations of twigs on a single branch. The result is a bushy area of the tree that looks like the end of a witches’ broom.

The occurrence of Elytroderma needle cast is thought to be higher after wet weather, which increases spore production in many fungi. The threat of the Elytroderma fungus to a stand can be lowered by thinning, which decreases the stand humidity and wet foliage, as well as, reducing stress on remaining trees by reducing competition. If an infestation is sufficiently advanced, the best option may be salvage logging before the stand health deteriorates further.

In a regular, low-density ponderosa pine stand, the damage Elytroderma causes is not a reason for alarm as otherwise healthy trees can recover, and mortality from Elytroderma alone is rare. However, with Douglas-fir encroachment, the ponderosa pines of our forests are growing in closer quarters, resulting in a moist microclimate perfect for Elytroderma infection. As this disease will continue to be present in our forests, it is important to be aware of it so that we can make informed management decisions to keep our ponderosa pines, the state tree of Montana, healthy.



A witches' broom caused by Elytroderma needle cast on ponderosa pine. Photo by Amy Gannon.

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The Forest Steward's Journal is a publication of the Forest Stewardship Foundation. Comments, articles, and letters to the editor are welcome.

Please Join the Forest Stewardship Foundation

Through memberships of only \$25/year we have been able to secure grants, publish and distribute the semi/annual Forest Stewards Journal to over 1200 addresses and co-sponsor the annual forest landowner conference and insect and disease workshop. Making forest education happen across the state is what we are all about. Over the past 25+ years these efforts have also included conservation easement and succession planning workshops, sponsorships of forest stewardship workshops along with a host of other efforts.

As a non-profit organization our board members are not paid, but are passionate about this cause. Your membership means a great deal to our continuing success. Our membership has steadily increased over time to 130 members. Please consider joining the foundation by completing the membership application form/envelope found in each winter's edition of the Journal or by going to our website at: <https://www.ForestStewardshipFoundation.org>.

Thanks for your help.
Ed Levert, Chair

