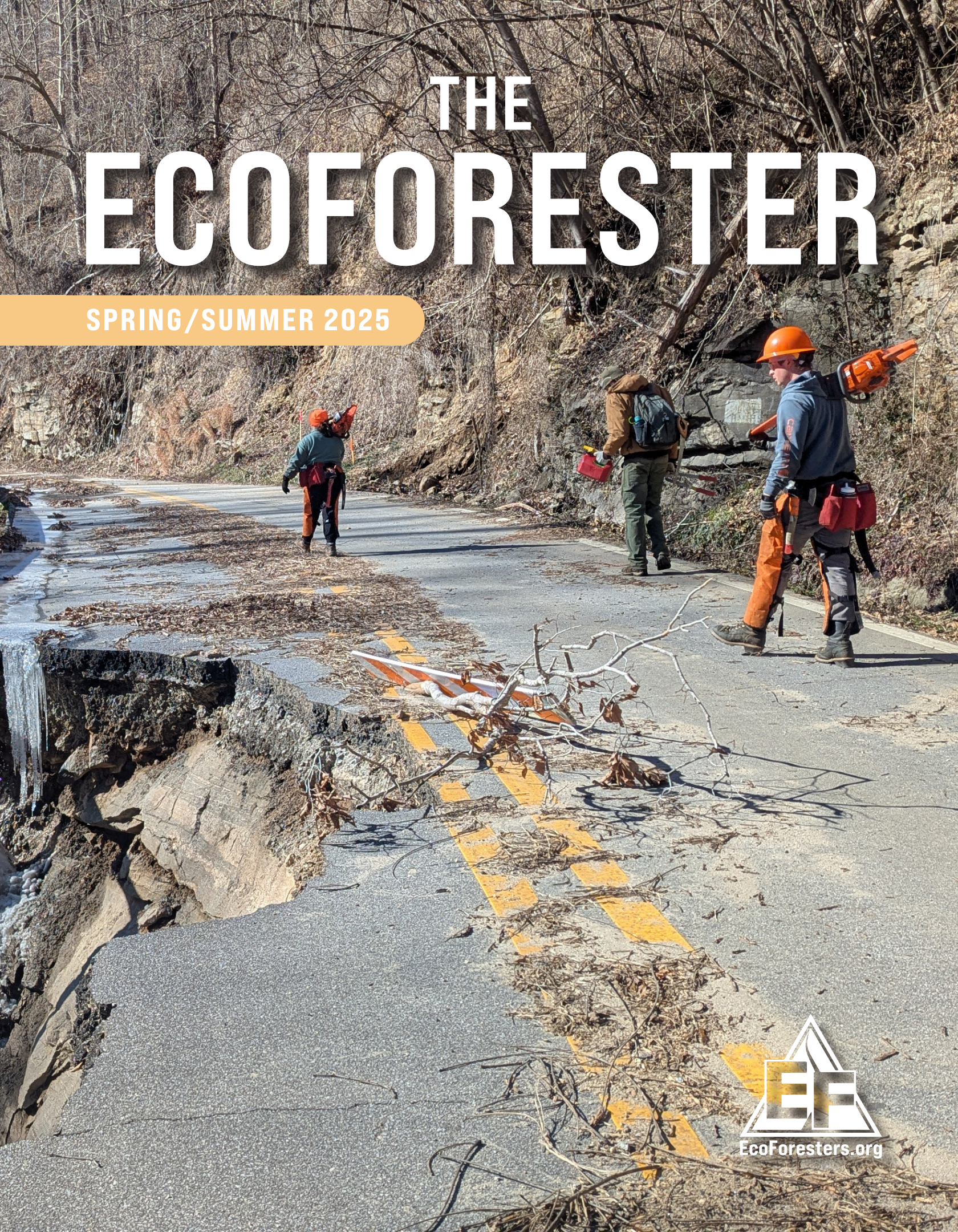
THE ECOFORESTER

SPRING/SUMMER 2025



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Inside This Issue

HELENE RECOVERY

By: Lang Hornthal
Executive Director

As I write this article, a little over 5000 acres are on fire in Polk County, about 37 miles away, and I can smell the smoke from my house. Jordan Bowerman, an EcoForesters' forestry associate, was scheduled to meet a landowner not far from the fire, but weather conditions and the remoteness of the area caused us to reconsider. In the world of forestry, safety and caution reign supreme.

I share this information not to be alarmist, but to best share with our readers the challenges professional foresters and land managers are facing post Hurricane Helene. The unplanned disturbance that struck over 800,000 acres has left access to the areas that once acted as fire breaks impenetrable. A wildfire that once was put under control after burning only 1 acre is now a 15-20 acre fire. Drought-like conditions are creating headaches and dangerous situations for a lot of brave workers and communities alike.

Our staff has spent the last 6 months in the woods. Our field staff has stayed busy restoring access into the woods and planning for the future challenges that will come this spring. Our foresters have been assessing what it means to lose 50% of your trees over a 100 acre parcel. What is the cost and feasibility of removing tangled timber without further damaging property and streams? What is the right prescription for regenerating oaks where the movement of earth and trees has changed the environment? And most importantly, what will it cost?

The next 10 years of forest stewardship will be in reaction to Helene's footprint and require an effort of similar magnitude. When disturbance happens in the absence of planning, regeneration and competing invasive plants are not considered. The planning decisions made today will help guide future wildlife populations, recreational opportunities, and future markets like biochar. This edition will share what we are seeing in the forest and how we are planning for the future.

The greening of this spring will help all of our psyches. The response to new growing space will remind us that disturbance is an opportunity for natives and non-native species alike. While we are usually okay with letting nature duke it out, the winner getting the light and growing space, we know that past management has degraded species favorable to wildlife and given an unfair advantage to faster growing invasive plants. But with planning, education, training, and hard work, EcoForesters has begun the journey towards restoration. Thanks for coming along for the ride.

Photo: EcoForesters crew member, Sal Covarrubias, bucking up trees that fell across a hiking trail during Hurricane Helene.

HELENE IMPACTED OVER 800,000 ACRES OF FOREST

By: Andy Tait

Senior Forestry Director

It's safe to say that the damage from Hurricane Helene is unprecedented, creating challenges that will impact the landscape for generations to come. Our team has been using remote monitoring from satellites and drones to get a better understanding of the destruction, as well as the opportunities for restoration. Each forest stand will have its own unique challenges that EcoForesters and others will be addressing in the coming year, but here are insights into what we are seeing so far.

In addition to the massive toll on people and development, many forests have been heavily damaged by Hurricane Helene. The main current concern to address quickly is the potential for ongoing erosion from badly damaged forest roads, landslides, or just ground disturbance. Any disturbed soil should be stabilized and reseeded as soon as possible.

Risk from more severe fires due to increased fuels is a concern too. Clearing woody material at least 30' away from structures is essential to reduce fire risk, possibly farther, then clear roads for access in case of fire with increased fuel loads. Firewise gives good directions for fire safety around homes. Community Resource and Conservation Districts may also have funding to help with Firewise practices.

Water quality is of utmost concern and state regulations still apply in stream side areas. Even if trees are down in stream sides areas, ground disturbance still must be minimized in these areas to meet environmental regulations.

Damaged forests will re-grow. Virtually all of WNC was clearcut within the last 100-150 years. The forests we have (or had) were natural 2nd or even 3rd growth. It will take years and even decades, but hardwood tree stumps will resprout and ample native seeds have been left by the pre-existing forest. And we have a chance to shape the future forest to make it more diverse and of higher quality for wildlife and/or timber. As the forest regrows we can favor more desirable trees that need help (like oak) by releasing them from their more common competition or invasives.

If invasives were or are present they will need to be carefully monitored and controlled, as they spread very rapidly and will take over the new growing space with more sunlight. If not controlled they will outcompete and grow over native trees, stopping the natural forest from regenerating

It's important to document any damage done to your forest, infrastructure, or equipment before work is done for possible reimbursement by insurance or emergency relief funds.

Trees that came down or are badly damaged (>50% crown broken off) can be salvage logged, if still solid, but usually at no profit to the landowner. Finding loggers to work on salvage timber harvests could be the limiting factor.

Financial assistance is available for forestland owners impacted by Helene through the Emergency Forest Restoration Program. Your local county USDA office is likely to be your best first contact for that. Our work is just beginning. We will be surveying landowners soon to better understand needs, but please reach out to our staff if you have questions or need assistance.

KEY FACTS TO DETERMINE FEASIBILITY FOR A SALVAGE TIMBER HARVEST:

1. **Trees/logs need to be at least 12" diameter at the small end and be solid for at least an 8' length to have any value, and only logs that are without any significant damage (e.g. no splitting) or major branches are merchantable.**
2. **Downed timber is only merchantable for about 6 months before it starts to decay and loses all value. Its best to harvest high value timber as quickly as possible.**
3. **The primary merchantable and possibly profitable species is oak (especially white oak); large yellow poplar and white pine are selling for close to the salvage logging cost (i.e. no profit for landowner).**
4. **Loggers usually want at least 10-acres of good timber, especially under these demanding circumstances.**
5. **Sites with good accessibility to, and around, them for large machinery are much more feasible. Loggers and mills were already in short supply so only larger tracts with good access may be appealing.**

POTENTIAL ISSUES TO CONSIDER:

1. **Protecting water quality is the key first thing to do. Stop any ongoing erosion from badly damaged roads, landslides, or any ground disturbance.**
2. **Road building is the biggest impact of any logging job. So salvage logging still must be planned well especially with increased erosion risk.**
3. **Smaller (<12" diameter at small end) or damaged timber and unmerchantable species will be left on site, so it won't look good for a few years at least, until things regrow. Though often unsightly to humans, the large amount of downed woody material is good mulch to prevent erosion and future fertilizer for the forest to regrow, as well as good habitat for small animals. If you want your forest "cleaned up" that will be a significant cost to you.**
4. **The risk of a severe wildfire will increase with all this extra downed fuel, especially as it dries. So if there are large amounts of downed trees downhill from any structures or other areas you want to protect, then a cleared buffer area (30' up to 100' depending on many factors like the size of the material) should be established to reduce risk to areas you want protected.**
5. **But trees do regrow well naturally around here. So planting should not be necessary, unless there is erosion and/or bare mineral soil. Hardwood (deciduous) tree stumps will resprout and grow quickly, and there are usually plentiful seeds. However, this also can be an opportunity to plant highly desired trees (like oaks) if you are willing to tend them every couple years for 5-10 years. Similarly, with natural regeneration you could wait 5-10 years and then release the more desirable saplings.**
6. **After a major disturbance, it is important that many mostly intact trees (>50% live crown remaining), especially oaks and other trees that provide good food for wildlife, be left to provide some habitat structure and as future seed sources.**
7. **After disturbances, Non-native invasive plants can and will quickly infest more areas and/or become more severe They should be carefully monitored and controlled as needed, especially this coming spring before they get too bad.**

A LANDOWNER'S DEVOTION

Sometimes, landowners are putting in the work before we even engage them. These "model" landowners know what they want to do and are actively making their forests healthier. This is sometimes as simple as developing a plan and putting it into action. However, Russ Oates will tell you that nothing in the mountains is simple.

Russ won our EcoForester of the Year Award in 2023 for many good reasons. He is one of the most devoted and directly involved forestland owners in stewarding and restoring his forest for biodiversity, forest health, and wildlife especially. After all, he is a retired wildlife biologist who worked for 28 years for the US Fish & Wildlife Service. He and his wife bought 192 mountainous acres in Yancey County in 1996 and "retired" to return to NC from Alaska in 2013. They bought an additional adjoining 22 acres in 2016.

Over the past 28 years he has planted and tended over 1,200 trees that most benefit wildlife but need help getting established (oaks, hickories, chestnuts, cherries, spruce and fir) in small wildlife openings he created scattered across his property. The vast majority of these trees survived Helene and will be his legacy on the land. He visits every tree up to 3 times a year to control the more aggressive plants (with our crew's help and some of our grant funding) that can outcompete the slower growing oaks to ensure there will be an even more diverse, resilient, and healthy future forest.

However, Helene took down roughly 15 acres of his mature forest: some with wind, but mostly by the large debris flows that tore through the 3 upper drainages on his property, which merged and continued down his formerly beautiful creek to create a bare ditch now up to 8 feet deeper and a devegetated area 30-160 feet wider than the creek was.

Fortunately, he had thoroughly controlled any non-native invasive plants on his original property long before Helene, so his forests will regrow well on their own with native plants, except maybe where it is now bare mineral (clay) soil - which is infertile, steep, and getting baked by the sun now that the trees are gone. However, despite this devastation, he has kept tending his planted trees - fixing up the damaged deer exclosures he built and installed on every planted seedling (once he realized he needed to do that about 5 years ago). He is also taking this as an opportunity to plant more in these newly disturbed areas.

His first priority is to get some vegetation established on these now bare, steep stream banks for immediate erosion control to stop more soil from washing into the creek and further impacting the previously very high-quality water. The simplest and quickest way to do this initially is to spread annual ryegrass (which is cheap, easily available and germinates in 3 days), some fertilizer, and straw mulch on these slopes: then, ideally on steep slopes, cover it with biodegradable coconut fiber matting to hold the seed in place. Once some vegetation is established, erosion will be greatly reduced. And then, he can overseed with more desirable and perennial native grasses and wildflowers. Next, as the annual ryegrass dies back over the summer, the naturally existing and additionally spread native seeds can grow and establish a nice native grass and wildflower stream bank this growing season. This work is still in the early stages, but will proceed further as more assistance is secured.

To truly stabilize these stream banks he is planning on getting perennial woody plants established with year round roots to really hold the soil in place. Fortunately, many floodplain species will grow roots by just putting a freshly cut branch at least half way (preferably 2/3rds) into the ground with at least 2 buds above the ground - called "livestaking". Branches that are at least 1' long and at least ½" in diameter work well for species such as willows (silky or black), dogwood (silky or red osier), elderberry, nine-bark, buttonbush, alder, spicebush, and even larger tree species such as sycamore, cottonwood, and river birch. (For more info see NCSU Extension Service's publication: https://bae.ncsu.edu/wp-content/uploads/sites/3/2017/07/Small-scale-Solutions-to-Eroding-Streambanks.pdf).

Finally, he plans to plant a row of white oaks (the most desirable tree for wildlife), and possibly some shagbark hickories along the top of the stream bank. Russ has applied for Emergency Forest Restoration Program funding from the Farm Service Agency which will help offset the costs of his work. He is still waiting patiently to learn if he was accepted, but landowners that have a management plan and are mitigating wildfire risks should be well suited to be reimbursed for some of their expenses.

This is what one dedicated man (and a very understanding wife!) can do when he devotes his time and invests his money in improving his forest. It is likely that this forest will come back more diverse, resilient and healthy in the future - even after the destruction of Helene.

Photo left: EcoForesters staff assesses damage from a landslide caused by Hurricane Helene.

Photo above: Andy Tait talking to Russ Oates about how to prune oak sapplings to help regenerate the forest.

Photo below: The aftermath of a landslide debris flow, with mud and broken trees strewn across the landscape, marking the path of destruction.

WRECKAGE TO RENEWAL

By: Kelly Waldron

Assistant Stewardship Director

MANAGING INVASIVE SPECIES IN SPRING'S WAKE

Overnight, the buds have started bursting. Spring has a special knack for enlivening the mood, regardless of the year and what it's held. For the past six months we have been living amongst the wreckage of Helene, watching the constant stream of debris being pulled from our waterways while there is a steady hum from chainsaws clearing hazard trees. From bucking trees off of houses in October to helping folks understand the changes to their land this Spring, EcoForesters' staff has been extremely busy. But there is a lurking problem about to rear its head from the soils beneath. Populations of non-native invasive plants in our mountain region have been dormant in the topsoil, waiting for some sunshine and newly found real estate. Now that there is plenty of "free real estate" amongst the fallen trees, aggressive non-native invasive plants (NNIS) will be quick to set up shop and make themselves at home.

Many folks have heard that NNIS are quicker to grow and quicker to spread vs. our native plant fellows. These misplaced plants inhibit native plant regeneration, provide minimal ecological value, and they often degrade our region's biodiversity. One of the main ways they spread is through disturbed bare soils, so if they were established prior to the hurricane, they will thrive after the hurricane. Now that it is early Spring, a lot of the non-native invasive plants have started to leaf out before plants native to southern Appalachia- making identification and treatment much easier.

EcoForesters has been moving quickly to help educate folks with post storm steps, such as how to identify and treat NNIS, where to find native plants, how to manage their bare soil, and disseminate information about funding to help in stewarding their land. Both of our forest restoration crews have been working tirelessly to accomplish the boots on the ground work within the community. This includes the important tasks of forest stand improvement and habitat restoration, in addition to clearing out access roads and trails.

The Southern Appalachians have been dealt a bad hand from this storm, but for the sake of optimism, let's reframe it as a blank slate. There is now plenty of bare soil that has given folks a chance to steward the land with intention and mindfulness that can last generations. Thankfully, there are many organizations and community members that can lend a hand and share resources. It is disheartening to see the changes to our land from something that was beyond our control; thankfully, nature is resilient and can heal with a little help. With Spring comes a new opportunity to see what germinates - our natives will come back and we have to act as shepherds towards our natural ecosystems. In the scope of forestry, we're playing the long game, so let's plant natives, revive the soil and soul, and start the next chapter for our forests through diligent removal of NNIS.

Photo above: An EcoForesters crew members boot after a long day working in the woods eradicating non-native invasive species.

Photo left: A thicket of forest that has been taken over by non-native invasive species.

PROJECTS UPDATE

Through the USDA Landscape Scale Restoration (LSR) and the National Fish and Wildlife Foundation (NFWF) "America the Beautiful" (ATB) grants, EcoForesters has been able to offer support to forest landowners, restoring and protecting healthy forests. These grants have enabled us to address critical ongoing issues, while also responding to the unprecedented challenges our community faces following the devastation caused by Tropical Storm Helene.

With funding from the USDA LSR grant, we made a significant impact supporting forest landowners in 2024. Forestry staff wrote 19 Forest Management Plans covering 2,315 acres and completed 44 consultations on 2,583 acres of forested land. Our field crews have managed 18 grant-funded invasive plant control projects on 130 acres. Efforts under LSR will be winding down as we close out our final few months of this project, but thanks to education offered and programs like sweat equity, its impact will be ongoing.

The NFWF ATB grant helped make possible 7 Forest Management Plans covering 1,150 acres and 10 consultations on 2,345 acres. We also launched our very first invasive species control project under this grant on 3 acres last year. NFWF is on track to increase impact significantly in 2025, following approval of an expansion of our project area.

As we celebrate the progress we've made, we are also aware of the uncertainty surrounding federal funding. This makes our work even more important as we strive to make best forest management practices accessible. The aftermath of Helene has highlighted the need for resilient forests and reinforced the importance of proactive management. Our team is grateful for these grants and the opportunity they provide in supporting our local forests and communities.

Photo: EcoForesters and NC Audubon Society hosted a community walk in Yancey County to highlight land that has been stewarded to improve the habitat for the Golden-Winged Warblers.

THE SCIENCE OF FUEL LOADS

By: Andrew Danner
EcoForesters Forester

THE IMPACTS OF HELENE, AND PRESCRIBED BURNING

If you were around WNC in the fall of 2016, you remember what a significant fire season that was. In the spring of 2025, we are having another significant fire season. This is largely because of the prime weather conditions for fire behavior such as high winds, low relative humidity, air temperature, and low fine fuel moisture. In some part, the amount of woody debris from Hurricane Helene has increased fuel loads across the area. Downed trees and landslides have added to the complexity of wildfire response. In the midst of spring fire season, and without significant research, it's too early to tell exactly how much the actual ignition of downed trees have played into increased wildfire risk.

For a fire to occur we need 3 things; fuel, heat, and oxygen. Of those 3, landowners and natural resource managers can impact fuels the most. The larger the size of the fuel, the more energy is needed; not only to ignite it, but to cause complete combustion. Sometimes large fuels (such as logs) will ignite and smolder from the outside, but never fully burn all the way down to ash.

The finest fuels, the principal ones to ignite: leaves, needles, grass, and even moss are called 1 Hour fuels. They comprise initial fire spread and the heating and combustion of larger fuels. Under dry conditions, these fuels are often flashy and cause surface flames to spread quickly. Small branches and leaves from ¼ to 1 inch in diameter are called 10 Hour fuels. Sizing up to 1-3 inch branches and limbs are 100 Hour fuels. Limbs and trunks 3-8 inches are called 1,000 Hour Fuels, and anything greater than 8 inches is considered a 10,000 Hour fuel. These 10,000 hour fuels typically do not support fire spread but can increase fire duration and severity. If fuel loading is high and distributed across the site (such as from storm damage), high fire severity can be more widespread and can increase both resistance to control and the duration of burning.

The designation of the "hour" of fuels signifies how quickly these fuels react to changes in moisture, with larger fuels taking longer to adjust to changes in atmospheric moisture. Imagine some of the once impressive landscapes, now full of storm damaged and blown down trees. Amongst the pick-up-stick-like pile are a jumbled culmination of fuels ranging from 1 to 10,000 hours. Six months after Helene, many downed trees are still losing lots of moisture, so their full fire risk potential may not even be fully met.

There are many ways to reduce potential fire risk: being FireWise, targeted thinnings and forestry mulching to reduce fuels, and using prescribed fire. We've all heard the expression, "fight fire with fire". That's exactly what our Wildland Firefighters do, when they go into direct suppression. But what if we could use prescribed fire to serve as a multifaceted tool?

Prescribed fire can be a very cost-effective way to reduce forest fuels as well as to meet forest restoration goals and improve overall forest health. One thing to remember is that one burn will actually promote thick growth in the understory, but a series of prescribed burns can help to create ideal forest conditions for sustainable long-term ecosystem health (especially in mixed oak and oak-pine forests).

Since the Fall 2016 wildfires, public interest has spiked regarding prescribed burning. Following this buildup, landowner demand for prescribed burning services has also increased. Nearly all plans for any type of mixed oak or oak-pine forest will the recommend the use of prescribed fire. We can only hope that post-Helene, not only the interest, but more importantly, the willingness and demand for landowners to use prescribed burning will increase.

Photo right: Close up photo of biochar, an evolved charcoal made from woody biomass.
Photo credit: Oregon Department of Forestry.

Photo below: EcoForesters and The Blue Ridge Prescribed Burn Association teamed up for a prescribed burn at Bailey Mountain.

BIOCHAR

FUNDING RESTORATION AND REPLENISHING SOILS

When the Canton Paper Mill closed in 2023, landowners lost the last buyer of small diameter wood in WNC. This material, trees too small or malformed to go to a sawmill, helps landowners offset the costs associated with forest stand restoration or a modest, non-high graded timber harvest. In the absence of a pulp market, either more of the desirable species/sized trees will be cut—or more likely, nothing will happen at all.

Since the Canton closing, stakeholders have been meeting to consider replacement markets and impacts to local economies. Products like firewood, biomass, and aviation fuel additives have all been considered, but in the wake of Helene, biochar has raised the most eyebrows. Biochar is the result of pyrolysis, a fancy word for slowly cooking the wood into charcoal rather than incinerating it. The result is a soil additive with filtering properties that permanently stores carbon in the soil. Given the loss of soil and contamination from flooding, the uses of biochar seem well suited to help with recovery.

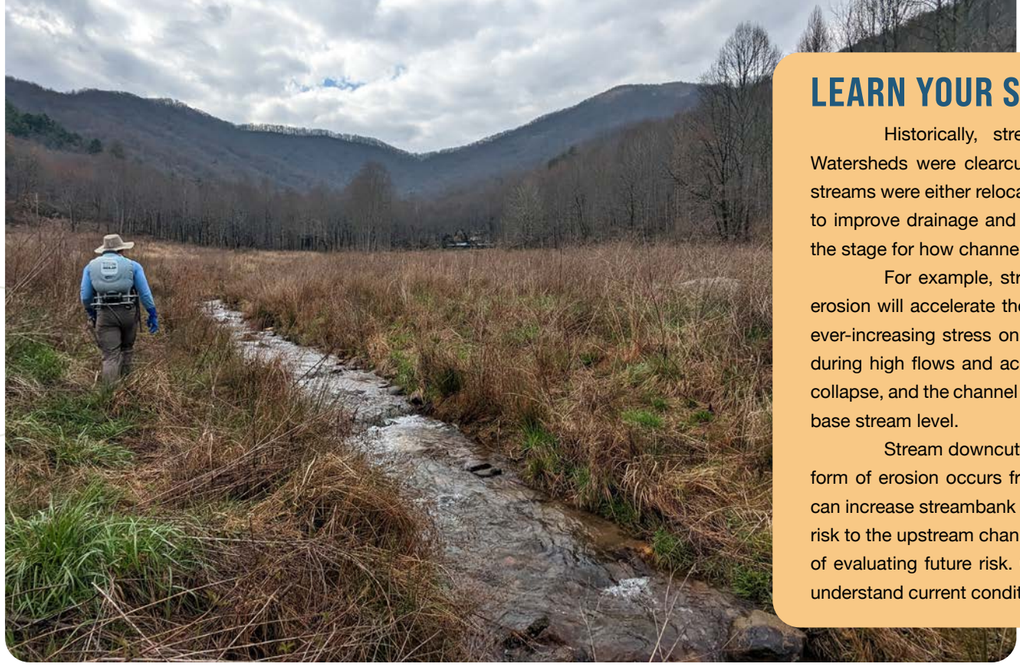
But like any product, a market is needed to pay for the work of bringing salvaged materials to be turned into biochar. Local farmers would potentially be part of an initial market that would help keep local soils replenished and continue to support local agriculture. Mining operations, brownfields and local gardens could also help provide the proper demand that will offset the costs of hauling materials out of fire prone areas.

There is momentum around biochar, particularly as a way to better utilize the salvaged materials now being burned or mulched. We are fortunate to have both state and federal forestry staff, research agencies and institutions, and a somewhat viable forest products infrastructure that has been limping for a while now. Without new markets, we will lose both knowledge and workforce that is well suited to restore forests and mitigate future risks.

AN INTRODUCTION TO UNDERSTANDING STREAM RECOVERY FROM FLOOD EVENTS

By: Jake McClean

Wildlands Engineering Senior Water Resource Engineer



LEARN YOUR STREAM'S HISTORY:

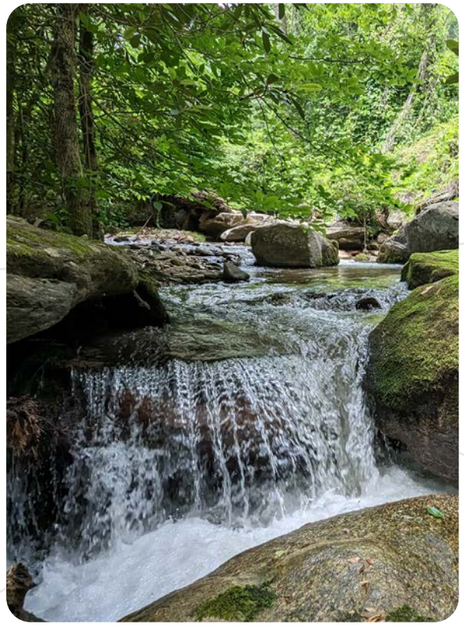
Historically, streams and watersheds have been highly manipulated. Watersheds were clearcut in the late 1800s and early 1900s in Appalachia. Many streams were either relocated to the side wall of the valley or straightened into ditches to improve drainage and expand agricultural production. These legacy activities set the stage for how channels respond to flooding today.

For example, streams confined by berms or deepened through ditching or erosion will accelerate their downcutting. This reduction in floodplain access means ever-increasing stress on the channel, causing larger and more material to mobilize during high flows and accelerating the erosion cycle. Eventually, the channel banks collapse, and the channel widens, working towards forming a new floodplain at a lower base stream level.

Stream downcutting propagates through a process called head cutting. This form of erosion occurs from downstream to upstream, lowering the channel, which can increase streambank heights and threaten crossings. Advancing headcuts pose a risk to the upstream channel and understanding when these exist is an important part of evaluating future risk. Observing streams in less disturbed settings can help you understand current conditions and evaluate potential uplift or management strategies.

Ecoforesters has done amazing things to help streams recover on my projects at Wildlands Engineering. They have helped reduce invasive species pressure on riparian reforestation, an important step in stream and wetland mitigation projects. Reforestation supports the goal of maintaining shaded streams and stable banks. Our projects enjoy reasonable funding and benefit from the input of a diverse group of professionals through the phases of planning, design, implementation, and maintenance. For landowners of working lands in agriculture or forestry, resources for stream management can be more constrained and streams can present significant management challenges, especially in the aftermath of Hurricane Helene. Streams are resilient, but recovery takes time.

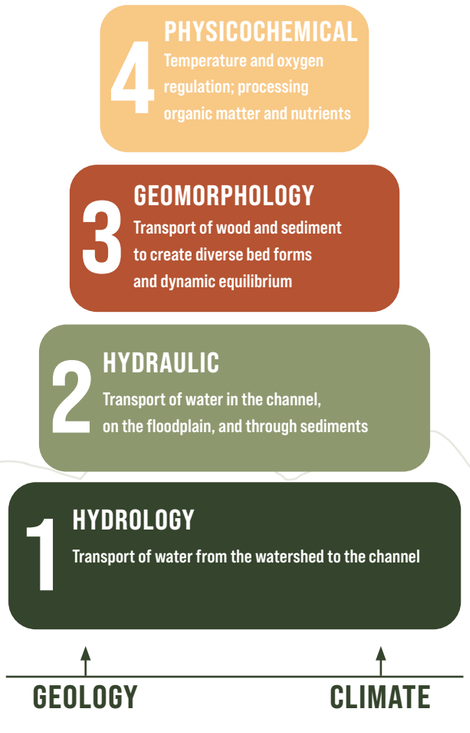
Rather than try to address frequently asked questions on stream recovery the goal of this article is to establish a stronger base of understanding in dealing with streams and to offer guiding principles that can help landowners to evaluate and plan future projects, along with providing some resources to further your understanding.



UNDERSTANDING YOUR STREAM:

The first guiding principle is to spend time understanding and assessing your stream's characteristics. Streamstats (https://streamstats.usgs.gov/ss/) will delineate your watershed and provide a report on the land area and land uses that drain to your stream. Using regionally collected "bankfull" geometry data, it will also predict the typical width, depth, area, and range of flows you may anticipate on your stream. (A .kmz file can be downloaded and opened in Google Earth as one option for visualizing the watershed draining to your stream).

Other websites, such as NC OneMap, provide aerial photography *(https://www.nconemap.gov/pages/imagery)* and topographic information from high-quality Light Detection and Ranging (LiDAR) *(https://www.nconemap.gov/pages/elevation)*. NCDOT has historic aerial photography of high quality that can be used to understand historical conditions *(https://www.arcgis.com/apps/mapviewer/index.html?webmap=91e02b76dce4470ebd7ec240ad202a04)*. Streams also behave and function differently based on their landscape position and the shape of their valley. Understanding your watershed, natural stream geometry estimates, and the land use history provides a basis for evaluating existing conditions and management actions.



DEFINE YOUR ROLE:

Finally, when considering your role in stream recovery, it's important to align your actions with your goals. Stream restoration professionals often employ a pyramid framework for improving parts of the stream system that they can more readily influence - often the physical, hydraulic, geomorphic or physicochemical conditions. The pyramid is influenced by geological factors and climate which drive the hydrology of streams, along with land use. (*https://stream-mechanics.com/stream-functions-pyramid-framework/)*

The resources presented here can help you make sense of your role and improve the basis for your decision making. The problems themselves will be much more complicated and will require tough decisions and likely a prioritization of efforts based on available resources and viable options. I encourage you to talk to people in the community that work in stream and watershed management professionally who may help educate and guide you with how to approach problems and what options you may wish to consider. Try to be open to the possibility that the long game may be the most effective. Remember, streams are a common resource and by positively influencing your stream, you are helping your neighbors to reduce flooding or sedimentation or enhance fisheries and aquatic life on their land. Also, it is understandable that at times expediency and cost will drive your decisions. Try to consider what you can do today, this year, this decade and in your lifetime. Additionally, sometimes engineered solutions can only go so far and management solutions that require sacrifice are the only thing that can further influence outcomes.

Actions that consider increasing flood frequency due to climate change, the nature of streams and their need to access floodplains to function properly, and the influence of land use on hydrology as well as the influence of prior manipulation on current stream behavior will have greater long-term success.

EcoForesters works to help Wildlands Engineering build capacity and accomplish more stewardship goals in forested wetlands and riparian areas.

THE RIGHT PLACE AT THE RIGHT TIME

EcoForesters was created for this moment. Our staff is made up of seasoned natural resource professionals who understand the challenges and risks facing the region's forests. We have identified who needs help and how to help them. We now need your help to put proven outcomes into further action because we are in the right place at the right time.

This newsletter should help you understand what we are up against in response to Helene. Our goal is always to empower landowners to do what they can in support of their forest. But many of the challenges laid out are beyond that goal and will require professional expertise to assess, plan and put into action. Prior to Helene, money was the number one reason that landowners chose inaction and it has only been magnified by this great disturbance.

Our work is funded through a combination of private donations, federal grants, fee for service work and foundations. The current federal funding is no longer reliable, so we will need to make up that difference through our other sources of funding. We also recognize the need to create new funding mechanisms for rural landowners who are either land rich/cash poor or lack the disposable income needed to restore their forests. This landowner base is critical to keeping forests forested and the many benefits like plentiful clean water on the landscape.

We ask that you support our work through a donation of time or talent and share with your friends and family the importance of our mission. The next five years will be spent restoring forests and keeping them resilient in the face of future challenges. Please help us by becoming a member today.

WHAT LANDOWNERS CAN DO:

WILDLIFE HABITAT

- Leave some downed debris on your property (as long as it is further than 30 feet from any structures) to serve as wildlife habitat
- Manage non-native invasive species in clearings to help promote native plants
- Plant valuable trees for wildlife such as oaks and chestnuts

STREAM EROSION/STABILIZATION

- Plant native, fast-growing grasses (such as annual rye) on bare soil to prevent further erosion
- In the future, replant these areas with native seeds and woody plants to stabilize them further
- Livestake with coconut fiber matting to help prevent stream bank erosion

WILDFIRE/CONTROLLED FIRE

- Implement FireWise practices around your home
- Clear all downed wood at least 30 feet away from any structures (or further, if your home is on a slope)
- Consider moving large woody material (over a foot in diameter) up to 100 feet away.
- Adopt fire-resistant landscaping practices, such as selecting plants with low flammability characteristics
- Learn more at content.ces.ncsu.edu/fire-resistant-landscaping-in-north-carolina

INVASIVE SPECIES

- Learn how to identify non-native invasive plants and tell them apart from native lookalikes
- Learn and implement common control methods for the species present on your land
- Landscape with native plants and control NNIS near important native species (such as oaks)
- For larger infestations, you can get an assessment of NNIS on your property
- For more information, contact EcoForesters at info@ecoforesters.org or 828-484-6842

WHY DONATE RIGHT NOW?

Our forests are still in desperate need of help in the wake of Hurricane Helene.

With spring and summer come fire and invasive plant season, both of which have been exacerbated by storm disturbance. Non-native invasive plants are ready to take over new clearings, smothering native plants and reducing biodiversity. The amount of debris caused by the storm increases the risk of severe wildfires, putting our forests and our communities at risk. And many landowners are still dealing with issues caused by landslides, downed trees, and flooding.

But there is hope for the future of our forests! The sooner we act, the better our forests can recover. By controlling invasive plants, mitigating wildfire risk, and restoring clearings and streambanks, we can help our forests grow back better than they were before.

YOUR GIFT CAN HELP ECOFORESTERS:

- Treat more acres of land for non-native invasive species, preventing their spread and helping native plants thrive
- Restore newly created early successional areas for wildlife habitat
- Provide free consultations and educational events to forest landowners impacted by Helene
- Offset the costs of management for low income landowners in need
- Restore beloved trails and recreational areas

TO MAKE YOUR TAX DEDUCTIBLE DONATION GO TO: WWW.ECOFORESTERS.ORG

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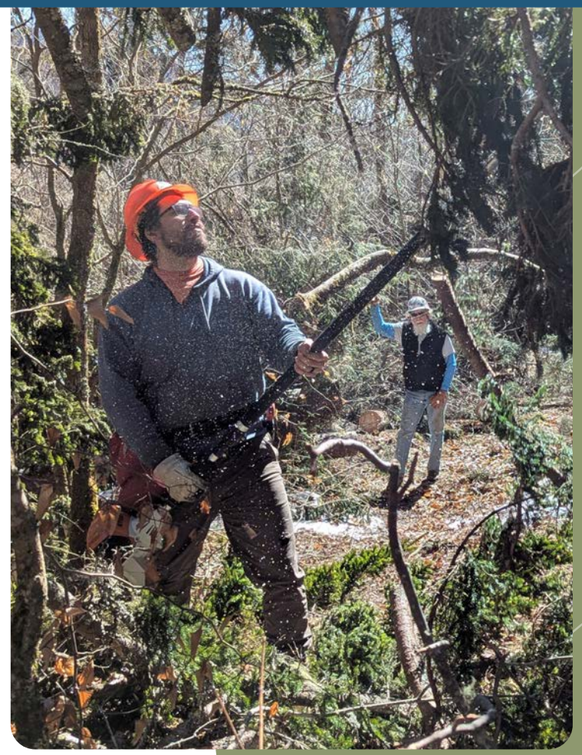
CLEARING LOCAL TRAILS

By: Pat Barcas

EcoForesters Crew Member



The snow hissed as it touched the hot exhaust on my chainsaw. It was February 24, and I was crawling under a fallen pine on the way back to the EcoForesters truck, parked at the Big Butt trailhead on the Blue Ridge Parkway. Our crew had just worked with the U.S. Forest Service and volunteers of the North Carolina High Peaks Trail Association to clear as much of the trail as we could in a day. We encountered walls of large trees. It was a mess.

After Helene hit, the usual once in a while log blocking a trail had become many fallen trees, some stacked on top of each other, blocking numerous parts of trails. Big root balls towered into the air, with the corresponding hole sometimes exploding a trail like World War 1 artillery fire. Trees were twisted from tremendous wind force, the tops broken off and tossed down the mountain.

The damage seemed random, with many peaks left untouched, and bowls full of downed trees. It was as if the wind accelerated down the mountain, twirling and gaining speed in certain coves. You don't have to hear it from me if you're a local, but downed trees in the woods were no longer a spectacle, they were the norm.

EcoForesters was hired by Conserving Carolina to clear their trail systems in Gerton and the Hickory Nut Gorge area, including Strawberry Gap, Wildcat Rock, Florence Nature Preserve, and Bearwallow Mountain. Along with those, we also cleared a section of the Appalachian Trail near Stinking Creek along the Tennessee border, and many other private and public trails.

I personally was thrilled to work on these high profile and local trails. I loved hiking the Conserving Carolina trails before the storm, and it was an honor to work on restoring them post-storm. The work was cathartic, being able to repair and return to normality in some capacity.

Clearing them meant chainsawing all the trees blocking the trail, moving the cut up wood out of the way, and assessing further trail damage that might need repairing. Crews leap-frogged each other as they made progress. In some cases, the trail was to be re-routed around major damage caused by uprooted trees. At Wildcat Rock, we started at the bottom and had to negotiate a creek crossing, since the trailhead was completely gone. Surprises and complicated puzzles of wrecked trees lay around every corner at all trail systems we encountered.

Despite all this, the work was hopeful. At a shelter on the AT, the logbook shared inscriptions of adventure and people finding themselves. This adventurous spirit surely lives on, the spring growing season sprouting and blending in the destruction. And the woods still looked great, with many areas untouched. Recreation will live on in our changed environment.

Photo above: EcoForesters worked to help clear a section of the Appalachain Trail so that hikers could gain access to the trail again.
Photo left above: Crew member Aaron Parra-Asgari clearing the Big Butt trail off of the Blue Ridge Parkway.
Photo left below: A morning safety circle before the crew heads out to clear trails damaged by Hurricane Helene.
Photo right below: EcoForesters crew helping to clear a pile of trees that fell across a hiking trail causing hikers to lose access.

LOGS, LOGS EVERYWHERE

By: Pat Barcas
EcoForesters Crew Member

THE POSITIVES OF DOWNED TREES

The devastation that Hurricane Helene caused will be felt for untold years, among that being a large influx of downed trees of all sizes and species. Landowners have no doubt noticed the increase in coarse woody material deposited on the forest floor. While some may consider it unsightly, it's important to look at the fallen trees through an ecological lens and recognize the positives this glut of material can offer the forest habitat.

We talked with Joey Borders, Forester with EcoForesters, for his take on what the storm aftermath means for organisms large and small. He explained that a natural forest is a shifting matrix of successional stages, with historical storm disturbances shaping the forest.

"What we have now in the modern era is second or third growth forests that have been shaped by logging. Trees are all cut at once, resulting in a continuous canopy that has been in place for decades, and an altered understory that lacks structural diversity," he said.

When Helene knocked down so many trees, it tipped the scales in favor of a more natural forest that provides habitat for all organisms in the food chain. The coarse woody material (not debris) provides mulch that regulates moisture on the forest floor, fertilizer for emerging plants, and habitat for everything from insects, rabbits, rodents, snakes, ground nesting birds and woodpeckers looking for meals in snags. This woody material was greatly lacking before the storm, and now the needle has been greatly turned the other way, providing an opportunity for the food chain to thrive.

"In terms of establishing historical conditions, this kind of disturbance is representative of these stand replacing disturbances that we often talk about that have historically shaped our forest. In that regard, that would be a positive," said Borders. "There are opportunities that come out of an event like this."

Species that thrive in early successional habitats like ruffed grouse, golden-winged warbler and even deer and foraging ungulates will have increased habitat to explore, said Borders.

"As the forest grows in, there will be shrubs and herbaceous species that thrive with the increased spatial and light resources, all species that either forage or nest in those circumstances will have an advantage," said Borders.

Since our forests have been greatly shaped by human influence, there are risks to just walking away and allowing them to naturally regenerate. Non-native invasive species have a chance to explode in the sunlight. Borders also said that since the forests have had a consistent canopy for so long, mesic species (ones that thrive in more moisture) have an advantage over others.

In terms of dealing with fallen trees in a landowner's forest in the most ecological way possible, non-traditional forest products such as cultured mushrooms on logs are a great ingredient in the mix. Borders said that a diversity of thinking will be required, with a mix of using the logs and mitigating fuels that should be a concern.

"Salvage logging is an option that I think is appealing to a lot of people because it allows you to offset some of the cost of managing those fuels, but there's an increasingly limited window we have to salvage logs. There's only going to be a few more months where it's reasonable to get merchantable timber," he said.

Photo Left: EcoForesters' crew leader, Max Fowler, clearing trees to help landowners gain access to their land again.

Photo Below: The hurricane created a mess of debris on this landowners property, as well as many others in the area.

Photos Right: Two examples of trees that have fallen and now have mushrooms growing on the rotting logs.

EcoForesters.org

OUR MISSION

EcoForesters is a 501(c)(3) non-profit professional forestry organization dedicated to restoring and conserving our Appalachian forests through education and stewardship.

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