OSU FORESTRY & NATURAL RESOURCES NEWSLETTER

SPRING 2024

Life on the Dry Side

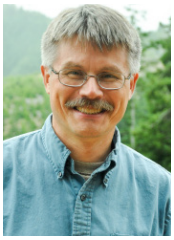
Serving land managers and owners east of the Cascades

Oregon State University

Life on the Dry Side

OSU FORESTRY & NATURAL RESOURCES NEWSLETTER

Serving land managers and owners east of the Cascades



John Punches
Extension Forester in Union, Umatilla, and Wallowa Counties
10507 N McAlister Rd,
La Grande, OR 97850
(541) 963-1061
john.punches@oregonstate.edu

Jacob Putney
Extension Forester in Baker and Grant Counties
2600 East Street,
Baker City, Oregon 97814
(541) 523-6418
jacob.putney@oregonstate.edu

Ariel Cowan
Regional Fire Specialist, Central & South Central Oregon
800 SW, SE Airport Way, Bldg. 4
Redmond, OR 97756
(541) 548-6088
ariel.cowan@oregonstate.edu

Katherine Wollstein
Rangeland Fire Regional Specialist, Harney and Malheur Counties
67826A Highway 205
Burns, OR 97720
(360) 789-3073
katherine.wollstein@oregonstate.edu

Micah Schmidt
Regional Fire Specialist, Northeast Oregon
10507 N McAlister Rd, Room 9,
La Grande, OR 97850
(541) 963-1090
micah.schmidt@oregonstate.edu

Jenna Deibel
Extension Forester; Crook, Deschutes, Jefferson Counties, and Confederated Tribes of Warm Springs
3800 SW Airport Way, Bldg. 4,
Redmond, OR 97756
(541) 516-0934
Jenna.deibel@oregonstate.edu

IN THIS ISSUE

Oregon State University Extension Service

Our Oregon State University Forestry and Natural Resources agents serve all counties in Oregon. Find your local office and agent at: www.extension.oregonstate.edu/find-us

Log Market Report

Data courtesy John Lindberg (Oregon Log Market Report), supplemented by John Punches

It's been a bit over a year since our last Life on the Dry Side and log market report. Way too long – but demand for Extension's East-side programs has ballooned and it's been a challenge to keep up. We could hope that log prices would have also ballooned, but no such luck. Douglas-fir and larch remain our most valuable species, but even they have slipped in most markets – down $10 in the Pendleton area and $45 or more in the La Grande/Elgin markets. Pine prices at Pilot Rock, usually our strongest pine market, slipped $50 across all size classes. Prices for grand and white fir dropped, or disappeared, in northeastern Oregon markets and dropped $35 in Lakeview/Klamath Falls. Prices for lodgepole pine and Engelmann spruce remain low, at $280 - $300 in East-side Oregon markets, with the La Grande/Elgin market currently opting out of these species. Prices for all species are down $40 to $45 in Lewiston.

Have you ever heard that if you want your sore knee to feel better, whack your thumb with a hammer? Well, the sore thumb in Eastside markets right now is the complete lack of a pulp market. This leaves us in a bind when conducting much-needed forest thinning – there's just no market for that smaller material. You'll need to get creative and look for firewood opportunities, contact companies or other entities that utilize biomass for energy, and check locally to see if there are specialty options. These market conditions are discouraging, but don't let that be a reason for ignoring your forests' needs. Take advantage of cost-share assistance programs offered through the Oregon Department of Forestry, the Natural Resources Conservation Service, Soil and Water Conservation Districts, and local non-profits to get thinning and fuels treatments completed.

LOG MARKET REPORT $/1,000 board feet (or ton)							May 15, 2024	
Umatilla/Pendleton/Boardman								
Douglas-fir/Larch	Ponderosa Pine				Grand/White Fir	Lodgepole Pine	Engelmann Spruce	Pulp/Chip Logs (ton)
450	300				400	280	280	
La Grande/Elgin								
Douglas-fir/Larch	Ponderosa Pine				Grand/White Fir	Lodgepole Pine	Engelmann Spruce	Pulp/Chip Logs (ton)
	6-7”	8"+						
380-480	270	280						
Pilot Rock								
Douglas-fir/Larch	Ponderosa Pine				Grand/White Fir	Lodgepole Pine	Engelmann Spruce	Pulp/Chip Logs (ton)
	10-11”	12”+	16”+					
	300	350	380					
Burns/John Day								
Douglas-fir/Larch	Ponderosa Pine				Grand/White Fir	Lodgepole Pine	Engelmann Spruce	Pulp/Chip Logs (ton)
	6-7”	8-11"	12-17"	18"+				
360	120	250	290	375	240			
Redmond/Bend/Gilcrist								
Douglas-fir/Larch	Ponderosa Pine				Grand/White Fir	Lodgepole Pine	Engelmann Spruce	Pulp/Chip Logs (ton)
			17"+					
			400					
Lakeview/Klamath Falls								
Douglas-fir/Larch	Ponderosa Pine				Grand/White Fir	Lodgepole Pine	Engelmann Spruce	Pulp/Chip Logs (ton)
	6-11”	12-16”	17”+					
	280	300	330		8”+ 315-340	8”+ 320		
Lewiston ID								
Douglas-fir/Larch	Ponderosa Pine				Grand/White Fir	Lodgepole Pine	Engelmann Spruce	Pulp/Chip Logs (ton)
500					480	460	460	

It's been a while

By Jacob Putney, Extension Forester, Baker & Grant Counties

Hello ***Life on the Dry Side*** readers – it's been a while. We realize we've been behind on LOTDS issues this past year, so we wanted to take a moment to give you an update on what we've been up to. With three open positions on the eastside, John, Ariel, Katie, and I found ourselves at capacity. Unfortunately, this meant that LOTDS fell to the wayside. However, 2023 was a productive year, and we each offered a multitude of great programs, collaborated on a variety of projects, and developed useful resources.

We started the year with another webinar series, ***Restoring Oregon's Dry Side Forests*** (beav.es/drysiderest23), which yielded our greatest viewership with more than 1,300 live participations. This series explored the complexities of "restoring" forests and other ecosystems to conditions more representative of historical conditions, thinking bout how we can promote resiliency across the landscape. We also published several resources, including an introductory publication on forest carbon, county-specific fire preparedness publications (***Before Wildfire Strikes*** (EM 9405]; beav.es/p5t), a revised guide on fire-resistant landscape plants (PNW 590; beav.es/pS4), and nearly a dozen modules on prescribed fire (***Prescribed Fire Basics***; beav.es/pSo). These resources include relevant, applicable information for learning about a specific topic, and as a tool you can use around your home and property.

In the spring, John offered another prescribed fire training for the Natural Resource Conservation Service (NRCS). These trainings are critical for meeting NRCS job approval authority requirements, qualifying personnel to provide technical, and financial assistance for private landowners interested in implementing prescribed fire. We also hosted Tree School East for the first time since 2018. This event took place at Baker City High School and drew 125 attendees, including participants, instructors, exhibitors, and volunteers. The program included 27 forestry and natural resources related classes, exhibitors, demonstrations, and continued education opportunities. We look forward to offering Tree School East again in 2025. We have also stayed engaged in the partnerships within our respective regions, supporting projects around education, outreach, coordination, and monitoring.

2024 is shaping up to be another great year as well. First and foremost, we are excited to welcome Micah Schmidt and Jenna Deibel to the team. They are eager to engage with their communities and provide programming and outreach that meets the diverse needs and challenges we face. We also just wrapped up our latest webinar series, ***Fire, Fuels, & Density Management*** (beav.es/ffdm). If you've attended any of our earlier webinars, you'll know we frequently emphasize thinning as a tool to keep forests healthy and minimize risk of high intensity wildfire. The logical question many of you have asked is, "how much thinning is the right amount?" This winter's series attempted to answer that question. We pointed our viewers to a really great set of stand density guides designed for the Blue Mountains but are applicable in other Dry Side forests, too. We're excited that folks enjoy our winter webinars, and plan to continue offering them. If you have topics you would like us to cover, please drop any of us a note.

Finally, thank you so much for your continued support of our Forestry & Natural Resources Program here on the Dry Side. We're looking forward to what the rest of 2024 will bring, and we're glad to have you with us.

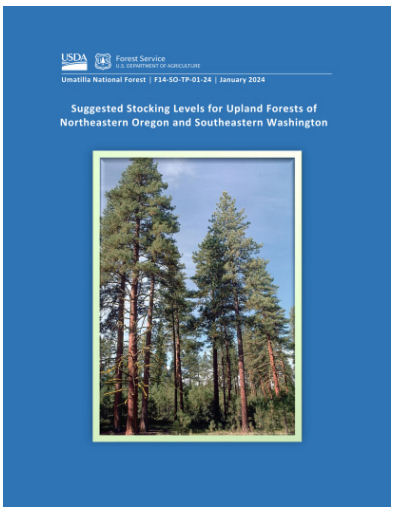


Photo: Dave Powell's excellent density management guide served as a foundational resource for the 2024 webinars.

BAKER, GRANT, & SOUTHEAST OREGON NEWS

HUMONGOUS FUN AT A HUMUNGOUS FOREST HEALTH TOUR

By Jacob Putney, Extension Forester, Baker & Grant Counties

We had a great day on the Malheur National Forest this past October for the "Humongous Forestry Tour: Forest Health in the Blue Mountains." Forest health specialists Mike McWilliams (U.S. Forest Service), Gabi Ritokova (Oregon Department of Forestry), and Dave Shaw (OSU Extension) led us through several stops where we discussed the various forest health issues that were present. This also included a tour of the "Humungous Fungus," a nickname given to the root disease (*Armillaria ostoyae*) present because it is believed to be the largest single living organism in the world, covering over 3 square miles. The icing on the cake was that the fungus was fruiting, producing an enormous amount of honey mushrooms. I want to thank everyone who participated, as well as the forest health specialists who helped make this tour possible. If you have any questions related to forest health, or are interested in attending a future tour, please don't hesitate to reach out to us! If you have any questions related to forest health, or are interested in attending a future tour, please don't hesitate to reach out to us!

Extension Forest Health Specialist Dave Shaw discusses damage caused by bark beetles on the Humungous Forestry Tour. Photo: Jacob D. Putney, OSU.

COMMUNICATING ABOUT COMMUNITY FIRE RESILIENCE

By Katie Wollstein, Rangeland Fire Specialist, Southeast Oregon

The Extension Fire Program was conceived to support local and regional partnerships within Fire Service Areas in ways that will enhance the resilience of Oregon communities and landscapes to wildfire. We do this through programming and partnerships, but it can sometimes be difficult to reach new or different audiences.

Last fall, Ariel Cowan (Fire Specialist–Central Region) and I spent several days with an artist cohort at PLAYA at Summer Lake focused on telling stories of water and wildfire. The purpose of the "***Wildfire + Water: Artists and Scientists Collaborating for Change***" artist residency program offered a venue for artists to spend time with scientists and learn about and reflect on the roles water and wildfire in Lake County. Ariel and I engaged nine artists on topics related to fire ecology, its drivers, and management challenges and — in collaboration with Lakeview BLM and the Lake County Umbrella Watershed Council — led a field tour in the Chewaucan Watershed, which has burned in several major wildfires in the last decade.

The artists from the PLAYA residency will exhibit work they created from their experiences. The goal of the exhibition is "*...that the art will deepen the audiences' understanding of local environmental issues and further suggest ways to become active advocates for and partners in addressing them.*"

The Extension Fire Program was enthusiastic about this opportunity because the art in the exhibition will reach new audiences, communicate about fire in ways we perhaps cannot, and offer new visions for living with fire.

Honey Mushrooms from the Armillaria Root Disease. Photo: Jacob D. Putney, OSU.

What's the deal with forest carbon?

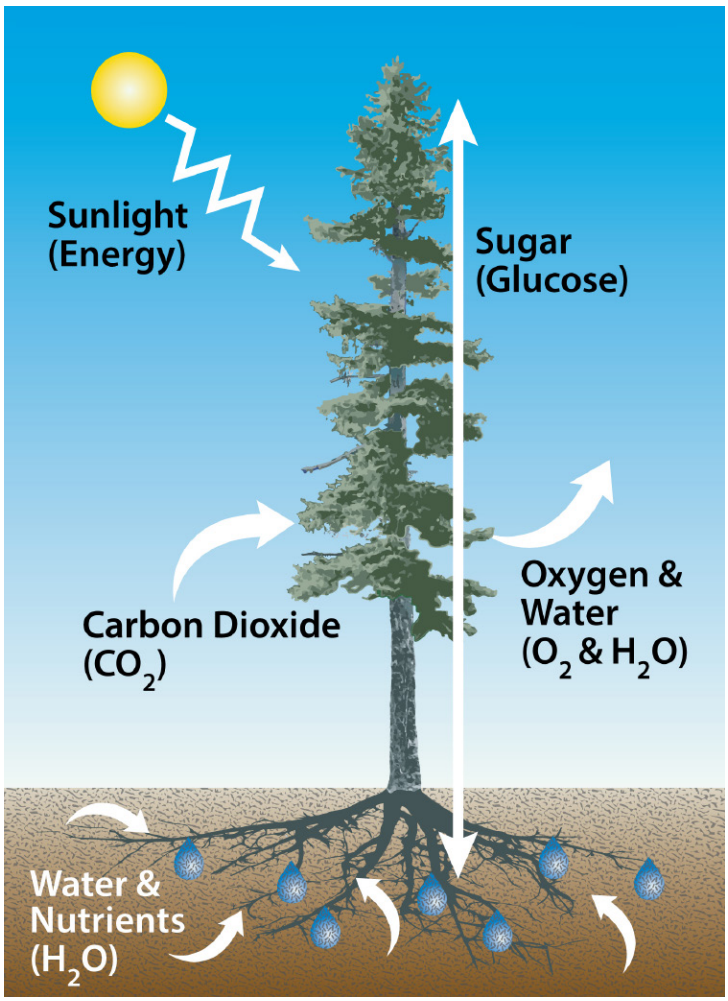
By Jacob D. Putney, Extension Forester, Baker & Grant Counties

Photo: Alyson Yates, OSU

There has been a lot of buzz around utilizing forests for storing more carbon, offsetting greenhouse gas emissions, and selling "carbon credits." This stems from the rapidly growing and evolving carbon economy, which is made up of carbon markets, or mechanisms by which greenhouse gas emissions are offset through transaction of stored carbon that has been measured and verified.

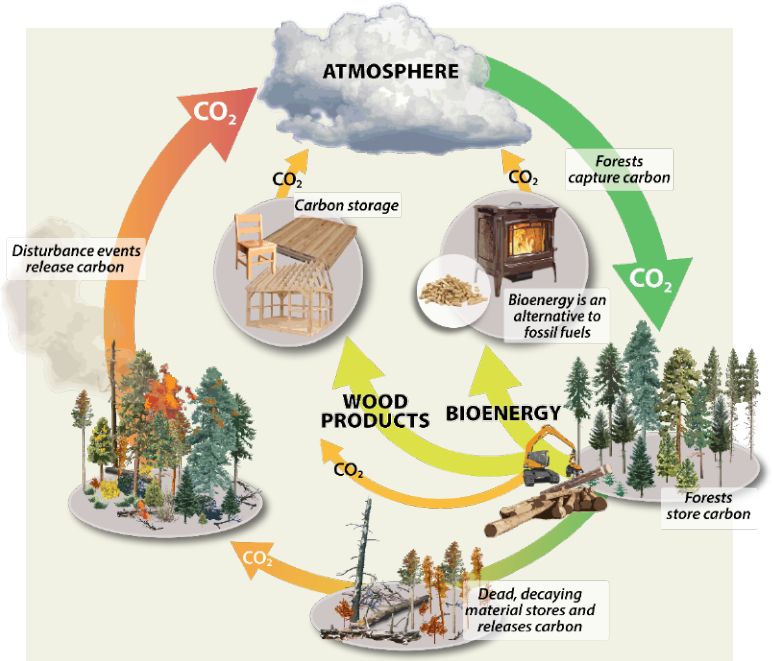
When discussing carbon, we are considering one of its most familiar compounds – carbon dioxide (CO2). Carbon dioxide is a colorless, odorless gas that is one of the primary greenhouse gases, or gases that trap heat in the atmosphere and warm the planet. CO2 is produced through natural processes and human activity, but it is also captured by trees and other plants for photosynthesis. Plants produce their food, or glucose, through this photosynthetic process. Glucose is a form of carbon, and when produced and stored by plants, we refer to this process as carbon sequestration. Carbon storage then describes the process of glucose being converted to plant structures during growth.

Forests play a crucial role in carbon storage. Covering 750 million acres across the United States, forests are our largest terrestrial carbon sink – an area that stores more carbon than it releases. In fact, a recent study found that these forests capture and store the equivalent of 11.9% of U.S. carbon emissions. However, this carbon isn't stored forever, and is part of a dynamic cycle. Carbon is transferred between different pools, such as aboveground (living and dead vegetation, litter, and duff), below



Photosynthetic Cycle. Plants take CO2 from the atmosphere, water and nutrients from the soil, and use light energy from the sun to produce glucose (a simple sugar), a form of carbon. Credit: Gretchen Bracher, OSU.

ground (living and dead roots, fungi, organic matter), soil, wood products, and the atmosphere. This transfer occurs as a result of management activities and/or processes such as photosynthesis, respiration, decomposition, and combustion. Estimating forest carbon is challenging, particularly below-ground within the soil. However, researchers have been working diligently to improve methodologies for more precise estimates. Carbon within a forest stand can be estimated by measuring trees and different tree attributes, similar to a forest inventory. These data can be entered into specific equations that estimate a tree's total biomass and ultimately an estimate of the carbon. This estimate of carbon can then be converted to an equivalent of carbon dioxide measured in metric tons. Metric tons of carbon dioxide equivalent (MtCO2) are the standardized unit for carbon offsets, or a measured reduction of net carbon emissions.



The Forest Carbon Cycle represents each carbon pool and the transfer of carbon between them. Credit: Gretchen Bracher, OSU.

FOREST CARBON PROJECTS

Carbon offsets are generated through activities, called carbon offset projects (or programs), that either avoid emissions or remove carbon from the atmosphere. Projects must follow strict protocols and methodologies, be verified by a third-party, and approved by a carbon registry. Once approved, carbon offsets become carbon credits, which can be transacted within the carbon markets.

Carbon registries are systems that serve as the standard-setting bodies for carbon projects, offsets, and credits. They define the protocols and methodologies, establishing marketplace accountability and transparency. Registries track the generation, ownership, transaction, and retirement of carbon credits. All projects require independent, third-party verification to ensure that they meet these standards, and that methodology was applied correctly. These certification bodies must be accredited, as well as approved by the registry, to provide verification of a project.

In forestry, these activities typically involve removing carbon from the atmosphere through increased sequestration and storage. There are three types of forestry projects: Afforestation/Reforestation, Avoided Conversion, and Improved Forest Management *(Table 1)*.

TABLE 1. TYPES OF FOREST CARBON OFFSET PROJECTS

Project Type	Description
Afforestation	■ Establishing forest on previously non-forested land ■ Must not have been forested within previous 50-years
Reforestation	■ Restoring tree cover through planting or encouraging natural regeneration ■ Areas where stocking levels are less than optimal or were subject to severe disturbance (e.g., wildfire)
Avoided Conversion	■ Prevent conversion of forestland to non-forest use ■ Must demonstrate significant threat of conversion
Improved Forest Management	■ Involve management activities that maintain or store more carbon than would otherwise occur through common practices and/or what is required by regulation ■ Most common forest carbon offset project type

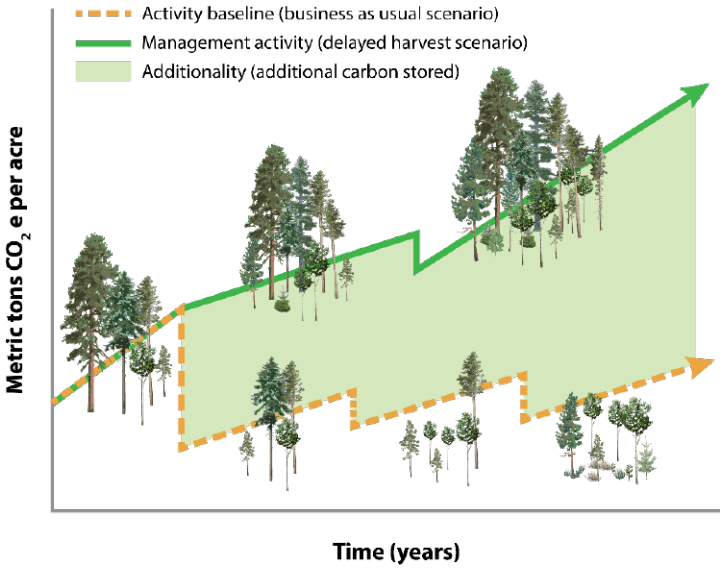
Each project type has different methodologies, commitments, protocols, monitoring, and verification requirements. To ensure quality, transparency, and integrity of carbon offsets, projects must demonstrate they possess each of the following foundational attributes:

- **Additionality:** A project sequesters more carbon than a "business-as-usual" or baseline scenario (See Figure).
- **Permanence:** Requires that the removals be maintained and equivalent to the emissions being offset.
- **Measurability:** Carbon must be accurately measured and inventories so that benefits can be calculated.
- **Non-Leakage:** Leakage results from emission reductions in one area causing an unintentional increase in another area.

A carbon project typically begins with contacting a carbon project developer. Developers are organizations that offer carbon programs, and provide project development, registration, and management services. They will work with you through each step of the process and to develop a project that aligns with your interests and is appropriate for your forest – kind of like a forest consultant.

Processes vary from project to project, but they generally follow these steps:

1. Determine *Feasibility and Eligibility* of your property based on the program's standards and methodology.
2. Carbon is *Inventoried and Quantified* on your property to determine a baseline or "business-as-usual" scenario. This baseline is determined by a multitude of factors, including the geographic area of the forest, regional practices, threats to forest health, regulations, distance to wood products facilities, and more.
3. A *Plan* is developed that defines the specific activities to maintain and/or improve carbon storage over time.
4. This plan is *Verified* by a third-party to ensure standards are met and methodologies were adhered to.
5. Once approved, carbon credits are issued for the additional offset carbon generated by the project.
6. Throughout the duration of the project, periodic *Monitoring* is also required, which includes re-inventory and verification of the additional offset carbon.



To achieve additionality, harvests can be delayed or postponed from the business-as-usual scenario in order to store more carbon over time (represented by the light green shading; Adapted from Breen 2002). Credit: Gretchen Bracher, OSU.

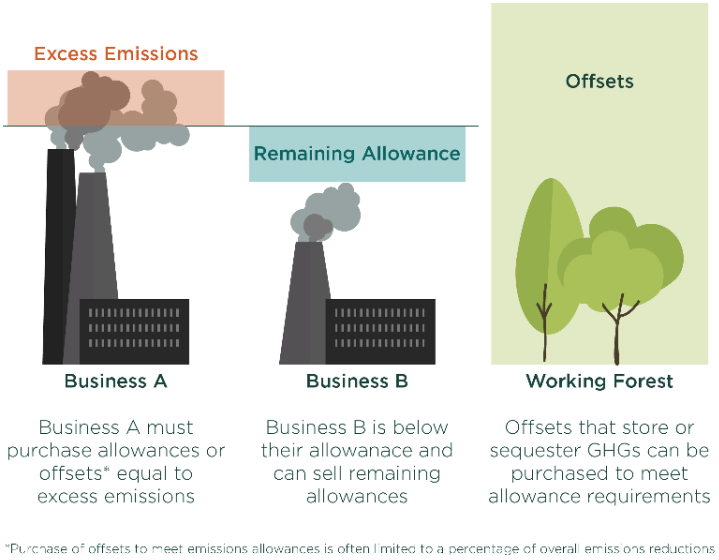
CARBON MARKETS

Carbon markets are the mechanism for buying and selling carbon credits. In a forestry context, forest owners increase carbon sequestration and storage through intentional management activities, which are then used to offset emissions of other entities.

There are two primary types of markets: Compliance and Voluntary.

Compliance, or regulatory, markets require by law or regulation that emitters reduce emissions to meet set targets. Cap-and-trade is an example of a compliance market where a limit ("cap") is set on emissions. An allowance is specified, which is a specific quantity of greenhouse gases that may be emitted. If an entity emits less, unused allowances may be bought and sold (the "trade"). If an entity emits more than the cap, they can either (1) purchase unused allowances from another entity, or (2) purchase carbon credits from an approved carbon offset project.

On the other hand, voluntary markets are not required by law. These markets allow individuals or entities to mitigate their emissions for sustainability, reputational, ethical, or other motivations. This provides for more flexibility than compliance markets but includes a wider range of factors such as price, project types, and demand. This flexibility provides more opportunities, particularly for smaller acreages.



An example of the Cap-and-Trade market. Credit: Forest Carbon and Climate Program, Michigan State University

DECIDING IF A CARBON PROGRAM IS RIGHT FOR YOU

When considering carbon-specific management on your forestland it is critical to reflect on your vision, short- and long-term objectives, and potential tradeoffs. Before initiating a forest carbon project, here are some key considerations:

- **Time Commitments:** A carbon project requires a substantial time commitment to demonstrate permanence. Depending on the specific project and market, contracts can range from around 20 to over 100 years.
- **Up-front Costs:** Costs associated with project development, implementation (management), monitoring, reporting, and verification can total more than $100,000. Particularly for smaller acreages, this presents a substantial barrier to entering the carbon economy.
- **Obligations:** Carbon projects require an ***intentional*** change in management practices to demonstrate additionality, such as delaying/postposing harvest and annual harvest limits. While these are typically designed specifically for your forest, it is important to understand the specific obligations of the project. Periodic monitoring, verification, and auditing will be required throughout the contract time period. As the carbon sector continues to evolve, so do the protocols and processes. As a result, obligations and other requirements may differ between contracts.
- **Tradeoffs:** This intentional change in management means that carbon is a ***planned*** tradeoff and will take priority over other objectives. Consider the time value of money, including the costs and benefits of changing management practices. This does not mean that you cannot conduct a harvest or other management treatment, but there are limitations depending on the obligations of the project. Maintaining a healthy, vigorous forest to reduce the risk of insects, disease, or wildfire is still important. Within our dry side forests, density and fuels management are among our best approaches to establishing and maintaining resilience, which should also be considered before initiating a carbon project.
- **Clauses & Exemptions:** Carbon projects require a legally binding contract, and as with any contract or agreement, it critical to diligently review the requirements, clauses, and exemptions prior to signing. Specifically, consider what is expected when things do (or don't) go as planned, how disputes are resolved, clauses related to unexpected damages, accidental releases, and contract termination. Consider consulting with an attorney or other legal professional to review contracts prior to signing.

Overall, the most important consideration is finding a good fit. Ensure that a carbon project is still in alignment with your personal values and broader objectives for your forest. Further, ensure that the carbon program/developer's values align with your own, and that you can envision yourself working with them long-term.

As you embark on your carbon journey, know that there is an increasing number of resources available, as well as experts who are more than willing to help.

LEARNING MORE

This article was adapted for Life on the Dry Side from a new PNW Extension Publication, ***Introduction to Forest Carbon, Offsets, and Markets*** (PNW775).

- **Find it here:** beav.es/qB8

Trees, stumps & growth rings

How do we reconstruct history?

Micah Schmidt, Regional Fire Specialist, Northeast Oregon

Photo: Andrew Merschel, USFS

You may hear foresters, ecologists, and other natural resource professionals use phrases like “historical fire regime” and “historical range of variation” when talking about forest restoration. But what do these terms mean?

A historical fire regime generally describes how, when, and where fires would have burned prior to Euro-American settlement (generally between 1850-1900 in eastern Oregon). We can define the historical fire regime by the typical **frequency** (time between fires), **seasonality** (time of year), **severity** (tree mortality/soil impacts), and **extent** (size of area burned) of fires that would have been ignited by both Indigenous Peoples and lightning. The historical range of variation refers to the range of forest conditions that would have existed on the landscape prior to Euro-American settlement.

How do we determine what the historical fire regime and range of variation are for a given area?

The most common method is by studying tree rings. Analyzing tree rings, referred to as dendrochronology, provides a historical record going back hundreds (and sometimes thousands) of years. While we can use tree rings to study the growth of trees over time, we are also fortunate that trees often record scars that mark the exact point in time in which fires burned.

The first step in reconstructing a historical fire regime is selecting a study area. Generally, we want to know about the historical fire regime across a range of sites, and sometimes across a range of different vegetation types, to capture the variation across the landscape. To prioritize our efforts, we design a system of data collection sites across the study area, situating sites in a manner that helps us capture the variation that exists.

We then head out to these sites and look for old tree stumps that were cut during the historical logging days. Samples are primarily collected from these relic stumps but are sometimes collected from living trees as well. The stumps

Large, old ponderosa pine tree in the Malheur National Forest with a catface. Photo: Micah Schmidt, OSU.

are preferred because we can cut a complete slice off the top using a chainsaw. With a complete slice, we can analyze all the tree rings and identify the fire scars so that we know the best location from which to collect a sample. Taking samples from living trees is more limiting because we can generally only sample the visual scars that can be seen on trees with "catfaces." Catface is a term which describes cavities on trees (mostly pine trees) that have been repeatedly scarred by fire and have not completed healed by new ring growth.

We visually inspect the tree rings and cut out one or multiple cross-sections of the stump that contain fire scars and as many tree rings as possible. Processing these samples is labor-intensive and includes sanding them, often down to 400-grit sandpaper, to ensure we can distinguish between each ring under a microscope.

After sanding the samples, we assign each tree ring an exact year in which it was formed. This is referred to as cross-dating. This is accomplished by measuring each ring and inputting the measurements into a software package that uses statistical models to assign a year by comparing relative tree ring widths to previously cross-dated samples.

Ring growth on trees within a given area generally responds somewhat predictably to local climate signals. Rings will be relatively larger in wet years and relatively smaller in dry years. Often, we can visually cross-date the tree rings and only need the computer software for verification.

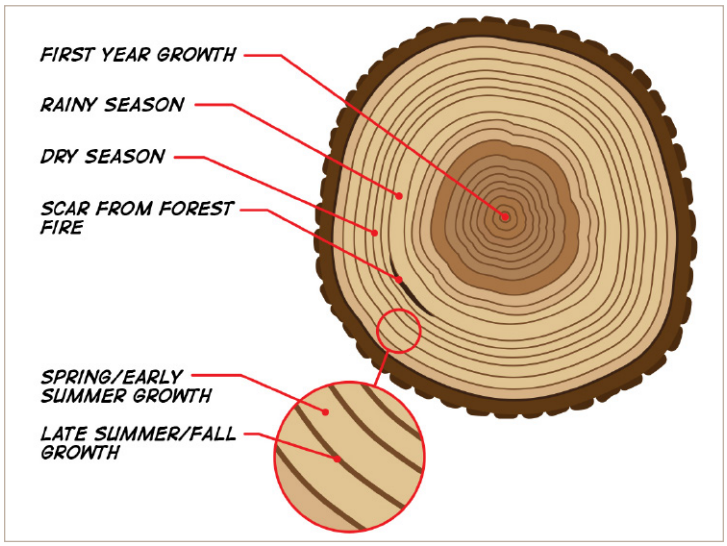
After dating the tree rings on the samples, we examine each fire scar and record the year in which they occurred.

This provides us with the data we need to reconstruct the historical frequency of fires, known as the fire return interval. In some cases, we can identify the season in which the fires burned by looking at the position of the fire scar on the tree ring. If the scar is in the earlywood of the ring, the fire burned in the spring or early-summer. If it is in the latewood, it burned in the mid- to late-summer. If it is on the outer edge of the ring, the fire burned in the late-summer or fall. These are generalities and vary across different climates.

When processing and cross-dating is complete, we then have the historical frequency and seasonality of the fire regime. Fire severity and extent are more challenging to reconstruct. Severe fire events generally kill most of

Collecting a cross-section containing fire scars from a centuries-old Douglas-fir stump. Photo: Andrew Merschel, USFS.

This catfaced ponderosa pine stump was cut decades ago, but the wood inside is still well-preserved and likely contains a centuries-old record of fires. Photo: Micah Schmidt, OSU.



Understanding the anatomy of tree rings allows us to learn more about historical fire and tree growth. Credit: National Park Service.

the trees within a forest stand. We look for areas where most trees have started growing around the same time. This gives us evidence that a high-severity fire occurred and stimulated the regeneration of a new cohort. In eastern Oregon, most fires were not high-severity, stand-replacing events. We have identified that most historical fires burned at low- or mixed-severity given that we have long-lived trees that record multiple fire events. If these fires burned at high-severity, these trees would have not survived to record all those fires. We know that many of the fires in our region were relatively frequent, which would not have allowed enough time for fuel to accumulate and create an environment in which a high-severity fire could occur – at least in most cases.

Lastly, if we establish enough data collection sites across our study area, we can sometimes get an idea of the extent of historical fires. If we see the same fire year across many data collection sites, we can assume that the fire burned an area as large as the combination of those sites, or that we had multiple fires in the same year. Regardless of which assumption, consistent fire years across study sites can help us get an idea of how large of an area would have burned in a given year.

Now that we have reconstructed a historical fire regime, how do we reconstruct the historical range of variation? Using a similar network of data collection sites in unmanaged forests, we collect tree cores from all the living trees within a given site. Processing is also similar, sanding and cross-dating tree cores to determine which trees were living during the period we are trying to reconstruct. With these data, we can identify the approximate density, species composition, and potentially structure (using tree ages/diameters as a proxy for structure) of the historical forest. This is accomplished by inputting the tree ring measurements, and a variety of other tree measurements, into a suite of statistical equations. With enough study sites in an area, we can examine the similarities and differences within and across each site and start to get an idea of what the range of conditions were at a given point in history. The historical range of variation is best reconstructed by combining tree ring research with a variety of other research methods.

Ecology is inextricably tied to history, and we can use these historical reconstructions to help inform our current management decisions, acknowledging that we can never fully reconstruct history. Of course, there are many other contributing factors, including management objectives, site variability, funding, and more, but this is one approach that we can use to travel back in time and plan for a more resilient future.

Sometimes fire scars aren't apparent but are hidden inside. This Douglas-fir sample had seven fire scars that were only identified after cutting off the top of an old stump. Photo: Andrew Merschel, USFS.

This large western larch is a relic of the historical forest structure that existed back when fires burned frequently. It is now subject to a great amount of competition by the surrounding lodgepole pine and grand fir. Photo: Micah Schmidt, OSU.

NORTHEAST OREGON NEWS

By John Punches, Extension Forester, Northeastern Oregon, and Micah Schmidt, Northeast Regional Fire Specialist

CERTIFIED BURN MANAGER

The Oregon Department of Forestry's (ODF) newly implemented certified burn manager (CBM) program is up and running with about 25 persons recognized to date. OSU is one of the program's training providers. I worked with ODF and key partners over the past year to identify CBM training requirements, and this winter, colleagues and I drafted our curriculum. We taught the first two classes in the southwest Oregon and the Willamette Valley in April. Each class is three intense days covering prescribed burn planning, implementation, fire effects, monitoring, weather, smoke management, and a lot more.

To date, we've completed the classroom training with 36 persons. Their next step is to apply through ODF to obtain their field certification books and then be mentored through implementation of three prescribed burns. Jake, Micah, and I hope to host CBM burn mentoring opportunities this fall.

If you have experience assisting on prescribed burns, or as a wildland firefighter, and feel like you're ready to step-up to the next level, check out ODF's CBM program at: beav.es/p5H

NRCS RX TRAINING

The Natural Resources Conservation Service (NRCS) is a major source of technical and financial resources for private forestland owners in Oregon. As interest in prescribed fire has grown, NRCS has stepped up to the plate in a big way. Last year, we hosted a 3-day training to develop NRCS personnel's capacity to support private land prescribed fire. This program was a big success, so this year, Jake, Micah, and I held a 5-day version for attendees nationwide. Participants gained essential knowledge of prescribed fire and on-the-ground experience, taking with them more advanced job approval authority to support private land prescribed fire.

Graduates of the 2023 NRCS Prescribed Fire School at the OSU Oberteuffer Research Forest near Elgin. Photo: John Punches, OSU.

MEET OUR NEW REGIONAL FIRE SPECIALIST

Photo: Micah Schmidt, OSU.

Hello! My name is **Micah Schmidt**, and I am the new Regional Fire Specialist for northeast Oregon. I will be serving Sherman, Gilliam, Morrow, Wheeler, Umatilla, Union, Wallowa, Baker, and Grant Counties. I come into this position with a background in forest management and applied fire ecology research with experience in a variety of prescribed fire applications. I first put my forestry boots on in southwest Oregon, where I worked for a consulting forestry company and used computers, chainsaws, drip torches, and all sorts of other tools to help small woodland owners accomplish their management objectives. I then went to OSU to work in the tree ring lab, where we used tree rings from old-growth tree samples to reconstruct fire regimes in forests going back hundreds of years. During that time, I also decided to get my Master's degree in forestry. I graduated last year and worked for a few months as a forester for the Confederated Tribes of the Umatilla Indian Reservation before accepting this position with Extension.

I feel fortunate for this opportunity with OSU Extension and to work with communities, regional partners, and other stakeholders on fire-related issues. It's not often that a job comes up where one day you can be teaching folks in a classroom, and the next day, you're out putting good fire on the land with a drip torch. On top of that, I can't think of anywhere better to live than La Grande. I grew up in Grants Pass, but it only took a few trips over here the past couple of years to realize that northeast Oregon is a great place to be!

Stop by the Union County Extension office to say hi, reach me by email at micah.schmidt@oregonstate.edu or by phone at (541) 963-1090.

What's up with this plant?

By Jenna Deibel, Extension Forester, Central Oregon

Photo: Hope Stephens, OSU

We are excited to introduce, ***"What's Up with This Plant?"*** a new recurring segment in LOTDS. Each edition, we will share a photo highlighting a "mystery" forest- or range-related health issue we observe, plus a friendly hint or two. Some phenomena will be common, but others may be a tad more peculiar. The answers, along with causes and potential management options, will be provided in the final pages of the newsletter.

Feel free to contact your local eastside Extension Forester if you want to learn more. *Happy investigating!*

Hint: *Since I started pruning my pine tree each spring, I have noticed more and more of these yellow-pink pitch masses appearing on the trunk.*

See the back cover for the answer!

Adults lay their eggs on pine trees in bark crevices near pruning wounds or injuries. Their larvae bore into the trunk and feed on the phloem within the tree. Larvae feed in a winding pattern that causes a large amount of pitch to flow from the entry point. This pitch flow results in the pitch masses seen in the photo.

Damage to the tree is mostly aesthetic, and its overall health is not likely to be significantly affected by the pitch moth's presence.

If pitch masses are already present, they can be manually removed, which will typically remove the larvae within them. Alternatively, pheromone traps can be used to trap male pitch moths to reduce the number of mated pairs on the site.

However, the most effective management strategy is prevention. Pruning should be completed between October and February, so the wounds have time to heal, preventing attraction of female pitch moths looking to lay their eggs.

What's Up with This Plant? Photo: Amy Jo Detweiler, OSU.

Sequoia Pitch moth adult. Photo: Christine Buhl, Oregon Department of Forestry.

Sequoia Pitch moth larvae. Photo: Christine Buhl, Oregon Department of Forestry.

CENTRAL & SOUTH CENTRAL OREGON NEWS

By Ariel Cowan, Central & South-Central Regional Fire Specialist, and Jenna Deibel, Extension Forester, Central OR

The region has been busy with projects to improve forest health and increase wildfire resilience. Several grant opportunities have been applied for, and local partnerships are awaiting news of success, including local applications for the Community Wildfire Defense Grant, Focused Investments Partnership, Western States, Community Assistance, and many other funding programs that can support wildfire resilience and forest health projects around communities and our treasured landscapes. Some of the greatest activity has been triggered by an influx of federal funds to the region. The USDA Forest Service recently designated the Deschutes National Forest and Fremont-Winema National Forests as national priority landscapes. Utilizing funds from the Bipartisan Infrastructure Law, the designation comes from the Forest Service's 10-Year Wildfire Crisis Strategy plan (2021) which outlines goals to restore healthy and resilient forested landscapes, improve the safety and effectiveness of fire suppression and response, and support local communities in building resilience to wildfires. Our region will see increased efforts and capacity to plan, implement, and monitor fuels reduction and forest health treatments.

The Central Region successfully hosted the Central Oregon Training Exchange (TREX) 2024, a prescribed fire training that hosts over forty local and international participants. The objective of the two-week TREX program in Central Oregon was to facilitate peer-to-peer, experiential learning for prescribed fire professionals and others interested in advancing innovative tools to restore fire-adapted ecosystems. Participants engaged in hands-on training in the ecology of fire-adapted ecosystems, communications and community outreach, prescribed fire monitoring, operational assignments, prescribed fire use, and collaboration among a diverse array of participating individuals and organizations.

TREX 2023 participants learning about post-fire effects from instructor Ali Dean of the Bureau of Land Management. Photo: Ariel Cowan, OSU.

MEET OUR NEW EXTENSION FORESTER

Photo: Jenna Deibel, OSU.

Howdy folks! My name is **Jenna Deibel** and it's my pleasure to introduce myself as the new Extension Forester for central Oregon, covering Crook, Deschutes, Jefferson Counties, and the Confederated Tribes of Warm Springs. I am a recent graduate from the OSU College of Forestry (CoF), where I received my Master of Natural Resources with a Policy focus and a B.S. in Natural Resources. During my time at OSU, I gained experience as a CoF student ambassador working alongside extension agents and spent each summer in seasonal positions for the Forest Service. For my graduate work, I conducted the Baseline Wilderness Character Monitoring Assessment for the Ochoco National Forest, reporting on how current management and stewardship efforts support existing wilderness policy, plus providing management recommendations.

Since moving to Prineville in 2020, I have fallen in love with the central Oregon landscape, its unique communities, and the amazing work that those communities have done to help our forests be resilient and thrive. I am sincerely honored and excited to support the place I now call home as your Extension Forester!

While I am a certified general nature nerd, my background is in collaborative governance, policy interpretation, and recreation resource management. With that being said, I am happy to assist central Oregon landowners with any of their forestry and natural resource needs. Again, I am thrilled to be here, and please do not hesitate to reach out by phone: (541) 516-0934, email: Jenna.Deibel@oregonstate.edu or come visit me at the Deschutes County Extension Office!

Oregon State University
Extension Service
10507 N. McAlister, Room 9
La Grande OR 97850
541-963-1010

RESTORATION TREATMENT MONITORING

By John Punches, Extension Forester, Northeastern Oregon, and Micah Schmidt, Northeast Regional Fire Specialist

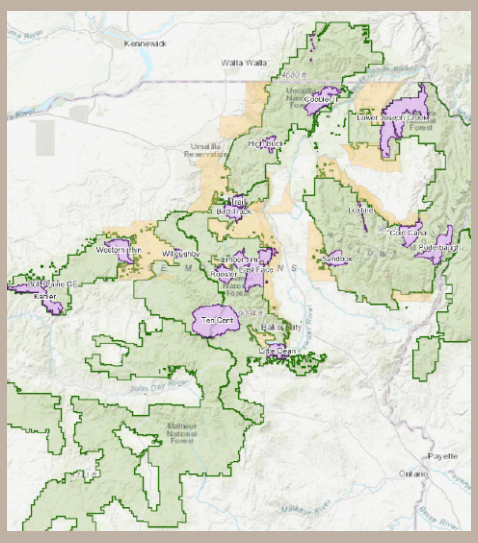
The Northern Blues Restoration Partnership in Northeast Oregon has been making great headway treating federal and private lands to reduce wildfire risk, but we need to know if the treatments are having their desired results. As a part of the Partnership's efforts, each year we train and field a team of technicians to conduct a range of monitoring activities. The crew measures forest conditions, documents riparian conditions, and assesses conditions of plants important to area Tribes.

Additional monitoring assesses bird and mammal responses to fuels treatments. Measurements are taken before and soon after treatment, and we plan to measure again about 5 years after treatment (and again after that if funding allows).

We're just now reaching the point where post-treatment monitoring results are becoming available. If you're a private landowner who has hosted the crew on your property you should soon receive your preliminary report on pre- and post-treatment conditions.

- You can find information about the Partnership and projects online at **www.northernblues.org**
- Monitoring summaries are being prepared and should be available on this website within the next few months.
- Explore the full interactive map at **beav.es/p5r**

NORTHERN BLUES
RESTORATION PARTNERSHIP



Federal fuels reduction and restoration projects underway in NE Oregon. Many private land efforts are occurring too, but not shown out of respect for landowner privacy. Map via ARCGIS.

Answer from pg 14: The culprit of this mystery is none other than the sequoia pitch moth (*Synanthedon sequoia*).