Working Riparian Lands Toolkit Walkthrough Script

Slide 1

Hello and thank you for watching this recorded webinar walkthrough of the Working Riparian Lands Toolkit. My name is Patrick Shults. I'm an Extension Forester with Washington State University and the creator of the toolkit. In this short video, I'll introduce some core concepts behind working riparian lands, provide examples of riparian agroforestry practices, and walk through the components of the Working Riparian Lands Toolkit.

For those that need it, there is a link to a transcript of this recording available in the video description.

Slide 2

Riparian habitat is defined as lands that are adjacent to or surround water features such as streams, rivers, lakes, and wetlands. These unique ecosystems protect water quality while providing critical habitat to a variety of aquatic and terrestrial wildlife species.

Restoring degraded riparian habitat is a major priority for state agencies and NGOs, particularly as a part of salmon revitalization strategies. Farm and forest owners manage lands along critical waterways in lowlands where habitat benefits from restoration can be maximized. Many programs offer technical and financial assistance to landowners to support restoration of these habitats. Common strategies include creating log jams (as pictured on the right), stabilizing stream banks, and establishing riparian buffers.

Slide 3

Riparian forest buffers are natural or planted forests adjacent to water bodies. They are designed with trees, shrubs, and grasses to protect water resources from nonpoint source pollution, such as agricultural runoff. In the process, they sequester carbon, stabilize streambanks, and mitigate flooding.

But riparian buffers can provide significant habitat benefits, too. They moderate water temperatures by providing shade and input woody debris into streams and rivers over time, both of which are important to fish habitat. They also serve as wildlife corridors for terrestrial animals, provide food sources for pollinators, and nesting habitat for birds.

Slide 4

Forested riparian buffers have been repeatedly proven to be effective at restoring and protecting waterways, but they come at a cost. They can be expensive and time-consuming for landowners to install and maintain. They can also remove valuable land from agricultural production and face restrictions on timber harvests, which may create a significant financial burden for producers. This can prevent voluntary adoption of riparian buffers, especially for those that rely on income from their lands. Moreover, not being able to manage those spaces to meet their needs may limit incentive for long-term stewardship of buffers, causing them to fail.

Slide 5

Buffers that are designed to meet landowner needs and goals are more likely to succeed but creating habitat and maintaining production are often presented as opposing objectives. Agroforestry may offer a solution to develop "working" buffers that provide environmental benefits while maintaining opportunities to produce crops and products for commercial sale or personal use.

Slide 6

Agroforestry is a land management approach that combines trees and shrubs with crops and/or livestock to create environmental, economic, and social benefits. It combines agricultural and forestry practices on the same land, which produces diversified, productive, and sustainable systems.

In the graphic on the right, we see a riparian buffer that integrates multiple agroforestry practices, including forest farming, silvopasture, and alley cropping. We'll discuss each of these in the next slides.

Slide 7

Forest farming is the intentional manipulation, integration, and intensive management of woodlands to produce non-timber products. Examples include specialty mushrooms, tree syrups, decorative greenery, nursery stock, and medicinal plants.

Forest farming goes beyond simple foraging and applies management practices that maximize production of non-timber crops. It can be used to create supplemental income and/or diversify farm and forestry operations. It also provides a valuable conservation tool that can alleviate pressure caused by overharvesting native species. These practices are often deeply rooted in traditional ecological knowledge of tribes and indigenous communities, who manage forests for food, fiber, and medicine.

In the picture on the left, we can see rows of ginseng, a valuable forest medicinal, being cultivated beneath a managed tree canopy. On the right, we see an example of a forest that was planted in narrow rows to create a closed canopy and grow black and blue cohosh.

Since these systems can be applied to natural forests, forest farming is agroforestry practice that is most compatible with riparian buffers. However, forest farming can look very different depending on the crops or products being grown. Let's discuss a couple of regional examples in more detail.

Slide 8

Forest cultivated shiitake operations are a great example of a forest farming system that can be applied in a riparian buffer. In this practice, logs are inoculated with shiitake spawn and then managed to produce mushrooms for several years. On the bottom left, we see logs standing upright in an A-frame formation during harvest. The photos on the right show mushrooms sprouting from the logs.

These systems require minimal capital and have minimal impact on the environment. Guidance for this practice in the Pacific Northwest is available in the toolkit for both hobbyists and commercial producers.

Slide 9

Bigleaf maple syrup is another practice that can work well within a working riparian buffer because of its low impact. This practice is called "sugaring" and involves collecting sap from maple trees in the winter and boiling it down to create syrup or other sugar products. The picture on the right shows a maple that has been tapped with sap being collected via a tubing system, while the photo on the left shows the finished syrup in bottles.

Bigleaf maple syrup requires specialized equipment and is a greater investment compared to forest cultivated shiitake, but it is an exciting new forest product with a promising market in the region.

Slide 10

Silvopasture is another agroforestry practice with potential to be incorporated into working riparian buffers for landowners that manage livestock. Silvopasture is defined as the intentional integration and management of trees, livestock and forage production on the same acreage. The picture on the left shows highland cattle being rotationally grazed in a young pine forest.

Many livestock managers become interested in silvopasture as a way of providing shade benefits for their animals and helping extend forage production into the dry season. Trees

can also be managed for long-term tree crops or timber, which diversifies production in those spaces.

Silvopasture typically requires a lower tree density than is natural for most riparian forests to maintain forage production, but it can still be integrated into outer zones of a buffer, as demonstrated by the graphic on the right.

Slide 11

Alley cropping is the planting of rows of trees and/or shrubs at a wide enough spacing to create alleyways in which agricultural crops or horticultural crops can be cultivated. Trees are typically selected to provide additional crops, such as fruits and nuts, or for timber production. These systems are flexible to wide variety of species combinations to meet landowner objectives. The picture on the left shows corn grown between rows of young hazelnut trees.

This practice can be ideal for agricultural producers that are currently row cropping and want to integrate those systems into a working riparian buffer. Like silvopasture, the reduced tree cover means that long-term alley cropping is most suitable for the outer zone of a buffer, as you can see in the graphic on the right.

Slide 12

To serve as an example, here's a graphic pulling the multiple practices together into one buffer on either side of a hypothetical stream. To maximize the habitat and water quality benefits of a buffer, it's important to maintain a small strip of relatively dense, native vegetation closest to the waterway in what's depicted as Zone 1. This is also sometimes called the core zone or inner zone. Avoiding intensive management for crops in this space is recommended, but it can still be designed to include low-impact forms of forest farming like maple sugaring or foraging. Further out in Zone 2, a relatively closed canopy is still important, as well as prioritizing native species, but this area can include more intensive forms of forest farming, including cultivating shade tolerant specialty crops in the understory. Finally, Zone 3, which is often the biggest segment of a buffer, provides the most flexibility to agroforestry practices, including those that require reduced canopy cover, such as silvopasture and alley cropping.

The size of the different buffer zones will vary based on site conditions, size and type of waterway being buffered, local and state regulations, costs, and your objectives.

Slide 13

Working buffers may not be applicable for every site or situation. But, where they are appropriate, they can help alleviate some of the concerns associated with establishing and maintaining a traditional riparian buffer. These three agroforestry practices provide an opportunity to create riparian buffers that produce habitat benefits while allowing landowners to continue to manage that space to meet their objectives, whether that's cultivating crops for personal use or for commercial sale.

Of course, designing a buffer to include agroforestry practices adds a new layer of complexity to planning, design, and management. The Working Riparian Lands Toolkit is meant to be a space for landowners and professionals to explore options, determine inputs and needs, learn about systems design, and find technical resources to support buffer projects.

With that in mind, let's briefly walk through the toolkit together.

Website Screenshare

Okay, welcome to the toolkit. I think much of this is pretty intuitive to navigate, or so I like to think, but we could briefly run through the features and pages together, just so you're aware of what's available to you. First thing you'll see when you get to the toolkit main page, which is what we're on right now.

The first thing you'll see is that there's a navigation panel on the left with a few different options, including the main page, so you can always get back home if you're on a different page. There's 3 different agroforestry practices that we discussed, each have their own guidance available. We have additional resources, get involved in a contact section as well. So we'll go through each of those really quickly.

Now, as we scroll down this main page, we've got a little bit of introductory information. You'll see that the toolkit really gets started right here in this box. See, right now we've got a placeholder for this webinar that we're recording right now.

But there's some good information here in this Get Started section. Now, you'll notice throughout the toolkit that a lot of the information is divided into these collapsible boxes. The goal here was just to prevent you from having to scroll through, because there's quite a bit of information in them. Maybe just save your finger a little bit of work, and all the scrolling that you might have to do by collapsing and uncollapsing these boxes, and vice versa.

So, a lot of this information in the Get Started section is stuff that we just discussed, but I do recommend digging into it as it goes into a little more detail, things like what is agroforestry, the individual practices, discussing buffer zones, things like that. And we also have a goal-setting section here that can help you kind of just orient yourself, help you understand, you know, what are your objectives, so that when you go into the individual practices, You'll have a stronger sense of what you're trying to come out of it with.

Then, again, these are the same links that are available on the navigation panel, these three different practice pages. Before we go to those, I want to keep scrolling and show, this down here, which is a riparian buffer case study. We have several of these case studies available throughout the toolkit, and I really highly recommend taking a look at them. These are examples of forest owners and farmers in Oregon and Washington that have adopted agroforestry at some scale, kind of explores why they did it, what their motivations were, what their experience with it, since adopting it has been, barriers, things like that. So the really great resource from the Forest Service Climate Hub, and strongly recommend reading through them as you, sort of happen upon them in the toolkit.

Now, one other resource I want to point out, which is probably not going to be super valuable for forest owners and farmers per se, but could be very valuable to professionals that might be tuning in, especially those that are writing grant proposals. This needs assessment was done in 2024 via a survey to forest owners and farmers, throughout Washington, but with special emphasis on western Washington and the results of that are available here, and it includes things like, interest in buffers, interest in different, riparian buffer, or working riparian buffer agroforestry practices, barriers to those practices that they are real or perceived, and resources that they would like to develop. So, I think this could be really valuable for writing a grant, obviously, or just determining program direction, that kind of thing.

Alright, so back to the main page. Last thing I'll point out is we do have these featured content strips that are hopefully going to be, if I can stay on top of them, stay updated with recent resources, from WSU or partners, in the area of agroforestry, because I'm not the only one doing this great work. There's a lot of great partners out there creating really amazing resources, and we'll want to make sure that we feature them here. Alright, so let's dig into one of these practice pages real quick.

You'll notice, as you dig through these, these practice pages are going to be structured more or less the same way, starting with, obviously, with the definition, exploring the benefits and challenges a little bit.

And then each section will also... or each, practice page will also have a section on how it fits into a riparian buffer with a refresher on these different buffer zones. Now, one thing that's different about forest farming is that we have these crop profiles. And the reason that we have that is that forest farming, it's kind of an umbrella term that can encompass a lot of, you know, really different practices. So, for instance, making big leaf maple syrup is extremely different from, you know, growing organ grape or forest-cultivated shiitake.

So, there's multiple crop profiles available right now, and I hope to continue to add those, especially with more native species to Washington. But for what's available right now, a lot of those do have similar structure, just like the practice pages.

Let's dig into the maple syrup one real quick, just as an example. So, start with a little bit of background on this, you know, what's its history, broadly, as well as in the, you know, in the Pacific Northwest. Discuss an overview of the process and the inputs required, just so people that are considering this have an understanding of what all is involved, is this, like, a high capital input, low capital input, that kind of thing, etc.

Here we have some examples of maple sugaring equipment that are used just to get people acquainted with that. Considerations for riparian buffers, right? How can this specific practice function in a riparian buffer? And then lots of additional guides and resources, because, you know, in some cases, these crop profiles will have more guiding language, but in many cases, that guiding language is already out there, and this will serve as a hub. For those, you know, to link out to multiple different practices, or sorry, not practices, resources.

Alright, going back to the forest farming page, you'll see, there's more collapsible information, like forest farming and traditional ecological knowledge. Each practice page will also have a section on goal setting, their own case studies, and then they dig into things like site assessment and design and establishment, and then maintenance as well. So, looking at those in three stages of site assessment, design, and establishment, and maintenance. And there is repeated content between these practices, but it was all rewritten with that practice in mind. So, even though some of the language is going to look the same and is in fact the same, you'll find that there are pockets and details as you sift through that are very specific to that practice. For instance, when we talk about soils, there'll be information that's really specific to, you know, cultivating forest farming crops. Indicator species, for instance, in site assessment is one that's very important to forest farming, but maybe not as important to some of the other practices.

So, let's go over to silvopasture real quick, just to see it. Again, you know, defining it, discussing the benefits, exploring its role in riparian buffers, what are their goals, case

study, etc. Same structure. Now, one thing I want to point out that's true for forest farming and silvopasture, but not for alley cropping, as we'll see next, is that forest farming and silvopasture were both written from the perspective in design and establishment of either starting with an existing forest or planting a forest to create that system. So, for silvopasture, starting with pasture and adding trees in is called silvopasture by addition, and that has its own considerations, like tree arrangement, tree species, you get to make a lot more choices, right? Now, starting from a forest and turning that into a silvopasture, or a silvopasture by subtraction, is different. You're limited in your choices, but there's still their own considerations that need to be, you know, brought into mind as you're doing your planning.

We also have a section on forage and livestock management, of course, lots more resources, hopefully focusing on the Pacific Northwest. In some cases, you'll see an asterisk, and that means that that guide was meant, or created specifically for our region, here in the Pacific Northwest, and I tend to push people towards those, just because it's always better to have regionally specific information.

Alright, last but not least, alley cropping. Again, same format here, not much else to share, goal setting, case study, really cool case study from Snohomish County, Washington, site assessment, design and establishment, and lots of, resources, although there are fewer resources available for alley cropping than the other practices.

Okay, so let's jump over to the additional resources page. Despite its name, I don't want these to be considered an appendix. I think these are really valuable, and just as valuable as these practice pages, and I really encourage people to explore them. I want this to be a library of resources that continues to be developed over time. So, for instance, this is a great spot to find technical assistance providers, and you'll notice that on these practice pages is where technical assistance providers are mentioned, they'll link you to this page where you can find agroforestry consultants. We're starting an agroforestry consultant directory. And then links to different agencies, like conservation districts, NRCS, DNR, Washington State University Extension, of course, that might be able to assist you with agroforestry design and implementation.

On top of that, we have a lot of other technical guides and resources. This is a good place to find a more generalized resources that deal with more than one practice. So if you're really just looking at alley cropping, then you could just take it back to the alley cropping page and look at the additional resources at the bottom of the page there, down at the very bottom, as we had pointed out before, additional resources for each practice. But for more general resources, this technical guides and resources section is available, and you can see we've got a lot of them, including resources from outside the Pacific Northwest.

We also have financial and marketing resources. This includes a lot of grants and I marked any grant that's available directly to a producer that doesn't need to go through a state agency or extension or anything like that, with a P, which means a producer can indicate, or a producer can apply directly for that funding. So there's several grants available here that can help, or other financial assistance programs that can help support agroforestry implementation. We also have financial tools, different calculators, things like that, and marketing resources.

Now, regulatory information assistance is important because we're dealing with waterways, and waterways are often highly regulated in Washington state, and those can be kind of hard to navigate, frankly, and so there are several resources available or links here to different agencies that control those or handle those, icluding agencies like WSDA, which handle things like food processor's license and the cottage food permit. So I would say that there are standalone resources, books, guides, things like that, but there are also people that can help you, on-site or otherwise to determine what regulations you're facing on your property.

And then, last but not least, we have some just general guidance from different institutions that work in our area, as well as some national institutions that focus on agroforestry, in case you just kind of want to explore other entities that are really actively working in this field and get involved with them.

Speaking of get involved, we have a section on that, and hope to build it out over time, keep it updated with events. For folks that are interested in staying up to date on this toolkit, you could fill out this interest form. It's just a Google form where you put your email, and then I could send you updates when the toolkit has been upgraded in some way. Ideally, it'll be a significant way, not just a new picture or something like that. So if you want to stay up to date on the toolkit, how it's changing, as well as events related to it, you can fill out that interest form there.

And then last is a contact page, that's me here, and you have several opportunities, or, sorry, my emails in several places here. So if you want to get a hold of me, whether it's a question or a comment, and including suggested additions or edits to the toolkit, please, please feel free to contact me. You can't say I'm hard to find, I tried to pepper my contact information throughout this toolkit.

So, with that in mind, I hope that you've got a good feel for what this toolkit is, and does, and how it's formatted, how to navigate it. Of course, as I said, if you have any questions, please feel free to reach out. Otherwise, thank you for watching this recording. Please enjoy the toolkit.