

# Fieldbook

COLUMBIA LAND TRUST



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Conserving and caring for the vital lands, waters, and wildlife of the Columbia River region through sound science and strong relationships.

## SPECIES SPOTLIGHT

### Western Pearlshell Mussel

(*Margaritifera falcata*)

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Cover photo: Land Trust staff relocate native freshwater mussels in Wildboy Creek.  
Inside cover: A Columbian white-tailed deer at Julia Butler Hansen Refuge. Photo by Jake Bonello

Columbia Land Trust has earned accreditation from the Land Trust Alliance, which recognizes land trusts that adhere to national standards for excellence, uphold the public trust with rigorous ethical standards, and take steps to ensure that conservation efforts are permanent.



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## Our connected future

We can all recall outdoor spaces from our own childhoods that look different when we visit them today. Forests we used to run through are now neighborhoods, fields and meadows are now shops and restaurants. Wilderness feels further away than it once did. Moments like these can be discouraging, but they're also a reminder that we're not powerless and collectively we can make a difference. The stories in this *Fieldbook* highlight how when we come together to meet the challenges facing our region, we reignite hope for a future where we are better connected to nature and to each other.

This October we held our first Wild Splendor gala in five years. It was incredible to see so many of you there and to celebrate what we have accomplished. As I said in my remarks, people make the difference in conservation, and it takes a combination of landscape-scale vision, and individual attention (that's you!) to achieve success.

Inside you will find stories that showcase both big-picture, long-term conservation visions and individual dedication to nature. Our recent projects include working with the Cowlitz Indian Tribe to remove a dam and unlock more than six miles of upstream habitat for salmonids for the first time in a generation, planting thousands of native bulbs provided by a local nursery at a future oak woodland, and restoring a functional wetland in the Columbia River estuary with support from the U.S. Fish and Wildlife Service.

These examples and many others are part of the legacy of conservation we are building together. Columbia Land Trust's approach reflects decades of thoughtful and strategic refining of the unique role we hold, collaborating with communities, partners, and decision-makers to achieve a broader impact. We are committed to conservation that lasts.

At Columbia Land Trust we often say that the time to act is always now, because once the land is lost it is lost forever. As we approach the end of the year and look ahead, you can help us secure more forests, connect more wildlife corridors, and create more backyard habitats by making a gift this season. Your donation will ensure that we are ready meet the challenges facing the region we proudly call home. Thank you for your commitment to caring for these lands and for sharing our hope of a connected future.

- Meg Rutledge, Executive Director



**You can help us secure more forests, connect more wildlife corridors, and create more backyard habitats by making a gift this season.**

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# The Removal of Kwoneesum Dam is Complete

## Wildboy Creek is Wild Again

After four months of de-construction, the Cowlitz Indian Tribe and Columbia Land Trust have completed the removal of a defunct dam near the headwaters of a Washougal River tributary. The removal will restore a natural ecosystem within the Cowlitz Indian Tribe's ancestral lands and immediately benefit salmon and steelhead.

"We are thrilled to have successfully completed the removal of Kwoneesum dam," said Cowlitz Indian Tribe Habitat

this project enter this crucial stage, bringing us closer to a restored and revitalized ecosystem."

"Columbia Land Trust is here to deliver conservation that lasts, and that has meaning for the peoples and places where we work," said Executive Director Meg Rutledge. "Being able to collaborate with the Cowlitz Indian Tribe, who always have been and always will be leaders in stewarding and caring for lands and people, is a privilege. The dam removal is the first phase in our shared vision for the restoration of the ecological integrity of this landscape."

The process began with the diversion of upstream flows and the removal of an estimated 20,000,000 gallons of water from the reservoir behind the embankment dam. Three new tributary channels were excavated within the reservoir footprint and restored using logs and native gravels including those excavated and stockpiled from the initial reservoir excavation, dating back to 1965.

Downstream, a half mile section of Wildboy Creek was enhanced with the installation of logs anchored to bedrock and covered with rock and gravel to restore the degraded streambed and provide spawning substrates for fish.

Additional restoration, erosion control, and native planting activities will continue this winter within the nine-acre footprint of the former reservoir and the surrounding forest.

For public safety, the dam area and surrounding forest will remain closed to the public until these additional restoration efforts are complete. The Land Trust plans to re-open the property to the public for day use in 2025. 🌱

*Looking down Wildboy Creek at the former dam site.*

Restoration Program Manager and project lead Pete Barber. "This was a significant undertaking, made possible by years of collaboration of dedicated individuals and groups all set on restoring this area to its original beauty and repairing this vital ecosystem."

"The removal of Kwoneesum Dam marks a significant milestone in our journey to restore the natural beauty and ecological balance of our ancestral lands, which in this case has been in the process for many years," said William Iyall, Cowlitz Indian Tribe Chairman. "As we work to restore the area to its original state, we honor our ancestors and ensure that future generations will continue to thrive in harmony with the land. We are thrilled to see



See a timelapse video of the dam removal and the full list of project partners:

[COLUMBIALANDTRUST.ORG/DAM-REMOVED](https://COLUMBIALANDTRUST.ORG/DAM-REMOVED)

# Western Pearlshell Mussel

(*Margaritifera falcata*)

## SPECIES SPOTLIGHT

As a part of the Kwoneesum dam removal, Columbia Land Trust and the Xerces Society relocated about 3500 native freshwater mussels living in a portion of Wildboy Creek that was going to be de-watered. This gave us an up-close appreciation for these invertebrates and their unique lifecycles!

"Freshwater mussels are like gems in the water," said Emilie Blevins, Senior Conservation Biologist, The Xerces Society for Invertebrate Conservation. "They are valuable for the roles they play in our creeks and rivers. Finding an abundance of western pearlshell in a creek with a long history of human impacts like Wildboy is significant. Our hope is that, by taking the time to carefully relocate these mussels all by hand, we are seeding hope for the future. As fish return to the restored sections of Wildboy Creek, we hope that the freshwater mussels are along for the ride, too!"

Although they often go unnoticed, freshwater mussels have been around for more than 200 million years and are an important part of aquatic ecosystems. Their presence in the Washougal watershed is a good indicator of biodiversity, and they can improve water quality by filtering algae, bacteria, and pollutants. A single mussel can filter 10-15 gallons of water a day. They are a nutrient-dense part of the foodchain eaten by otters, raccoons, herons, and kingfishers. Mussel beds also enhance fish habitat by creating places for fish to hide, rest, and eat.

There are hundreds of species of freshwater mussels across North America and nearly 1,000 globally, but only three kinds are found in Oregon and Washington: floater mussels (*Anodonta* sp.), which includes several species, western pearlshell mussel (*Margaritifera falcata*), and western ridged mussel (*Gonidea angulata*). The mussels in Wildboy Creek are western pearlshell mussels.

Freshwater mussels rely on fish to complete their life-cycle. To reproduce, they release tiny larvae into the water, which attach to the gills of fish and are transported up

## FAST FACTS

Mussels have a two-part shell and burrow to the bottom of lakes, rivers, and streams, by digging a "foot" between rocks and other substrates.

Can live to be more than 100 years old.

Usually found in groups called "beds" which can contain thousands of individual mussels.

Use their rock-like camouflage to avoid predators.

or downstream. After several weeks, the juvenile mussels drop off the fish and sink to the bottom of the stream to burrow in a new location where they will filter feed for the rest of their life.

Over 75% of freshwater mussel species in North America are listed as endangered, threatened, or of special concern. Because they rely on water to feed, breathe, and reproduce, they are sensitive to changes in water quality and can accumulate contaminants. Their populations have been harmed by water pollution, construction that disrupts streams, and invasive species competing for space and resources. This makes them an indicator species, meaning that changes in the health of their populations often indicate changes in the health of the broader environment. 🌱





# WORKING TOGETHER TOWARD FUNCTIONAL WETLANDS

## Our Latest Restoration Project Along the Elochoman River

Elevation is everything in the Columbia River Estuary, where a difference of just a few feet makes a major difference for terrestrial and aquatic species. At the Land Trust’s 180-acre Indian Jack Slough site in the Elochoman River watershed, we recently adjusted the land’s elevation profile across about 50 acres to improve ecosystem functionality. By creating new ponds and mounds, the land will better support a variety of native vegetation types that benefit migratory waterfowl and federally threatened Columbian white-tailed deer (*Odocoileus virginianus leucurus*). “This was the final phase in a multi-year restoration effort,” said Coast Region Stewardship Manager Austin Tomlinson. “We originally conserved this land to benefit Columbian white-tailed deer, and this project accomplished that and simultaneously improved habitat for other species.”

Excavation and earthmoving took about three weeks and were immediately followed by native seeding. Native planting of bareroot stock will come in winter 2025.

This 50-acre restoration project builds on the 150-acre floodplain reconnection project we completed in 2022 at Nelson Creek, just to the east of Indian Jack Slough.

The work was made possible by the North American Wetland Conservation Act (NAWCA) grant and the U.S. Fish and Wildlife Service’s Partners for Fish and Wildlife Program, which provided

staff and an excavator and bulldozer from the nearby Julia Butler Hansen Refuge for Columbian White-tailed Deer (JBH). Additional funding for site preparation and planting was provided by the Natural Resource Conservation Service (NRCS). PR Worth was the excavation contractor hired for this project.

“Washington’s Highway 4 divides JBH from the Columbia Land Trust sites, but we are neighbors and the lands collectively provide important habitat for deer, waterfowl, and other wildlife,” said USFWS Biologist Kirsten Brennan. “This project was a great opportunity to work together to accomplish shared goals.”

In the northern area of the property, which was formerly overrun with invasive reed canary grass, the JBH team excavated two deeper ponds that are about 30-50 feet wide and will hold more water and inhibit the growth of reed canarygrass. In turn, this will encourage plant diversity and improve habitat quality.

These ponds and channels were also connected to Indian Jack Slough, a tidal slough of the Elochoman River that runs through the adjacent JBH refuge.

“Even during construction, we saw wildlife coming through including dragonflies, deer with fawns, and a variety of birds. I can’t wait to see what the area looks like after it really starts raining,” said Brennan. 🌱



“This project [benefitted Columbian white-tailed deer] and simultaneously improved habitat for other species.”

Austin Tomlinson,  
Coast Region  
Stewardship Manager

# Sowing the Seeds of Oak Woodland Restoration



More than 160,000 native wildflower bulbs were sown in the Tualatin Valley this fall as part of the first phase of restoration at Rainbow Natural Area. Nestled in a crook of the Tualatin River, our team is working to restore this former agricultural field into a diverse oak woodland and prairie ecosystem booming with wildflowers and other native plants. Habitats like these were once predominant in this area but are now rare.

The bulbs planted included Great camas, crown brodiaea, white brodiaea, and narrowleaf onion bulbs, which were sourced from Scholls Valley Native Nursery. For over 20 years, co-owners George and Sara Kral have been growing and hand-collecting hundreds of thousands of native seeds and bulbs. Their assortment includes local species that are well-adapted to thrive at Rainbow Natural Area.

Sowing these small but mighty bulbs into the earth was the first step of this multi-phase project, which will eventually see oak trees, grasses, sedges, shrubs, and even more wildflower bulbs planted in the future.

“I felt like a kid out there, tossing handfuls of bulbs onto the dirt,” said Natural Area Manager Emily Matson. “Many of these bulbs will flower next spring. They’re getting a head start to get established before we seed other plants in the remaining spaces. We are intentionally layering in groups of plants over time, giving them all a chance to find their niche in the prairie we’re working to create. I’m excited to see what unfolds when things start growing!” 🌱

# Wild Splendor 2024



Nearly 300 people joined us in October for the return of our Wild Splendor gala! We are grateful for the commitment of our community who came together to make a difference for the nature of the Northwest!

It was an incredible evening of conservation and celebration. The funds raised will go a long way in enabling us to achieve our ambitious, science-based conservation goals and continue to care for the lands, waters, and wildlife of the Columbia River region.

As East Cascades Oak Partnership Manager Lindsay Cornelius said in her remarks, “Community is core to resilience. We remind each other who we are and what we care about. Building a future that we want to live in is not a passive process and Columbia Land Trust cannot do this powerful work without you.”




We’d also like to thank our generous sponsors who made this event possible.





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end of the year is  
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