

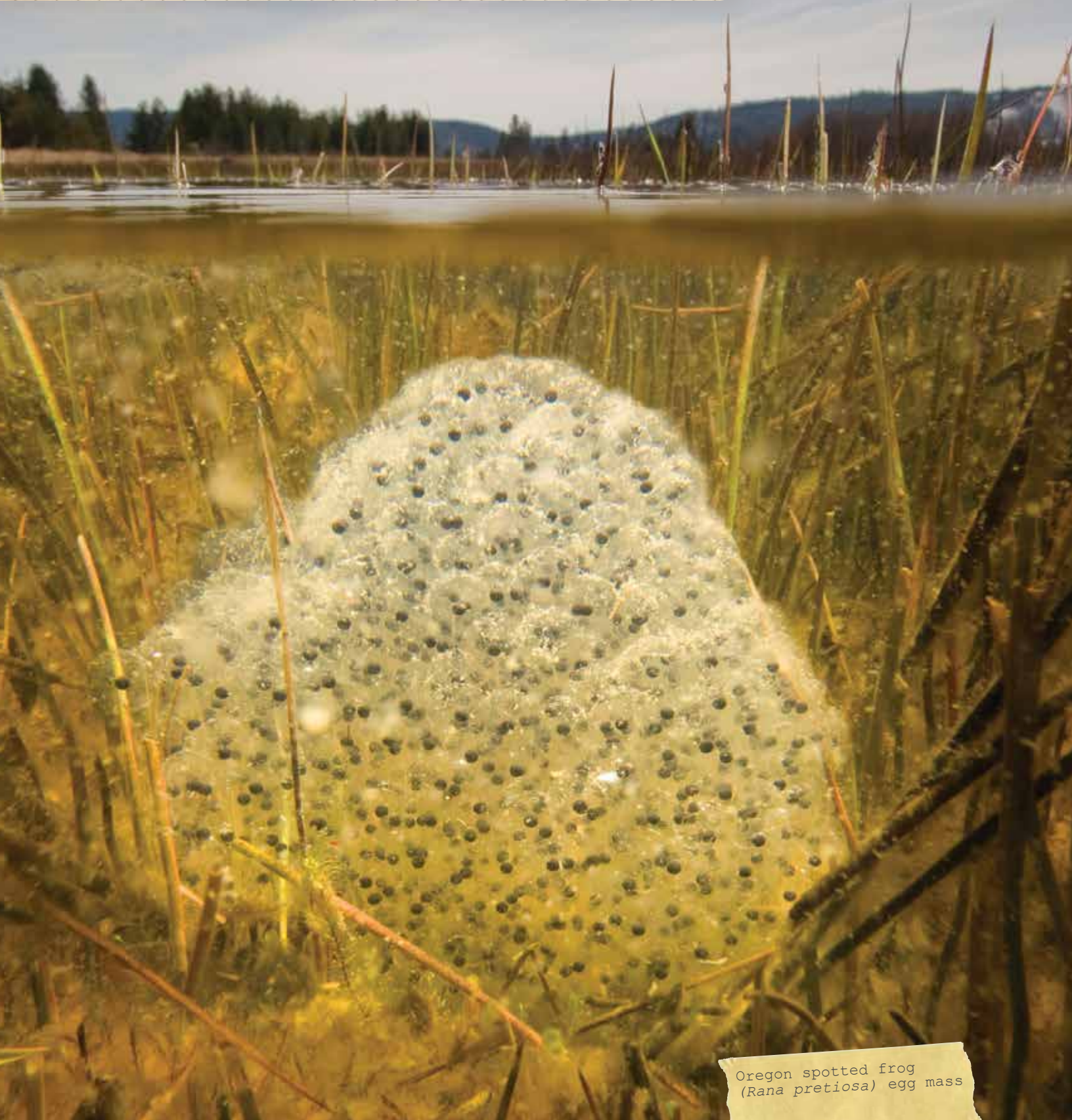
COLUMBIA LAND TRUST

Fieldbook

Conserving and Caring for Vital Lands, Waters,
and Wildlife of the Columbia River Region

SUMMER 2015
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Annual Report 2014



Oregon spotted frog
(*Rana pretiosa*) egg mass



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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.



Oregon spotted frog (Rana pretiosa) Photo and cover photo © Michael Durham

Conservation Is in Our Nature

The news is filled with stories about drought, and the Columbia River was just named one of America's most threatened rivers. Demographers project millions more people moving to the Northwest in the next 25 years, adding to the pressures on our natural resources. It would be easy to descend into pessimism about the future.

And yet here in the Northwest we have a history, originating in native cultures and extending to today, of understanding the value of nature. Northwesterners care about clean air and water, recreation opportunities, and scenic vistas. We know that our very nature is linked to the outdoors. And nature serves us well, providing an infrastructure that is vital to our way of life.

For example, anyone who has walked in a Northwest forest knows that moss covers everything. Moss holds large amounts of water in storage following a rain, preventing erosion, and later releases water to provide stream flows and to support life. Soaked moss in a large forest can contribute to atmospheric moisture, leading to rain. And moss cleans the air, extracting all of its nutrients from the atmosphere (it doesn't have roots, after all). We humans have yet to come anywhere close to developing technology that provides all of these critical services.

Many solutions to our existing challenges and coming growth are around us today if we can only develop new ways of conserving our resources.

In the last 25 years, thousands of Northwest landowners have entered into voluntary conservation plans or improved their local habitats through voluntary backyard habitat certification programs. As a result, hundreds of square miles of the Northwest's great places have been set aside for all time. People across the political spectrum are rallying together around our shared love for the Northwest.

Yes, we face threats. In response, let's do what comes naturally. Let's pour our energy into positive and wise actions that maintain the integrity of our lands. Let's be sure not to diminish the infrastructure that provides us with benefits we could never re-create as efficiently or affordably.

If we start by acknowledging and growing our common love for the nature of the Northwest, then we will succeed in conserving our very nature.

Glenn Lamb
Executive Director



Moss Sporangia
image: <http://imgbuddy.com/moss-illustration.asp>

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[a]

[a] Northern red-legged frog (*Rana aurora*)
[b] Pacific tree frog (*Pseudacris regilla*)

Photo by Carlo Abbruzzese



[b]

The Fate of the Frogs

We're finding allies in amphibian conservation.

2



Nancy Whitmore included a frog pond in her certified Backyard Habitat.

insignificant on a regional scale, ponds like these have developed into critical habitat for frogs and other amphibians in an increasingly urban scene.

"My family thought I was crazy for wanting to set up the pool," Nancy Whitmore says, "but I had to at least try."

Whitmore's yard boasts tall grasses and native shrubs and

is certified by the Backyard Habitat Certification Program, a partnership between Columbia Land Trust and the Audubon Society of Portland. Just a few months after the pond's installation, Pacific tree frogs (*Pseudacris regilla*), also known as chorus frogs, began moving in and laying eggs. "People visit and ask where I bought the frogs," Whitmore says with a crooked eyebrow. "We all seem to forget that these species can thrive in a metropolitan space." Indeed, as more local wetlands succumb to development, urban habitats are playing a larger role in frog conservation. Frogs serve an invaluable role as bio indicators. As cutaneous breathers (exchanging gas across their skin), they are often one of the first species to signal climate, air, and water quality changes with their weakening.

The Oregon spotted frog (*Rana pretiosa*), a sensitive species adapted to warm and large marshes with aquatic plants, is federally listed as threatened by the U.S. Fish and Wildlife Service. It has been extirpated in nearly 78 percent of its former habitat due to habitat loss, pollution, predation by exotic bullfrogs, and invasive

non-native plants, such as the aggressive reed canarygrass (*Phalaris arundinacea*). Columbia Land Trust has worked for several years to restore wetlands, including eradicating reed canarygrass at Indian Jack Slough, a wetland within the Lower Elochoman watershed. In 2012, 11 acres were removed, provisionally freeing the marsh of the tenacious species. Contouring made way for mounds and depressions, allowing the native sea bank to flourish and protected habitat spaces to emerge. A year later, in 2013, citizen scientists and Land Trust stewards surveyed over 4,000 northern red-legged frog (*Rana aurora*) egg masses. Stewardship Lead Jeff Malone said the team has installed thousands of native plants in the associated uplands and will place woody debris along the windward water borders to provide breeding and basking habitat for amphibians and other wildlife this fall. While the Land Trust focuses on protecting and restoring wetlands, others are helping bolster area frog populations. The Sustainability in Prisons Project, which is facilitated by Evergreen State College and the Washington Department of Corrections, is one such group. Since 2009, inmates at Cedar Creek Corrections Center, in Littlerock, Washington, have reared and released 625 Oregon spotted frogs. The minimum-security facility partners with the U.S. Fish and Wildlife Service, local parks, and zoos. Inmates work six hours per day alongside biologists and graduate students, feeding the frogs, participating in research, and releasing plump and prepped frogs throughout Pierce County. Frogs in the region face yet another challenge in the form of water pollution. The City of Gresham Watershed Restoration Coordinator and Natural Resource Ecologist for the City of Portland, Laura Guderyahn, has worked in wetland restoration since 2006 and has surveyed over 250 public and private ponds throughout Gresham, Portland, and Vancouver. Since 2008, her team has monitored high rates of malformation in various frog species at seven sites across Hillsboro, Beaverton, Gresham, and Clark County. Fertilizer runoff into aquatic habitats produces excess phosphorus. Algae blooms quickly, and snails consume it, producing waste where dense and infectious parasite populations proliferate. The parasites affect the development of neighboring egg masses and tadpoles that metamorphose into young adults sometimes with extra, bent, or no legs. Guderyahn sends samples to the Johnson Lab at

the University of Colorado Boulder, where researchers are studying the consequences of the pathology and population persistence. Still, Guderyahn says ponds like Whitmore's are a reason to stay positive. "We might not have many of the specialist species, such as the Oregon spotted frog," she said, "but creating habitat in urban areas allows us to have some amazing species living and thriving ten feet out our back doors." As traffic dies and dusk arrives, Whitmore's frogs swell to a crescendo, creating a calming euphony in unison, almost as if they're expressing thanks for their new surroundings. The family dozes off as the wind carries the chorus into their home through half-open windows. They're eager to witness changes in the pool in the coming weeks.

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[c]



[d]

[c] An inmate at Cedar Creek Corrections Center looks after an Oregon spotted frog. [d] X-ray imaging shows an increasingly common frog malformation: an extra set of legs.

Courtesy of Brandon Ballengeer, www.beautifulnow.is/bnow/the-beauty-of-imperfect-specimens-now

3



Photo courtesy of the Bureau of Land Management

The Past as Prologue

4 In its 25th year, the Land Trust reflects on its progress and looks to the future.



Northern spotted owl (*Strix occidentalis*)

A local landowner by the name of Dan Dupuis invited Glenn Lamb, then a member of the Clark County Parks Department, to join him on a tour

The year 1990 was a toxic one in the Pacific Northwest. The region was embroiled in controversy over the northern spotted owl's protected status under the Endangered Species Act. Reports of declining timber jobs fueled animosity between environmentalists and area loggers. Columbia Land Trust emerged at a time when Northwesterners seemed hopelessly divided.

A local landowner by the name of Dan Dupuis invited Glenn Lamb, then a member of the Clark County Parks Department, to join him on a tour

of his tree farm. Along the way, Dupuis detailed how each stand of his trees represented a harvest that would help him achieve his greatest goals in life: a college fund for his kids, retirement, and a long-awaited trip to Europe. He took Lamb to a magnificent, ancient Douglas-fir tree—

While the Columbia River region faces no shortage of environmental challenges, there are many reasons for optimism.

a survivor of the Yacolt Burn of 1902. Dupuis told Lamb he hoped his daughter might someday get married beneath the tree's boughs. Unfortunately, the immense tree represented an ideal nesting site for a northern spotted owl. If that were to happen, Dupuis knew he would be prohibited from harvesting any of his trees. He explained to Lamb his struggle to reconcile his love for the land and his appreciation for the remarkable fir with the knowledge that

preemptively cutting down the tree could help preserve his livelihood.

Hearing about the unintended consequences of well-intentioned environmental regulations affected Lamb. The conversation helped impress on him the value of listening and the potential of finding solutions through private, voluntary conservation.

In 1990, with a focus on establishing positive relationships, Lamb and eleven other volunteers founded Columbia Land Trust. Together they set out to help willing landowners protect lands, rivers, and wildlife for future generations, one conversation at a time.

By 1997, the region was in the midst of a development boom. Throughout Clark County, sprawling subdivisions were replacing forests and filling lakesides at an alarming rate. The Land Trust's leaders realized they'd need additional resources in order to meet imminent threats facing their beloved Northwest places. Fortunately, Cherie Kearney reached out to the Land Trust and offered her fundraising and organizational development experience. She joined the staff that year and helped inspire a culture of generosity through which the volunteer-led operation grew into a professionally staffed nonprofit, and eventually a community institution.

Today, Kearney directs the Land Trust's innovative forestry initiative. When observing similarities between the explosive growth of the late '90s and the Portland metro area's current rise in development, she admits that it's hard to predict how local communities will respond to the loss of habitat and nature. She remembers the late '90s as the halcyon days of the parks department serving the Clark County region. At a time when the threat to natural areas was obvious, generous and visionary leaders like Bill Dygert, Florence Wager, and Del Schleichert responded by innovating strategic conservation efforts and raising funds to buy parkland, build trails, and conserve nature. Their work was bolstered by citizens passionate about the camas fields, salmon streams, and farms that characterized their community. Kearney is hopeful that in today's environment, Northwesterners will continue to have enough of an abiding connection with nature and to their own communities to be champions of conservation.

While the Columbia River region faces no shortage of environmental challenges, there are many reasons for optimism. Bald eagles, ospreys, and sea otters have



[a] Stewardship Lead Lindsay Cornelius with volunteer Dave Williams at a planting event.
[b] Forestry Initiative Director Cherie Kearney.

rebounded in the past 25 years. Regional leaders took bold actions to help balance habitat concerns with economic realities such as thorough forestry regulations to protect old growth habitat. Though strong opinions continue to define views of how well this balance is working and where improvements should be made, it is hard to find anyone in the Northwest who does not cherish the place for its magnificent nature. Columbia Land Trust has continued to listen and find balanced approaches to conservation, succeeding in protecting more than 27,000 acres of land across 13 counties in 2 states while working with people from all walks of life.

As far as the next 25 years are concerned, Columbia Land Trust aims to conserve as much meaningful land as possible. "I'm confident that people will look back and be so grateful we did it," says Kearney. "Time is of the essence, and we need to be diligent because no one else is conserving land like we are, where we are."

Back to the Land

Tribal leader Wilbur Slockish Jr. shares his hopes for the lands, waters, and people of the Columbia.



Photo by Doug Gorsline
Oak trees above the Klickitat Canyon

It's hard to imagine someone having a deeper relationship with a place than Wilbur Slockish Jr. has with the Columbia River region. Slockish is the hereditary chief of the Klickitat tribe, part of the Yakama Nation confederacy. He's also a staunch advocate for tribal rights and for the protection of his home's lands and waters.

GL : When you look around today, do you see reasons to be optimistic?

WS : Yes, I have to for my grandkids. But I worry about them too.

GL : If you were to look back 25 years from now and see progress, what would have to happen?

WS : Let people live like they used to. We need to move away from investor-owned companies making a profit solely for their board or their shareholders. Shareholders need to understand that the comfort that they are gaining comes at the expense of people, animals, and water.

GL : You mentioned education as the most important need.

WS : We need two educations. One education on how to change laws and policies and regain this balanced way of life. We also need our own tribal education to re-educate our people about our language, our culture, our ceremonies, our plants and our animals, and what they mean to us.

GL : We feel like Columbia Land Trust's haul road removal project along the Klickitat River is a process

In his 70 years, Slockish has experienced widespread changes in the region's varied landscapes, many of them to the detriment of the land and his people.

In 1987, Slockish was one of five Klickitat tribal members convicted and sentenced to federal prison on charges of selling salmon and steelhead out of season. The case drew national attention to the Pacific Northwest, where concerns over declining Columbia River salmon runs prompted false assumptions and fueled mistrust between state game agencies, the federal government, and Indian fishermen.

Despite all of this, Slockish remains hopeful that life along the Columbia can improve in the coming years. As he explained in a recent conversation with Columbia Land Trust Executive Director Glenn Lamb, he doesn't have much of a choice.



Wilbur Slockish Jr.

by which we're allowing the river to return to its natural form. I'm curious to hear your thoughts on it.

WS : That's good. The river is a rejuvenator. When a river floods, it brings new, nutrient-rich soil down from the mountains, but nobody looks at it that way. They look at water as something to control.

GL : How do you encourage people to care for nature?

WS : I remind them of the importance of water. We're made of water. We all have that connection. We need to realize we don't own land, because we're part of the land. We're all made from that land and that dirt. So how can we own it? It owns us. When we die, we go back to it.

People ask me why I do what I do. I say, because that is the role [my creator] gave me and my people. That is our original instruction: to take care of the gifts of this land. And that's everything—the water, the air, the animal life, the plant life, the ones that have antlers, the ones that fly, the ones that swim. We're to take care of them, because they take care of us.

Change on the Rocks

Retreating glaciers are informing the Land Trust's conservation plans.

Few landmarks define our corner of the world like its three iconic, glaciated peaks. Mount Hood, Mount Adams, and Mount St. Helens bracket our region like sentinels—ever-present reminders that we live in a vast and extraordinary place.

As indelible as they seem, each of these mountains is a highly dynamic environment, continually shaped by the elements. Since many of the rivers in Columbia Land Trust's service area originate from one of these peaks, such changes can have major implications for our conservation work.

Andrew Fountain, glaciologist and professor of geology at Portland State University, explores the ways glaciers respond to a changing climate. Fountain recently compared photographs of Hood, Adams, and St. Helens from the turn of the 20th century with field observations and Lidar, a remote sensing method used to examine Earth's surfaces, to assess how the mountains' glaciers have changed in the past 100 years. The results confirm what many casual observers might have guessed: Just about every glacier in the region is retreating in response to a warming climate. On average, the region has lost nearly half of its glacier area since 1900.

From 1907 to 2004, Mount Hood's seven named glaciers have retreated, decreasing in size by an average of 34 percent. Mount Adams, which receives comparably less precipitation, is losing its glaciers at an even faster rate: 49 percent between 1904 and 2006. Crater Glacier, which sits in the bowl of Mount St. Helens, is actually advancing, but only because of the mountain's unique shape and orientation.

While observations from Mount Hood and Mount Adams may raise concerns about the region's future water supply, Fountain says the threat is low because groundwater and snowmelt minimize the effects of smaller glaciers. There are some areas closer to the mountains, however, where the impacts may be more significant. North of Mount Hood, the orchards of the Hood River region could face challenges given that the area relies on glacier melt for 30 percent of its water in the summertime.



Adams Glacier on the northwest side of Mount Adams, taken in 1936(a) and 2006(b).

Columbia Land Trust's conservation team plans its efforts using the best available science. In addition to current data on areas with threatened wildlife, prime habitat, restoration potential, and on areas facing development pressures, the team must try to anticipate how a changing climate will influence its priorities going forward.

Fountain notes that with a gradually warming climate, there are winners and losers when it comes to habitat. "In our glacier-fed rivers, we have a few species of kryal [i.e., cold-loving] midges. As those glaciers disappear and that water warms up, those guys are gone, but those species will be replaced by others that prefer warmer water. Is that good or bad? It depends on who's asking."

For the Land Trust, conserving land forever means striving to be as resilient as the mountains that shape our skyline.

Conserved and Restored Lands

Flume Creek

In May, Columbia Land Trust supported Clark County in conserving 150 acres along Flume Creek near Ridgefield, Washington. The Flume Creek area is the last remaining intact, upland, mature forest along the entire 35-mile stretch of the Columbia's north shore

Room to Grow

When it comes to mixed-conifer forests, more isn't always better. It may seem counterintuitive, but in some cases the best way to restore a forest is to cut down a select number of trees. Such was the case on an 8-acre stand within the Little White Salmon conservation



development of the remaining trees and facilitate mature structures. The forest looks a bit rough right now, but in a few years time it will look beautiful, and more important, it will be on track to develop into a rarity on the landscape: old growth!

Hood River Rebound

Columbia Land Trust Stewardship Assistant Kate Conley shared heartening news from the Hood River in the January 2015 issue of *The Osprey*, a journal published by the

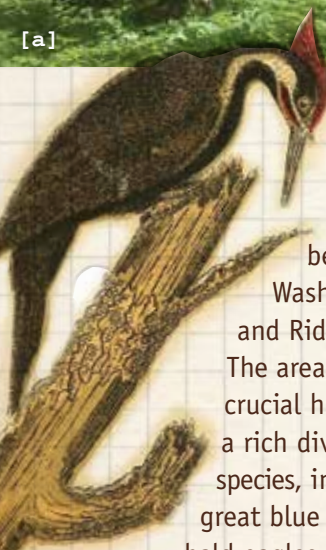
Steelhead Committee of the International Federation of Fly Fishers. Conley reported, "Along the Powerdale Corridor, a 400-acre riparian preserve has been established on the edge of a growing city, to benefit both fish and anglers. Lamprey (*Entosphenus tridentatus*) are recolonizing territory they couldn't reach for 90 years. Spring Chinook (*Oncorhynchus tshawytscha*) are holding steady." In addition, Conley noted that in the Hood River steelhead (*Oncorhynchus mykiss*) smolt abundance has trended upward, especially from 2011 to 2013.



[c] The results of our thinning efforts in the Little White Salmon conservation area. [d] The Land Trust's Powerdale Corridor property along Hood River. [e] Steelhead smolt.



[a] Woodland habitat near Flume Creek in Clark County [b] Pileated woodpecker (*Hylatomus pileatus*)



between Washougal and Ridgefield. The area provides crucial habitat to a rich diversity of species, including great blue herons, bald eagles, pileated woodpeckers, and neotropical migrant birds. Learn more about this project at columbianlandtrust.org.

area in Skamania County, Washington, where our stewardship team recently completed a timber harvest. This particular stand features a diverse assortment of plant life, including alder, big leaf maple, and cedar trees as well as a host of native shrubs like vine maple, oceanspray, and a variety of ferns.

Our thinning efforts will help accelerate the

Stop and Look

Join us outside this year and embrace your inner naturalist!

TOURS

Identify native plants via canoe, gaze up at the stars, or learn the science of sustainable forestry. View the full tour list at columbianlandtrust.org and sign up today.

All transportation, snacks, lunch, and equipment are included. Contact Sarah Richards at (360) 213-1212 or at srichards@columbianlandtrust.org with tour questions.

Forestry College

Saturday, June 27, \$75

Hike the Mount St. Helens forest at Pine Creek to identify tree species, growth stages, and better understand sustainable forest management and conservation with Stewardship Director Ian Sinks. This two-mile hike is off-trail with some steep slopes.

Paddle to Refuge

Saturday, July 25, \$75

Take a kayak tour of Clark County's Lake River, led by Conservation Manager Dan Roix. Learn about the conservation vision for Flume Creek, and enjoy lunch dockside before stopping at the Ridgefield National Wildlife Refuge. We'll be in kayaks for approximately two hours.

Live Long and Prosper: A Cosmological Night Tour

Saturday, August 8, \$75

Hop on a boat at Beacon Rock for a walking tour with Stewardship Lead Jeff Malone at Pierce Island. Spend the evening locating constellations with astronomer Jim White as he bestows his night sky knowledge and shares stellar telescope views. The walking portion of the hike is short and on flat terrain.



[a] Staff and tour-goers observe wildflowers at the Margerum Ranch property near Klickitat, Washington. [b] Volunteer Phil Krug assists in tree planting efforts near Hood River, Oregon. [c] Staff and guests explore Margerum Ranch.

VOLUNTEER DAYS

Sign up for our volunteer events with Sam Schongalla at volunteer@columbianlandtrust.org; (360) 213-1214.

3rd Annual Big River Cleanup
Saturday, August 29
North Bonneville, Washington

It's time for our annual river cleanup event! Jump in a boat, join in a scavenger hunt, and remove odd debris from the Pierce Island shoreline. This gem of a Columbia Land Trust property sits in the middle of the Columbia River, touched by the shadow of Beacon Rock.

Acorns to Oaks on the Klickitat River

Sunday, September 13
Klickitat, Washington

Join us as we do what the squirrels do! We'll be collecting acorns from nearby oaks and planting them in the footprint of the former haul road along the Klickitat River. Come prepared for an athletic endeavor, featuring a 6 to 10 mile hike along the scenic shoreline. We'll be collecting and planting as we go while Stewardship Lead Lindsay Cornelius shares information about this ambitious restoration project.

FREE EVENT: 2015 Picnic in the Park
Saturday, July 11, 11:30 am - 2:00 pm
Cathedral Park, Portland, Oregon

Save the date and join us for our annual summer picnic. Food and drinks are on us—our way to say thank you to the members and volunteers who support our work. RSVP: (360) 567-1577; jserra@columbianlandtrust.org



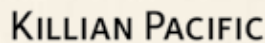
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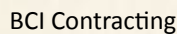
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