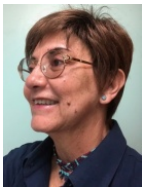
The mission of the Olympic Forest Coalition is promoting the protection, conservation and restoration of natural forest ecosystems and their processes on the Olympic Peninsula, including fish and wildlife habitat, and surrounding ecosystems.

Inside This Issue

We thank all our members and donors for their financial support. If you have not yet contributed, we hope you will become inspired to do so.

We are including a self-addressed envelope for your convenience or, if you prefer, you can donate to OFCO online on our website: olympicforest.org.

Olympic Forest Coalition



Connie Gallant

Spring/Summer 2018

President's Column

This newsletter highlights the good, the bad, and the failed elements of public policy in our updates sections. There is good news on several OFCO efforts, and we owe it to your active support and generous donations:

- The U.S. Court of Appeals for the Ninth Circuit has ruled twice in OFCO's favor on Olympic Forest Coalition v. Coast Seafoods. See **Olympic Peninsula Marine Waters Update** on page 2.
- The Commissioner of Public Lands appoints OFCO staff to "Solutions Table"; see **State Lands Update** on page 3.
- The Washington legislature banned Atlantic Salmon net pens and existing net pens have been closed for non-compliance. The state just denied Cooke Aquaculture's permit to move millions of dollars of diseased hatchlings into pens in Puget Sound. See **Olympic Peninsula Marine Waters Update** on page 2.
- The federal Farm Bill rolling back protections for forests failed in Congress. See **Federal Forest Lands Update** on page 5.

We also take a deeper look at forests and climate change. Articles by experts look at its impacts on the Peninsula's public lands and implications for policy and governance of these lands. The challenges are daunting, and time is of the essence! See:

- **Managing Washington's Public Trust Lands for Carbon**, by Catharine Copass, PhD, on page 2.
- **Carbon Mitigation in Forestry – Strategies to Achieve Balance?** by Toby Thaler and Patricia Jones, on page 4.
- **OESF 2016 Land Plan – Reduced Protections, Unsupported by Science**, by Catharine Copass, PhD, on page 6.

As always, we greatly appreciate your active participation—responding to action alerts and campaigns. Collectively, we really have made a difference! Please continue to support OFCO's work with whatever financial help you can afford. And remember to check in regularly on the web blog for updates and in-depth information. Thank you all!

Olympic Peninsula Marine Waters Update

See olympicforest.org for more in-depth information.

U.S. Court of Appeals Affirms OFCO's Clean Water Act Suit

The U.S. Court of Appeals for the Ninth Circuit issued its decision in *Olympic Forest Coalition v. Coast Seafoods Company* on March 9, affirming OFCO's case against the seafood company and advancing protections for Hood Canal and Puget Sound.

OFCO alleged that Coast Seafoods is violating the federal Clean Water Act by discharging pollutants from an oyster hatchery on Quilcene Bay without a National Pollutant Discharge Elimination System (NPDES) permit. Coast Seafoods had claimed its oyster hatchery is the world's largest shellfish hatchery, capable of producing over 45 billion eyed oyster larvae per year. Coast moved to dismiss and lost at the District Court and now at the Court of Appeals. In May, the Court denied Coast's petition for an *en banc* review by eleven judges.

"The case is very important for Quilcene Bay and perhaps all of Puget Sound," said Paul Kampmeier, the attorney representing OFCO, "because it clarifies an important legal question: whether aquatic animal production facilities using ditches, channels and pipes are point sources that require NPDES permits. The Ninth Circuit ruled that they are. The case is not over, but the decision should provide greater protection for Hood Canal and Puget Sound."

Coast Seafoods must appeal this decision, go back to District Court, or settle the case.

Washington State Passes Atlantic Salmon Net Pen Ban and Denies Cooke Aquaculture Permit

Washington's non-native fin fish net pen ban law (HB 2957 – 2017-18) is in effect and no new net pen operations will be permitted in Washington's waters. The law will phase out existing net pen operations within the next decade.

OFCO joined other Peninsula environmental groups in the umbrella coalition Our Sound, Our Salmon to push for passage of the law. Heading the effort for passage in the House were Representatives Mike Chapman and Kris Lytton; Senate leaders were Kevin Ranker and Kevin Van De Wege.

OFCO Vice President Lorna Smith coordinated OFCO's work with Our Sound, Our Salmon, for which The Wild Fish Conservancy Northwest provided key science and policy direction.

The Wild Fish Conservancy's advocacy revealed that the Norwegian-derived malady PRV (*Piscine orthoreovirus*) was present in wild salmon in Washington waters and still a cause of concern. The new law requires the State to establish a program and guidelines for disease inspection and control for the remainder of the life of the existing leases. Washington's Department of Fish and Wildlife (WDFW) rejected such claims, until the testing now required showed significant PRV in hatchlings in mid-May. WDFW has denied Cooke Aquaculture's permit to move PRV-diseased hatchlings into their net pens. Commissioner of Public Lands Hilary Franz has closed the Cypress Island Cooke Aquaculture operation from which 300,000 Atlantic salmon escaped into Puget Sound.

Huge thanks are also due to renowned scientist and activist Alexandra Morton, who for years has been researching salmon net pen diseases and working to ban such operations in Canada's waters. Her work substantiates the risk that PRV poses to wild fish.

NEPA and SEPA Comments on Navy Training in State Parks, Zinke's Offshore Oil Development, and Penn Cove/Coast Seafoods expansion of mussels in Quilcene Bay: See olympicforest.org.

Managing Washington's Public Trust Lands for Carbon

by Catharine Copass, PhD

Several decades ago, when OFCO came into being, we understood that absorbing atmospheric carbon was a hugely important function of the forest lands we sought to protect. Over the years that function has become ever more urgent; clearly we need new and more effective ways to quantify and generate economic benefits from Washington's public trust forests.

OFCO expects to play an active role in making this happen. This is not to say we're consigning wildlife protection to the back burner; but accounting for the financial benefits of carbon sequestration in public forests would reduce harvest pressures and greatly benefit endangered and threatened species. Put another way, the carbon equation encompasses all the forest issues that concern us.

But it's way more easily said than done. To create an economic equation, we need to know the total carbon storage of a given forest tract, as well as how that carbon would be valued. The latter variable is likely to be revised upward over time, as the negative economic impacts of the human carbon footprint become more acutely apparent.

As to the former, tracking forest carbon is more complex than a traditional inventory of a forest stand for board feet of timber, because less than half of the carbon in a forest is found above ground, in standing trees The rest is found in the soil, split between reactive carbon in the upper layers, and carbon associated with mineral soils in deeper layers.

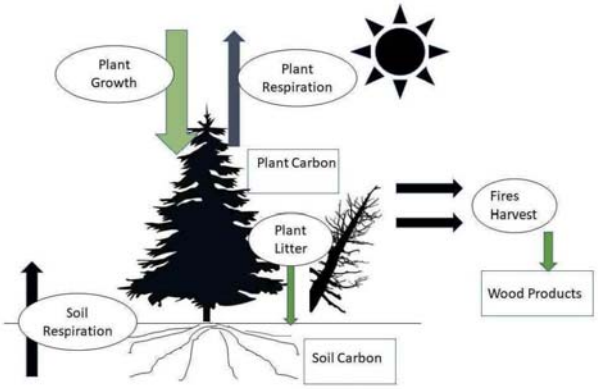
We can compare carbon cycling with a financial portfolio with a variety of accounts, each providing a different rate of return. Money moves out of some accounts frequently to cover recurring expenses, while other accounts are left undisturbed. The money will grow depending on both the interest rate and the size of the account, minus withdrawals. Over time you might transfer money from a high turnover account into a stable account you don't often touch. The amount of money you've "sequestered" by the end of the year or decade is the sum of the net growth in all of your accounts.

Carbon moves in and out of these storage accounts through several types of transfers. Daily, plant photosynthesis pulls carbon into leaves, storing carbon via new growth in all parts of the plant. This daily intake of carbon is offset slightly by the daily release of respiring carbon, a byproduct of plant growth.

Vegetation dies and falls to the ground as plant litter, transferring carbon from the vegetation account into the soil account. Below ground, the dynamic world of growing and decaying plant roots is also a primary source of carbon into the soil. Like growing leaves, growing roots add carbon to the soil. More importantly, fungi, bacteria and other soil animals break down litter and organic matter and release carbon from soils. In managed forests, carbon exits the ecosystem via transport of logs off site. Carbon is also "stored" in the wood products made from those trees.

These carbon dynamics change with forest age, stand density and management. Recently cut and young stands are net sources of carbon to the atmosphere because carbon stored in the soil is rapidly mobilized by soil organisms after the trees are removed. Over the next few decades, carbon gains in forest growth exceed this loss. The total capacity for carbon sequestration is the sum of all the stands in their various age classes, successional states or management regimes.

Forest management methods can increase forest capacity to remove CO2 from the atmosphere. Thinning results in less disturbance to the soil compared to clearcuts. A longer rotation time allows stands to maximize the decades in which net carbon intake is very high. Preventing carbon loss from soils and enhancing the uptake capacity in both forest and soils are keys.



Tying the economic benefits to the carbon dynamics in state lands will require good estimates of carbon cycling. This will involve linking maps of current forest stand conditions to models representing the best understanding of the carbon dynamics, as well as bringing together economists and ecologists to arrive at valuations that reflect the realities of these dynamics.

OFCO will be involved in this effort. High-level scientific and economics expertise will be required, but citizen scientists will have a vital role. Stay in touch.

State Lands Update

HB 2285 – Marbled Murrelet Reporting Bill Now Law

Rep. Mike Chapman (D-24) sponsored HB 2285 [https://tinyurl.com/ybs8fz2h] to support protections for Marbled Murrelets and implementation of the Endangered Species Act, through reporting on economic impacts to rural communities. The bill asks the Department of Natural Resources to report to the Legislature on possible economic impacts and solutions

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for revenue losses related to conservation. The bill supports Commissioner of Public Lands Hilary Franz's "Solutions Table" process. OFCO and the Marbled Murrelet Coalition asked Franz to consider developing other sources of revenue impacted by conservation through a multi-stakeholder process, especially protecting essential services. Coalition members Washington Environment Council, Washington Forest Law Center, Audubon chapters, Conservation Northwest, Defenders of Wildlife, and grassroots conservation groups like OFCO, worked hard to turn out calls and comments to legislators to help shape the bill. Governor Inslee signed the bill in March. Great appreciation to Rep. Chapman, OFCO members for their calls and comments, and WEC, CNW and WFLC for their leadership on saving the Marbled Murrelet and Peninsula rural communities.

Commissioner of Public Lands Appoints OFCO to "Solutions Table"

Commissioner of Public Lands Hilary Franz is convening a multi-stakeholder process to meet the state requirements under the Endangered Species Act to conserve Marbled Murrelet habitat while harvesting on state lands, including state trust lands. The "Solutions Table" has nine representatives from conservation groups, trust beneficiaries, industry and local communities. Franz has appointed OFCO Executive Director Dr. Patricia Jones to represent rural communities' conservation interests.

"We have limited room in the Habitat Conservation Plan Area to find solutions between two legal requirements: that we protect the murrelet under the ESA and that we meet a fiduciary obligation to deliver revenues to trust beneficiaries," Franz said, in explanation of the process. "Regardless of the legal drivers, the challenge of preserving a species and the prosperity of our neighbors is something we must face together, as one community of Washington state. I believe this moment is an opportunity for us to figure out how to do our part to save this species and how to ensure that several communities are not asked to bear all of that burden for the rest of us. I believe if we commit to sharing the challenge—improving survival of the bird and supporting affected communities in a meaningful way—we can do great things. I know we can do this work with great intention and care, and our success will show that environments and economies, wildlife and people, belong side by side, thriving together." The first meeting is scheduled for May 29–30, 2018.

Carbon Mitigation in Forestry – Strategies to Achieve Balance?

by Toby Thaler and Patricia Jones

The need to meet (and exceed) the carbon (C) emissions reduction standards set by the 2015 Paris Agreement—to keep warming to 2 degrees centigrade—grows ever more urgent. The U.S. pledged to reduce emissions by 26 to 28 percent (of 2005 levels) by 2025; given the withdrawal from the Paris Agreement by the White House, state leaders are stepping up to the task.

States are organizing to strengthen and expand their commitments to emission reductions. Washington Governor Jay Inslee is one of three chairs of the new United States Climate Alliance. [www.usclimatealliance.org]. With California in the mix, the Alliance covers 40 percent of the U.S. population, with a substantial share of the nation's wealth [annual report [https://tinyurl.com/y94h9fb2]. The Alliance states are moving ahead with reduction targets.

Washington state actually set greenhouse gas emission reductions targets in 2008 (RCW 70.235.020 Greenhouse gas emissions reductions—Reporting requirements) [http://apps.leg.wa.gov/rcw/default.aspx?cite=70.235.020].

The law requires Washington:

- by 2020, to reduce overall emissions of greenhouse gases in the state to 1990 levels;
- by 2035, to reduce overall emissions of greenhouse gases in the state to 25 percent below 1990 levels; and
- by 2050, the state will do its part to reach global climate stabilization levels by reducing overall emissions to 50 percent below 1990 levels, or 70 percent below the state's expected emissions that year.

The state's Department of Ecology recommends even greater limits on emissions (40 percent rather than 25 percent) by 2035 and 80 percent rather than 70 percent by 2050 to meet targets.

Washington is looking to the carbon-rich public forests to help achieve these emission reductions. Governor Inslee and Commissioner of Public Lands Hilary Franz agree that the state must tackle climate change and emissions reductions, but disagree on funding and policy.

Commissioner Franz has announced a "Smart Carbon" policy that would:

- Tackle the root cause—carbon pollution—and invest in reduction efforts;
- Strengthen the health and resilience of our lands, waters, and communities;
- Accelerate carbon sequestration; and
- Invest in and incentivize solutions with multiple benefits.

The devil, as always, is in the details.

Researchers are beginning to scope out how and to what extent forests can help reduce atmospheric carbon. A recent study by Beverly Law and colleagues looks at how much carbon the region's forests can realistically remove from the atmosphere in the future, and which forest carbon strategies can reduce regional emissions by 2025, 2050 and 2100. In their article *Land use strategies to mitigate climate change in carbon dense temperate forests*, [www.pnas.org/content/pnas/115/14/3663.full.pdf], the scientists propose a framework for integrating carbon into forestry management. Their study looked at Oregon, but is representative of temperate forests from Northern California to Alaska.

Law and fellow researchers highlight four proven and relatively easy strategies that could mitigate carbon emissions from forest activities: 1) reforestation (growing forests where they recently existed), 2) afforestation (growing forests where they did not recently exist), 3) increasing carbon density of existing forests, and 4) reducing emissions from deforestation and degradation. Assessing the impacts of these strategies requires that we have accurate estimates of forest carbon in trees and soils, net ecosystem carbon balance, and historic harvest rates. We also need to know how much the wood product process contributes to emissions through transportation and production emissions. Law concludes, "As states and regions take a larger role in implementing climate mitigation steps, robust forest sector assessments are urgently needed." Agreed.

On Washington's state lands, reforestation is already a part of management. Afforestation is unlikely to happen on the Olympic Peninsula. In the Law study, reduced harvest had the biggest impact on net carbon. The best way to do that is to increase rotation times to closer to 80–100 years, when the trees' net carbon uptake is highest. On the Peninsula, increasing carbon density is a definite possibility and should be pursued as a management priority for the Dept. of Natural Resources. We also need to have a better understanding of the carbon trade-offs from thinning forests to improve stand structure (short-term release of C from tree loss and soil disturbance vs. long-term growth and potentially improved stand C uptake). Generally, OFCO supports pro-thinning to help speed up development of structure important to wildlife; we need research to confirm how this is also C-storage friendly.

Meanwhile, what about federal forestry management throughout the nation? In 2015, the net CO2 removed from the atmosphere from the forestry sector offset about 12 percent of total U.S. greenhouse gas emissions, but total carbon sequestration by forests decreased by about 6 percent between 1990 and 2015. The decrease was primarily due to a decrease in the rate of net carbon accumulation in forests and an increase in emissions because of land converted to human use. [www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions#land-use-and-forestry]

Whether for federal or state forests, public lands must be managed to help us meet our goals to offset greenhouse gas emissions but we need to maintain a maximum acreage of healthy, resilient forests. Drought, pathogens and other stressors that increase under a warming climate can all act to reduce the ability of forests to remove C02.

Federal Forest Lands Update

See olympicforest.org for more information.

Olympic Peninsula Forest Collaborative Works with SWAT on Big Creek

OFCO is working with the Skokomish Watershed Action Team (SWAT), the Olympic National Forest and the members of the Olympic Peninsula Forest Collaborative to test and demonstrate forest management approaches that will achieve ecological objectives, while producing economic harvests.

The project is located near the Big Creek Campground close to Lake Cushman. The Douglas-fir-dominated forest regenerated naturally from a clearcut 75–80 years ago; two-thirds of the stand was commercially thinned in 1990. One-third is dense, single-story, replanted Douglas-fir with root-rot gaps throughout the unit. There are old gravel roads, skid trails and landings that were not restored.

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OFCO Board Member Jill Silver, founder of 10,000 Years Institute, led efforts to treat invasive plant species, including Herb Robert and St. John's wort in the unit in partnership with the Mason County Noxious Weed Control Board. As Jill said on the site visit to the project, "We all have to pull our weedies."

The project's ecological goals include riparian buffers, creation of "high-stump snags" that are critical to wildlife habitat, decommissioning of roads and trails, and culvert removal. The Collaborative proposes to support SWAT stewardship projects in the Skokomish watershed under the stewardship sales program. The project is in final design stages and will be finalized in summer 2018.

OFCO Joins Groups to Oppose Farm Bill – Bill Fails

OFCO joined 122 conservation groups to oppose the "Farm Bill" rollbacks of forest protections. The Wilderness Society (TWS) led the effort to oppose the forest provisions in the Forestry Title of the Agriculture and Nutrition Act of 2018 (H.R. 2), known as the "House Farm Bill," that aimed at deconstructing decades of conservation work for our federal forests.

The bill failed passage in the House (yeas 198 to 213 nays). According to TWS, here's the take away: This version failed because of its radical departure from the more bipartisan efforts of past years. The Senate will be taking up some version of the farm bill. The regressive goals of the bill likely will come back in other forms; for now, however, they have failed.

Olympic National Park Releases Mountain Goat Removal FEIS – Work Begins in August

Olympic Park Associates (OPA) led an effort to remove mountain goats from Olympic National Park for what they consider "one of the most serious ecological threats to the Park." OFCO joined OPA in commenting on the draft environmental impact statement (EIS) last fall. The Park just released the final EIS and removal is set to begin in August. Great appreciation to OPA for their work in the four-year planning process, and for four decades of effort to remove the non-native goat species.

OESF 2016 Land Plan – Reduced Protections, Unsupported by Science

by Catharine Copass, PhD

Climate change impacts in temperate western forests on the Olympic Peninsula are not well understood yet and research is underway to identify what the changes are for our state-managed trust lands. The Department of Natural Resources (DNR) has an ambitious research and monitoring program for the Olympic Experimental State Forest (OESF) [www.dnr.wa.gov/oesf]. Yet the DNR Land Plan for the OESF released in 2016 reduces protective measures and may accelerate climate change impacts for threatened and endangered species—and their forest habitat.

In the one year that OFCO has monitored timber sales under the Land Plan, habitat protections put in place under the 1997 Habitat Conservation Plan have decreased. Type 5 streams are now only protected where the channel is on an unstable slope; only a few sales have exterior riparian buffers, leaving interior buffers vulnerable to wind. Where exterior buffers are required, none are greater than 80 feet, much smaller than the original widths required for this area. In some sales, allotted acres for clearcutting include land within riparian buffers next to important fish habitat. DNR has developed road plans, including plans for improvements such as cross ditches and the removal of fish barrier culverts, but the road network continues to expand, with construction miles greatly outpacing miles decommissioned.

At Risk: Threatened and Endangered Species Under the Land Plan

- Northern Spotted Owl (NSO) habitat can be moved in what is called "sifting mosaic" habitat. But recent science shows habitat *does* matter, since the owls maintain fidelity to nest sites; they will be more stressed.

- Reducing riparian buffers will likely increase stream temperatures. Bull trout and salmonids need cold stream temperature for spawning and rearing.
- More roads will mean increased runoff; steelhead and salmon need clear water, not streams muddied with sediments from roads.

Reduced Watershed Protections Under the Land Plan Not Supported by Science

- Exterior buffers, needed to create windfirm stands along Type 1–4 streams, will be applied only in about 1 percent of riparian areas, compared to the 75–85 percent originally envisioned in the HCP.
- Clearcutting (known as variable retention harvest) is allowed in the interior buffers up to 25 feet of the edge of Type 1–4 streams. For comparison, harvests on private lands must stay 50 feet from streams.
- Road density in some watersheds of the OESF are five miles per one square mile of watershed. Density will increase, with negative impacts on watersheds.

Why care about riparian buffers in the OESF? As the climate changes, bringing reduced summer flows and higher stream temperatures, we need more management actions designed to mitigate these impacts. Stream buffers help maintain the lower water temperatures required by bull trout and salmonids. Riparian buffers provide cooling shade and are a source for large woody debris to fall into streams and create complex habitat. Bull trout are extremely sensitive to temperature and need the coldest stream temperatures for successful spawning and rearing.

Recent studies show that increased stream temperatures are tied to overall timber harvest in a watershed because removing the forest cover exposes surface groundwater, which then warms before it flows into streams (Pollock, 2009). Maintaining cool streams may require both adequate riparian buffers and higher forest covers in watersheds.

Exposed surface water in the Chum Timber Sale, Sekiu Watershed –*photo C. Copass, OFCO Wildlife Monitoring Project*

Why is increasing road density in the OESF a problem? The more roads per square mile in a watershed—and the more heavily used by log-haul trucks—the more dirt is mobilized into streams. Limits on the amount of sediment are part of the State Water Quality law, and several streams in the OESF already exceed these limits. Stream sediments hurt salmon and steelhead at every stage of their lives.

Roads located close to streams also mean less tree canopy, increasing stream temperatures.

DNR has constructed or reconstructed about five miles of road for every mile abandoned or decommissioned. Increasing road density will only exacerbate the negative impacts of increased sediments and temperatures on bull trout and salmon.

Within each individual timber sale the reduction of protections might seem minor: a few trees cut next to a stream here, a few hundred feet of road built there. The cumulative impact of shrinking habitat protection, however, is certainly significant to the NSO, bull trout and salmonids. The new OESF Land Plan must meet the conservation goals and guidelines required to protect these species, especially given the uncertainty posed by climate change.

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