Salmon are Key

Looking down from space, as the Apollo astronauts did some 50 years ago this summer, you can clearly see the contours of the North Pacific Rim; the rugged shorelines and volcanoes of the Russian Far East, the snow-covered Kamchatka Peninsula, Alaska’s multitude of mountains and the rich green coastal rainforests of British Columbia, Washington, and Oregon.

Beneath the clouds and floating in the cold water are millions of miles of phytoplankton, churning out the life-giving oxygen that protects our planet. Under the mats of plankton are the salmon, hunting small euphausid shrimp, squid, and schools of herring. In one of the largest and most miraculous migrations known, they stream like clockwork each year towards the coasts, bringing billions of tons a year of marine nutrients far up the rivers and streams that flow into the North Pacific.

If the earth is a living, breathing organism, and the oceans are its lungs, then the salmon are the blood cells that bring nutrients from the ocean to feed the food webs across millions of miles of streams and rivers from California to Japan. We are all inextricably linked to that food web stretching across the North Pacific. And like an organism, we must build a local “immune response” to defend these river systems from internal or external threats.

The mission of the Wild Salmon Center is to strengthen this immune response in each of the Pacific’s salmon strongholds. We do this by making a multidecadal commitment to conservation in each watershed, and then building a defensive perimeter, like layers of armor against future threats. These can be new parks or forest reserves, riparian buffers, fish management and conservation reforms, and most importantly, strong local conservation organizations.

Whether it’s a proposal to de-water a coastal salmon stream in the Tillamook rainforest, or an open pit gold mine in Alaska, the threats will continue to come. We must build the strength and resilience to be prepared to fight back—for as long as it takes.

In the following pages, you’ll read more about the role salmon play as the “keystone” of the North Pacific. And you’ll learn about WSC’s integral role in the region, as a catalyst for protecting the great river systems built on salmon. As always, it’s your support that enables us to keep this miraculous, pulsating region alive and well in a century of change.

Guido Rahr
President and Chief Executive
Like the central stone that holds together an arch, a keystone species holds together an ecosystem. That’s the role of wild salmon in the North Pacific. With healthy salmon runs, our oceans and coastal river systems flourish. Fishing families of all sorts thrive. This year’s report showcases how conserving wild salmon and their home habitat also supports a range of communities, from iconic populations of whales and bears, to core elements of life, including healthy food and clean drinking water.

Wild Salmon Center works alongside local partners in key watersheds around the North Pacific to protect all these things and more. Proactively safeguarding salmon rivers and supporting local leadership are the most effective strategies to keep these places intact for the next generation and beyond. We are focused on protecting salmon because we know it is one key to conserving a habitable future on this planet.
Key milestones to date, accomplished by WSC and our partners:

- 2.7 million acres of new Protected Areas in Russia.
- 40 Russian rivers managed exclusively for wild fish.
- 2 dams on major salmon rivers stopped or shelved.
- Expanded streamside buffers across 2,500 river miles in Western Oregon.
- 31 rivers managed exclusively for wild fish populations in North America.
- 13 organizations launched and direct support for 12 more.

Advancing Conservation Across the Pacific
Wild Salmon Center leads partner-based protection and restoration in more than 20 of the hemisphere’s most important wild salmon and steelhead rivers.

Key accomplishments with partners this year:

1) Supported legislation to stop the federal permitting process for Pebble Mine in Bristol Bay, Alaska (pg. 8).
2) New protections for the Skeena River estuary (pg. 10).
3) Launched Coastal Rivers Conservancy in BC (pg. 10); joined a new Namath Chinook partnership (pg. 18).
4) Secured over $14 million in state funding for culvert removal and restoration in Washington (pg. 12).
5) Began targeted, on-the-ground restoration as part of $5 million Oregon Coast Coho Partnership (pg. 14).
6) Helped establish Frank and Jeanne Moore Wild Steelhead Sanctuary on Oregon’s North Umpqua River (pg. 16).
7) Working with Russian partners to expand protections on the Kopp, Tugur and Uda rivers (pg. 20).
Every summer, sockeye salmon paint the creeks, lakes, and rivers of Bristol Bay crimson. But it’s not simply the beautiful end to a poetic life journey: these sockeye are in a race to spawn, and their archnemesis at this life stage is a one-ton, smelly beast with the deft paws of a house cat and jaws like a massive can opener: Ursus arctos. Over hundreds of thousands of years, sockeye have evolved for reproductive success with brown bears in mind. The fish headed for deeper lake spawning grounds develop bulbous humped backs to win over females in that competitive environment. But those who head for smaller creeks stay sharper and sleeker “like a bullet” to avoid bears, says Daniel Schindler, one of the preeminent ecologists working in Bristol Bay.

The bears get their fish regardless. Recent science shows that in their pursuit of sockeye, bears move from creek to creek, tracking successive runs of salmon that are geared to spawn in ever warmer water over the course of the summer. This “portfolio” of salmon runs over two and a half months is what transforms a relatively barren area of the sub-Arctic tundra the size of Wisconsin into a global hotspot for large mammals like brown bears. Bears in coastal Alaska eat up to two tons of salmon a season. And the bear density is up to 20 times higher in salmon regions than in interior regions of Alaska. Bears in the watersheds around Bristol Bay are part of the largest concentration of brown bears in the world.

The intricate relationship of bears and salmon in Bristol Bay is a prime demonstration of salmon’s place as the keystone of the North Pacific.

**Taking Pebble Off the Fast-Track**

Bristol Bay is the crown jewel of salmon strongholds left in the North Pacific. But the Pebble Mine, planned at the headwaters of the Nushagak and Kvichak, two of the region’s most important runs, is on a fast-track toward securing a key federal permit. While Wild Salmon Center and our Alaska partners battle to stop it, federal political appointees and the Army Corps of Engineers are working hard to pave the way for what would eventually be a massive and toxic open pit mine. First, Pebble failed to provide the necessary information to support a credible scientific review of the project. Then the Army Corps released a draft environmental impact statement that vastly underestimates the risks of the Pebble Mine project, including the loss of more than 80 miles of salmon streams, and risks from the leaks of toxic wastes that will have to be managed in perpetuity. The Army Corps accepted an amended plan to treat tons of billions of gallons of toxic wastewater every year and dump it into Bristol Bay salmon streams—forever.

Experts at other federal agencies have described this review, with the U.S. Fish and Wildlife Service saying it was “so inadequate that it precludes meaningful analysis.”

For years, WSC has helped galvanize opposition to the mine. In 2016, we helped rally more than 100,000 Alaskans behind a ballot measure that would have provided stronger development standards in places like Bristol Bay. The measure failed, but those Alaskans are now speaking out more loudly than ever by calling on Senator Lisa Murkowski and other high-ranking Alaska decision-makers to step up the mine and the questionable permitting process. Rivers across the state, including a 900-strong gathering in Anchorage (pictured below), represent the solid majority of Alaskans who are against the mine. After Alaska Native ethics counsel with fishermen and conservation groups nationwide (including WSC) to successfully lobby the U.S. House in June 2019 for an amendment to pause the permitting process, the pressure mounts on the U.S. Senate to force Pebble and the Army Corps to produce a credible environmental review. If done correctly, it will demonstrate, once again, that Bristol Bay is no place for Pebble Mine.

**Taking Pebble Off the Fast-Track**

Bristol Bay is the crown jewel of salmon strongholds left in the North Pacific. But the Pebble Mine, planned at the headwaters of the Nushagak and Kvichak, two of the region’s most important runs, is on a fast-track toward securing a key federal permit. While Wild Salmon Center and our Alaska partners battle to stop it, federal political appointees and the Army Corps of Engineers are working hard to pave the way for what would eventually be a massive and toxic open pit mine.

First, Pebble failed to provide the necessary information to support a credible scientific review of the project. Then the Army Corps released a draft environmental impact statement that vastly underestimates the risks of the Pebble Mine project, including the loss of more than 80 miles of salmon streams, and risks from the leaks of toxic wastes that will have to be managed in perpetuity. The Army Corps accepted an amended plan to treat tons of billions of gallons of toxic wastewater every year and dump it into Bristol Bay salmon streams—forever.

Experts at other federal agencies have described this review, with the U.S. Fish and Wildlife Service saying it was “so inadequate that it precludes meaningful analysis.”

For years, WSC has helped galvanize opposition to the mine. In 2016, we helped rally more than 100,000 Alaskans behind a ballot measure that would have provided stronger development standards in places like Bristol Bay. The measure failed, but those Alaskans are now speaking out more loudly than ever by calling on Senator Lisa Murkowski and other high-ranking Alaska decision-makers to step up the mine and the questionable permitting process. Rivers across the state, including a 900-strong gathering in Anchorage (pictured below), represent the solid majority of Alaskans who are against the mine. After Alaska Native ethics counsel with fishermen and conservation groups nationwide (including WSC) to successfully lobby the U.S. House in June 2019 for an amendment to pause the permitting process, the pressure mounts on the U.S. Senate to force Pebble and the Army Corps to produce a credible environmental review. If done correctly, it will demonstrate, once again, that Bristol Bay is no place for Pebble Mine.

**Taking Pebble Off the Fast-Track**

Bristol Bay is the crown jewel of salmon strongholds left in the North Pacific. But the Pebble Mine, planned at the headwaters of the Nushagak and Kvichak, two of the region’s most important runs, is on a fast-track toward securing a key federal permit. While Wild Salmon Center and our Alaska partners battle to stop it, federal political appointees and the Army Corps of Engineers are working hard to pave the way for what would eventually be a massive and toxic open pit mine. First, Pebble failed to provide the necessary information to support a credible scientific review of the project. Then the Army Corps released a draft environmental impact statement that vastly underestimates the risks of the Pebble Mine project, including the loss of more than 80 miles of salmon streams, and risks from the leaks of toxic wastes that will have to be managed in perpetuity. The Army Corps accepted an amended plan to treat tons of billions of gallons of toxic wastewater every year and dump it into Bristol Bay salmon streams—forever.

Experts at other federal agencies have described this review, with the U.S. Fish and Wildlife Service saying it was “so inadequate that it precludes meaningful analysis.”

For years, WSC has helped galvanize opposition to the mine. In 2016, we helped rally more than 100,000 Alaskans behind a ballot measure that would have provided stronger development standards in places like Bristol Bay. The measure failed, but those Alaskans are now speaking out more loudly than ever by calling on Senator Lisa Murkowski and other high-ranking Alaska decision-makers to step up the mine and the questionable permitting process. Rivers across the state, including a 900-strong gathering in Anchorage (pictured below), represent the solid majority of Alaskans who are against the mine. After Alaska Native ethics counsel with fishermen and conservation groups nationwide (including WSC) to successfully lobby the U.S. House in June 2019 for an amendment to pause the permitting process, the pressure mounts on the U.S. Senate to force Pebble and the Army Corps to produce a credible environmental review. If done correctly, it will demonstrate, once again, that Bristol Bay is no place for Pebble Mine.
In 2017, Malaysian oil and gas giant Petronas abandoned plans for a large $12 billion liquefied natural gas processing and shipping facility at Lelu Island and Flora Bank, which sit at the mouth of the Skeena River and hold its most important salmon and steelhead nurseries. That followed an extensive public campaign and legal challenges against the development from local First Nations and Wild Salmon Center partner, SkeenaWild.

Now, the Prince Rupert port authority has recognized the ecological importance of this area and declared much of the proposed project area off limits to development—including Flora Bank and nearby shallow water areas. While other surrounding sand banks and forested Lelu Island are still open to development, the regional port authority’s move marks a positive step toward proactive protection in an area that provides rearing habitat for more than 50 different populations of juvenile Skeena River salmon. With the port authority saying it’s open to public input to guide responsible development in the future, the stage is set for comprehensive long-term planning discussions to protect the estuary.

“We recognize that development can and should happen around Prince Rupert, but it should not be done over the top of critical salmon habitats,” says Greg Knox, SkeenaWild’s executive director. “Comprehensive planning with indigenous communities and the port authority will sort out where and how responsible development should take place.”

Wild Salmon Center and a small group of concerned fishing communities have helped establish a new organization, Coastal Rivers Conservancy, to focus on the long-term protection of wild salmon and steelhead ecosystems in BC’s Inner coast. That area includes the world-renowned Dean River and nearby rivers and marine channels including Fisher, Bentick, and Burke.

The organization will collaborate with local First Nations, NGOs, government agencies, and stakeholders to address development, habitat, and fisheries issues. And with support from The Stronghold Fund (Wild Salmon Center’s impact fund), the organization will work closely with WC Science Director Matt Sloat on its first order of business: building up-to-date knowledge of salmon and steelhead stocks in the region. From there, CRC will work to implement protections that lead to long-term safeguards of the region’s wild salmon and steelhead runs. longtime Dean River guide Scott Carlson will be the Executive Director of CRC.
Keeping Chinook Rivers Whole

Washington’s best collection of salmon and steelhead rivers flow from the Olympic Peninsula. They are home to half of the state’s strongest salmon runs and are best positioned to weather climate change.

But these rivers still need plenty of restoration and further protection, after a century-and-a-half of heavy logging and road building. We’re working on many fronts to ensure that strongholds continue to provide great salmon habitat for generations.

Our Cold Water Connection campaign is opening up 150 miles of streams previously blocked by outdated road culverts. These mini-dams on watersheds like the Hoh and Calawah prevent salmon from using cold reaches to ride out hot summer months. On the Hoh, fish have limited or no access to 42 percent of tributary streams.

Working with our allies at Coast Salmon Partnership, we helped secure over $14 million in state funding for culvert removal and restoration. This includes a unique project with the Quileute Tribe and four federal agencies to remove pounds salmon habitat and spawning beds to the lower Quillayute River, while stabilizing the riverbank around the community of La Push.

We are also helping to organize the scientific case and rallying local communities against a proposed dam on the Chehalis River. Both Quillayute and Chehalis Chinook runs serve as a key food source for struggling Southern Resident orcas, which shows how important our work is to Washington ecosystems.

Advocating for Stronger Steelhead Returns

If we are to have viable runs of wild steelhead on the Olympic Peninsula in the future, research shows that we need to allow more of these fish to escape fisheries and reach spawning grounds. WSC Science Director Matt Sloat and partners reconstructed historic runs in the region over the last 70 years and found a steep decline in adult wild steelhead on the peninsula’s key rivers, such as the Hoh, which has lost 34 percent of its abundance in the last four decades. In the future, we need to allow for a more genetically diverse group of steelhead to escape fisheries and spawn. Safety lies in both healthy fish numbers and a diversity of survival strategies—from different migration seasons to numbers of years spent at sea. By adopting science-based goals for diversity and abundance, we will increase the resiliency and overall health of these legendary runs in the face of climate change.

Salish Sea, WASHINGTON

Keystone Spotlight: Killer Whales

At the turn of the 20th century, catching a Chinook salmon over 100 pounds was still possible. But a vicious cycle of overfishing has taken these large beasts out of the water for good.

The decline of Chinook along the Pacific Northwest coast has led to monumental shortages of salmon prey for resident killer whales, also called orcas.

In the late 1990s there were about 100 orcas. Now there are 74. Just two dozen healthy mothers remain to reproduce and more and more of the group is showing peanut-shaped heads that are the telltale sign of starvation.

We need to recover the diversity and abundance of wild Chinook populations that once reliably fed whales, people, and river ecosystems. We can do this by more selectively harvesting fish close to their home rivers, and by giving Chinook more healthy spawning rivers to come home to, from the Olympic Peninsula to the upper Columbia.

As we help those and other salmon rivers return to health and reverse the tide of salmon and orca decline, communities across Washington stand to benefit.

We need to recover the diversity and abundance of wild Chinook populations that once reliably fed whales, people, and river ecosystems.
We are working to restore coho and other salmon runs on the Oregon Coast — that means bringing beavers back.

Nehalem River, OREGON

Coho Partnership Restoring Coastal Strongholds

The rivers that flow from the temperate rainforest of western Oregon into the Pacific Ocean contain some of the strongest remaining populations of wild salmon and steelhead remaining south of Canada. Over a century of resource extraction has heavily impacted coastal watersheds, however, reducing salmon habitat and leading to sharp declines in critical summer flows.

To rebuild impacted habitat, Wild Salmon Center’s Mark Tenholyol has developed a new science-based approach to choose the highest value restoration projects on the coast. WSC co-founded the Great Coho Partnership, a team of public agencies and coastal partners committed to accelerating strategic restoration. The program is part of a broader effort we are undertaking to protect and restore coastal watersheds and recover Oregon Coast coho salmon — an indicator species for ecosystem health across the region.

After completing watershed restoration plans, partners in the Nehalem, Elk, and Nez Perce rivers are now restoring large wood to streams, reconnecting tidal wetlands, removing failed culverts, and replanting native vegetation. We are also facilitating a second round of plans in the Coos Bay, Siletz, and upper Rogue watersheds, and project implementation in these areas will begin in 2020. To date, Wild Salmon Center has generated more than $1 million for local partners’ restoration.

One of the most exciting projects involves restoring beaver populations in the upper Nehalem River. Wild Salmon Center, NOAA Restoration Center, and U.S. Fish and Wildlife are supporting the U.S. Fish and Wildlife Service’s program to install physical footholds called “beaver dam analogues” in critical tributaries. These structures provide a place to start and include wood pilings driven into stream beds, and woven with willow and other favorite beaver forage. The goal is for beavers to move into these areas and build dams around the pilings. These dams will pond water, which juvenile coho rely on to escape high storm flows in winter and access cool water in summer.

Similar efforts have shown high returns for salmon and steelhead in other regions. In a tributary of Oregon’s John Day River, a series of assisted beaver ponds delivered a 173 percent increase in juvenile steelhead. With more than two dozen of these structures installed in the upper Nehalem, we expect that beaver and salmon populations will grow together, stabilizing the Nehalem coho runs for decades to come.

We increasingly understand that the health of coastal rainforest rivers is tied to both coho and another keystone species: the beaver. As one of nature’s engineers, beavers build ponds that maintain a flow of cold, clean, slow moving water in a river system—ponds that provide homes for juvenile salmon and small invertebrate critters at the base of the food chain.

But the beaver was trapped to near extinction in the Pacific Northwest fur trade in the 1800s. Since then, logging, agriculture, and other land uses on the Oregon coast have led to straightened, incised, and simplified stream channels, which have kept both beaver and threatened coho from regaining a foothold in their former range.

By helping beavers return to the landscape, we are helping restore river function and bring coho back to coastal streams.
Oregon Needs to Overhaul Forest Protections

To protect Oregon’s coastal rivers, we need to focus on improving forest practices, which are threatening prized strongholds from Tillamook Bay to the Rogue River. Despite recent improvements to streamside buffers on private lands, Oregon still requires just half the width of no-cut forested buffers around streams than Washington does. More recently, a state report found that Oregon is not adequately tracking how timber companies comply with even this modest rule.

The science is clear: heavy logging around streams raises water temperatures while reducing the number of trees that fall into streams and provide good salmon habitat. Thinner buffers filter less sediment during storms. And Oregon’s current rules don’t stop steep slopes from being cut, which devastates salmon eggs. The federal government has called out Oregon’s forest practices as hazardous to salmon. Wild Salmon Center is working with the Oregon Legislature, the Oregon governor’s office, and the state Board of Forestry to improve stream buffers in Southern Oregon, designate important coho streams for protection across Oregon, and secure long-term protection of key salmon habitat on state forests. The future of Oregon’s coastal salmon runs depends on modernizing logging rules.

Moore Sanctuary Established

It’s official! In late February, the Frank and Jeanne Moore Wild Steelhead Sanctuary was created on the North Umpqua as part of a large, bipartisan public lands bill. The sanctuary, which WSC initiated and campaigned for, strengthens wild steelhead conservation on approximately 100,000 acres of public lands around Steamboat Creek on Oregon’s North Umpqua River, the most important summer steelhead spawning area in the Pacific Northwest. It honors two inspirational conservationists and American heroes. After Frank served in World War II, Frank and Jeanne ran the legendary Steamboat Inn on the banks of the North Umpqua. Frank served on the State of Oregon Fish and Wildlife Commission and in 2010 was inducted into the Freshwater Fishing Hall of Fame. His wife, Jeanne, is a self-taught botanical expert who has spent her life identifying the myriad native plant species in the Steamboat Creek watershed. “This is a gift for future generations,” Congressman Peter DeFazio said at a celebration in March. “I can’t think of two people who are more deserving.”

500,000 people get their drinking water from the Tillamook and Clatsop State Forests, which stretch across 500,000 acres of temperate rainforest between Portland and the Pacific.

500,000 people get their drinking water from the Tillamook and Clatsop State Forests, which stretch across 500,000 acres of temperate rainforest between Portland and the Pacific.
Indigenous Communities

For centuries, Northern California’s Karuk and Yurok tribes have fed themselves and built their cultures around the abundance of salmon—particularly Chinook—in the Klamath River Basin. The remarkable diversity of Chinook runs ran near-continuously from March to November. Prior to European contact, consumption of salmon was estimated at up to 450 pounds per person per year, or more than one pound per person per day.

But as a result of habitat loss, tribal salmon fisheries and their communities have struggled in recent years, with ailing spring and fall Chinook returns impacting local economies and increasing food insecurity. In 2017, the Karuk limited their catch to 200 salmon, well below the amount needed to feed 4,800 members or hold traditional ceremonies. The Yurok closed their fall subsistence gillnet fishery in 2017. And the tribe ended up buying Alaska salmon for its annual August salmon festival, the first time in memory.

Dam removal on the Klamath starting in the next two years offers an opportunity for wild spring and fall Chinook to recolonize those lost spawning regions of the upper basin. Removal of the dams will provide a major boost to Klamath fisheries and to the local people who depend on those salmon.

If Chinook are able to recolonize lost spawning regions of the Klamath, it will provide a major boost to fisheries and to the local people who depend on those salmon.

WSC Joins the New Klamath Chinook Partnership

People in the Pacific Northwest love spring Chinook. All communities of fishers prize them for their fatty flavor. Tribal communities celebrate them with First Salmon rituals—marking the annual renewal of life-giving salmon runs. And because spring Chinook spawn and die in headwater streams, these fish deliver important nutrients high up in river systems.

Over the last several years, Wild Salmon Center has been closely involved with research that shows how spring Chinook are genetically unique from their fall run cousins. This has major implications for places like the Klamath River, where greater Chinook salmon diversity has been severely eroded by habitat destruction, disease, and drought. Springers’ have suffered disproportionately because they spend more time in freshwater and are more reliant on headwater habitats blocked by major dams. Various Klamath runs have dwindled to a few hundred fish.

How should spring Chinook be restored in the Klamath if major dams are removed starting in 2021? Because genetically distinct spring Chinook can’t simply re-emerge from fall populations, we need to look at novel approaches to restoring lost spring runs in the upper Klamath after the dams fall. It’s not as simple as tearing out the dams and allowing Chinook to swim upriver.

WSC Science Director Matt Sloat is working with a newly formed team of tribal, agency, and academic scientists to develop strategies to help Chinook recolonize the upper Klamath, which would benefit the entire region.
Jonathan Slaght

**Keystone Spotlight:** **Blakiston’s Fish Owl**

Giant owls need giant trees. But the salmon-eating Blakiston’s fish owl—the largest of the world’s 230 owl species and one of the rarest—needs a special kind of tree. It requires big trees with nesting cavities in close proximity to salmon-rich waters that don’t completely freeze over in the winter.

The peculiarities of the Blakiston’s was almost entirely unknown prior to 2005, when Jonathan Slaght, a wildlife biologist with the Wildlife Conservation Society, co-founded the Blakiston’s Fish Owl Project in the Russian Far East.

The owl eats mammals but prefers a diet of overwintering juvenile salmon (such as the masu captured above) and spring frogs. It spends an unusual amount of time on the ground, wearing out footpaths along favored fishing holes, where it will perch in or near the water for up to four hours waiting for a meal.

Today, efforts to save the endangered owl include efforts by our partners at Khabarovsk Wildlife Foundation to protect land surrounding the Koppi River.

Currently, only 19 percent of the owl’s prime Russian habitat is on protected land such as the Koppi River Reserve, while 43 percent is on land leased by logging companies. Conservationists’ ability to protect these remaining old-growth forests will determine the future of this fish owl and its favorite prey—juvenile salmon.

**Whole-Watershed Protections for Koppi**

The Koppi River is the most biodiverse salmon ecosystem in the world—featuring Amur tigers, Blakiston’s fish owl, Steller’s sea eagles, and Russia’s strongest remaining runs of Sakhalin taimen and Asian masu salmon. Wild Salmon Center helped to create the 97,000-acre Koppi Reserve in 2010, followed by the 445,000-acre traditional use area for Orochi hunters and gatherers in the Koppi watershed. Now, we are working with our partners at Khabarovsk Wildlife Foundation to add an additional three natural monuments—totaling an additional 85,000 acres—in the area. The goal is to install base levels of protection from headwaters to sea.

The work not only benefits the key species that call Koppi home, including the endangered Sakhalin taimen, but also a growing ecotourism economy. Outfitters in the area can apply for permits for guided hunts for sable and catch-and-release fishing for taimen on the river. Several guides participate in WSC’s taimen monitoring program in the region, which seeks to build a basic understanding of the population and behavior of these gamefish.

Meanwhile, our partners at Sakhalin Environment Watch are teaming-up with local residents to protect Sakhalin taimen and sharks and pink salmon stocks, as part of the 30-river Wild Salmon Territory initiative on Sakhalin’s northern coast. The coalition supports anti-poaching patrols and new protections on the Nahd River and the Dagi River (pictured below).

**Expanded Koppi protections will benefit rare species and a growing ecotourism economy.**

**Keystone Spotlight: Blakiston’s Fish Owl**

Giant owls need giant trees. But the salmon-eating Blakiston’s fish owl— one of the world’s 230 owl species and one of the rarest— needs a special kind of tree. It requires big trees with nesting cavities in close proximity to salmon-rich waters that don’t completely freeze over in the winter.

The peculiarities of the Blakiston’s was almost entirely unknown prior to 2005, when Jonathan Slaght, a wildlife biologist with the Wildlife Conservation Society, co-founded the Blakiston’s Fish Owl Project in the Russian Far East.

The owl eats mammals but prefers a diet of overwintering juvenile salmon (such as the masu captured above) and spring frogs. It spends an unusual amount of time on the ground, wearing out footpaths along favored fishing holes, where it will perch in or near the water for up to four hours waiting for a meal.

Today, efforts to save the endangered owl include efforts by our partners at Khabarovsk Wildlife Foundation to protect land surrounding the Koppi River.

Currently, only 19 percent of the owl’s prime Russian habitat is on protected land such as the Koppi River Reserve, while 43 percent is on land leased by logging companies. Conservationists’ ability to protect these remaining old-growth forests will determine the future of this fish owl and its favorite prey—juvenile salmon.

**Whole-Watershed Protections for Koppi**

The Koppi River is the most biodiverse salmon ecosystem in the world—featuring Amur tigers, Blakiston’s fish owl, Steller’s sea eagles, and Russia’s strongest remaining runs of Sakhalin taimen and Asian masu salmon. Wild Salmon Center helped to create the 97,000-acre Koppi Reserve in 2010, followed by the 445,000-acre traditional use area for Orochi hunters and gatherers in the Koppi watershed. Now, we are working with our partners at Khabarovsk Wildlife Foundation to add an additional three natural monuments—totaling an additional 85,000 acres—in the area. The goal is to install base levels of protection from headwaters to sea.

The work not only benefits the key species that call Koppi home, including the endangered Sakhalin taimen, but also a growing ecotourism economy. Outfitters in the area can apply for permits for guided hunts for sable and catch-and-release fishing for taimen on the river. Several guides participate in WSC’s taimen monitoring program in the region, which seeks to build a basic understanding of the population and behavior of these gamefish.

Meanwhile, our partners at Sakhalin Environment Watch are teaming-up with local residents to protect Sakhalin taimen and sharks and pink salmon stocks, as part of the 30-river Wild Salmon Territory initiative on Sakhalin’s northern coast. The coalition supports anti-poaching patrols and new protections on the Nahd River and the Dagi River (pictured below).
Large taimen are a key physical marker of healthy nutrient flow in Russian rivers.

A Yellowstone for Taimen

Siberian taimen, the ancient, long-lived, oversized cousin of salmon, still reign in a dwindling kingdom of cold, undisturbed rivers in the Russian Far East. Roughly half of these watersheds are beyond the reach of even the most intrepid scientists—buffered by roadless expanses of larch, Korean pine, northern hardwoods, and spruce that have survived the illegal logging that feeds a voracious global appetite for wood in recent decades.

Wild Salmon Center and our partners at Khabarovsk Wildlife Foundation are this year working on new protections in the region that would create a network of adjacent reserves totaling 3.5 million acres—50 percent larger than Yellowstone National Park. It will be a super stronghold for taimen.

In the early 2000s, Wild Salmon Center identified this amazing tract of untouched taimen watersheds as part of our early rapid assessments in the Russian Far East. Now, the regional government has prioritized protections here, recognizing the value of salmon resources and the need to stay ahead of Chinese-funded illegal logging ventures that are threatening these watersheds.

New expansions include the Tugur River (pictured right), a wild Siberian taimen stronghold, and the Maya River, a pristine and little studied tributary of the Uda, adjacent to the Tugur and which early surveys show is prime taimen habitat. In addition to runs of chum salmon, grayling, and lenok, the region is home to healthy populations of wolves, moose, elk, bear, and sea eagles, and the traditional hunting and fishing grounds of Nanai and Evenk people. With protected areas and anti-poaching patrols, we can prevent the unraveling of these last, great places.

Keystone Spotlight: Siberian Taimen

How does the mysterious and globally vulnerable Siberian taimen reach 100 pounds and five feet in length without going to sea? The short answer: it eats adult salmon as soon as it is big enough to swallow them.

Our recent analysis of samples from the remote Tugur River shows that taimen switch to eating adult salmon when they reach about four feet. A 101-pound Siberian taimen sampled and released in 2018 on the Tugur was almost entirely comprised of marine nutrients from digested chums—“pure salmon,” says WSC Science Director Matt Sloat.

Taimen swallow the salmon whole and digest them piecemeal, like a large python. A set of backward facing teeth in their gills pull the salmon into their digestive tract.

These large fish aren’t just a novelty. They are a physical marker of healthy nutrient flow up these rivers and throughout the food web, delivered by migrating salmon as well as grayling and lenok. And the whole river system depends on that flow.
The Stronghold Fund

Early returns from WSC’s Impact Fund

Wild Salmon Center created The Stronghold Fund to financially support and bolster critically important campaigns and to breathe life into ambitious new conservation opportunities.

The Stronghold Fund is supporting a new organization working on the Dean River and inner British Columbia coast.

The Stronghold Fund

Early returns from WSC’s Impact Fund

Wild Salmon Center created The Stronghold Fund to financially support and bolster critically important campaigns and to breathe life into ambitious new conservation opportunities.

The fund aims to focus strategic and timely investments in stronghold rivers and regions for key partnership-based initiatives. This partnership-based model has always been a core part of Wild Salmon Center’s DNA; the fund continues that tradition because we’ve learned that we’re more likely to achieve our goal when conservation groups work together and bring complementary strengths to a unified campaign.

We continue to fundraise for The Stronghold Fund and are making progress. To date we’ve raised nearly $16 million toward a $25 million goal. Importantly, the fund is not an endowment. It’s what we call a “win-now” resource that will be spent down on the initiatives that are most urgent in Pacific Rim watersheds. Ultimately, our goal is to make The Stronghold Fund the central vehicle for donors to support strategic partnership efforts to conserve the places that matter most to wild salmon and steelhead.

Though we continue to focus on capitalizing the fund, we’ve made a few early and important investments in the last year. They are:

A commitment to support communications capacity and resources for the coalition defending Bristol Bay — This coalition includes WSC and our core partners in Alaska and is working to safeguard the region from the proposed Pebble Mine. Its mission is to ensure that the world’s most prolific wild runs of sockeye salmon are protected for future generations.

Seed funding for Coastal Rivers Conservancy — The mission of this new organization based in British Columbia (see page 10) is to use advocacy, science, and public education to secure the long-term ecological health of the Dean River and inner BC central coast and its outstanding wild salmon and steelhead populations.

A grant to SkeenaWild Conservation Trust — Wild Salmon Center’s longtime ally is continuing its work to conserve the Skeena River watershed in northern British Columbia. These efforts include: prohibiting industrial development on Flora, Agnew, and Honary banks (critical salmon and steelhead habitat in the Skeena River estuary); working with First Nations on land use plans that include protection strategies for the Babine watershed; and expanding SkeenaWild’s capacity to reform mining in the region, including efforts to stop the proposed open pit coal mine in the Telkwa Watershed.

To learn more about The Stronghold Fund, contact David Finkel, Executive Director (dfinkel@wildsalmoncenter.org) or visit thestrongholdfund.org.

Dean River, BRITISH COLUMBIA
Thank you to all our donors for helping make this a success. With your support, we can ensure the health and abundance of our shared wild salmon resources.

Thank you to all our donors for helping make 2018 a success.

2018 Donors

- **Foundations, Corporations, and Governments**
  - AmazonSmile
  - Anonymous
  - bambuOutdoor
  - Deke and Hope Welles Fund of the Paulus Family Foundation
  - Gordon and Betty Moore Foundation
  - Conrad N. Hilton Foundation
  - Schwab Charitable Fund
  - John G. Searle Family Trust
  - The DeBruce Foundation
  - The Stronghold Fund

- **Individual Donors**
  - Lawrence and Pamela Garlick
  - Guido Rahr
  - NOAA Restoration Center
  - Mountain Rose Herbs
  - Moore Charitable Foundation, Inc.
  - Montana Trout Unlimited
  - The Mohamed bin Zayed Species Conservation Foundation (YDCCF)
  - Mitsubishi Corporation Foundation
  - Meyer Memorial Trust
  - Live Botanical
  - Lazar Foundation
  - L.P. Brown Foundation
  - Kamchatka Engagement
  - GRIP6 Belts
  - The Fly Shop
  - Deneki Outdoors
  - The Conservation Alliance
  - Classic Foods
  - Charles Stewart Mott Foundation
  - Burning Foundation
  - Samuel Barone
  - Paul Bange
  - Matthew Bancroft
  - Doug Ballinger
  - Adam Bagger
  - Heather Bacon-Shone
  - Andy Askren
  - Dianne Arrigoni
  - Tom Armstrong
  - Joseph Anscher
  - Frank Angelino
  - David and Karen Andruss
  - Alys Allwardt
  - Abtin Akbari Aliabadi
  - Will and Valerie Aitchison
  - Rebecca and Andy Adkins
  - Linda Ach
  - Ryan Aanderud
  - Your True Nature
  - Yonder, Inc.
  - Willowspring Charitable Trust
  - WSC Chairman

- **Media**
  - WWF

- **2018 recipients**
  - Eric Dobkin and WSC Chairman
  - John & Diane de Leeuw
  - Allure and Zephyr Species Conservation Fund
  - Montana Trout Unlimited
  - The Lighthouse Fund
  - WSC Chairman

- **Matching Gifts**
  - Matching gifts from 64 lodges worldwide.
Boomerang outdoor club chairwoman Valentina Mezenteva (center) and 28 29
The Mr. and Mrs. David J. Field
Greg Felten
Shelley Faunt
Andrew Fairley
Jeff Evershed
Donald Evenson
Todd Evanoff
Robert Erickson
Susan and William Epstein
Walter C. Emery Family Foundation
Katherine Ellerbeck
Jason Elino
Ashley Ehmig
Jane Ediger
The Eckley Family Charitable Fund
Jonathan Gantt
Seng-Ian Gan
Will Gallo
Joseph Gaby
Patricia Funk
Christopher Franklin
Charles Foster
Nick Fortna
Jay Forrest
Reuben H. Fleet Foundation Fund at
Christina Flaxel
Russell Fisher
Susan Finkel
David Finkel
Ben Finkel
Walter Finkbeiner
Chloe Fields
Lawrence and Pamela Garlick
the San Diego Foundation
of the Harder Foundation.
Peter Seligmann, Dean River, BC.
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
>
/>
Begin Your Legacy of Wild Salmon Strongholds

If you haven’t yet made a will or other estate plans, now is the best time to start. A will is an important plan to have in place no matter your age or circumstances—and an excellent way to provide for the causes and places you care about, including the North Pacific’s best remaining wild salmon and steelhead rivers. Your support through planned gifts (like bequests) is vital to WSC’s mission, because protecting our most important watersheds will take a multi-generational commitment.

Right now, Wild Salmon Center has a unique opportunity to do more with your planned gift: a generous donor has provided for the causes and places you care most about, and an excellent way to bequeath to your children and grandchildren.

Learn more about planned giving (and our new Firewill tool for estate planning) by visiting wildsalmoncenter.org or contacting Kim Kosa at 971-255-5562 or kkosa@wildsalmoncenter.org.

Learn more about planned giving (and our new Firewill tool for estate planning) by visiting wildsalmoncenter.org or contacting Kim Kosa at 971-255-5562 or kkosa@wildsalmoncenter.org.

Begin Your Legacy of Wild Salmon Strongholds

If you haven’t yet made a will or other estate plans, now is the best time to start. A will is an important plan to have in place no matter your age or circumstances—and an excellent way to provide for the causes and places you care about, including the North Pacific’s best remaining wild salmon and steelhead rivers. Your support through planned gifts (like bequests) is vital to WSC’s mission, because protecting our most important watersheds will take a multi-generational commitment.

Right now, Wild Salmon Center has a unique opportunity to do more with your planned gift: a generous donor has provided for the causes and places you care most about, and an excellent way to bequeath to your children and grandchildren.

Learn more about planned giving (and our new Firewill tool for estate planning) by visiting wildsalmoncenter.org or contacting Kim Kosa at 971-255-5562 or kkosa@wildsalmoncenter.org.
Stronghold Guardians

Donors (Monthly & Quarterly Donors)

Anonymous (5)
Stevie Agulla
Brandon Bailey
Mick Baker
Justie Baker
Charlie Davidson
Theodore Chu
Stephen Delehanty
David Dustin
David Gringer
Simon Finney
Nordal Ford
Aaron Garger
Mary Haney
Bente Hjortnes
Taylor Hitchens
Stephanie Johnson
Matthew Korey
Tom Kasper
Margaret Liddell
Sarah Longes
Kate Macon维奇
Kreuzer
Sunny May
Joyce Minckler
Patrice McMahen
Patrick McInch
Col. Mushby
Tham Nguyen
Oli Ogilvie
Anhe Pashley
Thomas Pab
Jason Parker
Tom Pfeiler
Ingrid Piranian
C.D. Phillips
Chris Plooy
Jeff Coates
C. M. Rockwell
Dougai Rohi
Adam Rouse
Beau Ross
Ede Sander
Gary Shears
Joel Sanderburg

Stephen Stokey
Chip Stranger
Tony Sunneon
Jim Trout
Tom Tubbs
Josh Tubbs
Peter Warren
Donald Wilcox
Andrew Youn

Honor and Memorial Gifts

Anonymous in honor of Jak C. Carstens
Anonymous in honor of Rabbi Quzon
Steven Andrade in honor of the United States Environmental Protection Agency
Karen Alexander in honor of Lori Howe
Everett Aronson in honor of Everett Aronson
Jean and Howard Blank in honor of Craig Blough
Paul Lee in honor of Bob Dunlop
Carol Lueck in honor of WSC
Deborah M. Kelley in honor of Ray M. Kellogg
Jeffrey and Joanna Beldin in honor of Craig Blough

Mercedes Cerrito in honor of Larry Williams
Sarah Cress in honor of Bob Rees
Nathan Collins in honor of Ingrid Giddings
Robin Davighi in honor of Sue Davighi
Nick Federoff in honor of Bob Federoff
Hilary Finley in honor of Andy Fedory
Kazina Inabinet in honor of Bob Rees
Shula Heman in honor of Jeanic Heman
Lee Jenkins in honor of DFS Quarters
Myron Klahn in memory of Charles "Keke" Evans
Michael Kimber in honor of Adam Kimber
Carol Lueck in honor of Bob Rees
Danny Ely in memory of Jane Electron
Kathie Lohr in honor of Pam Lohr
Cindy Lohr in honor of Pam Lohr
Jim New in honor of Pam Lohr
Mary New in honor of Pam Lohr
Patricia New in honor of Pam Lohr
Joyce Minckler in memory of Pam Lohr
Joyce Minckler in honor of Pam Lohr

Stronghold Guardians

Find out more at: artifactscenter.org/strongholdbook

BOOK SPOTLIGHT

STRENGTH

We’re excited to announce the launch of STRONGHOLD, a new book from Random House by Tucker Marabley about our agency, The Wild Salmon Center.

The Conservation Alliance

For the fiscal year ending December 31, 2018

**This woman has been named one of the nation’s most influential leaders in conservation.” Financial data and other information on page 11 can be found at artifactscenter.org/2018-fiscal-report. Check out the 2018 Annual Report in the Resources section of our website. **

The Wild Salmon Center has been awarded the “Best in the Americas” Seal of Excellence by the Independent Charities of America and Local Independent Charities of America. This signifies that upon rigorous independent review, the organization met the highest standards of public accountability as well as program and cost effectiveness.

The Wild Salmon Center is a grantee of the Conservation Alliance, a group of outdoor industry organizations that disburses collective annual membership dues to grassroots environmental organizations.

FINANCIALS

Statement of Activities

For the fiscal year ending December 31, 2018

**This woman has been named one of the nation’s most influential leaders in conservation.” Financial data and other information on page 11 can be found at artifactscenter.org/2018-fiscal-report. Check out the 2018 Annual Report in the Resources section of our website. **

The Wild Salmon Center has been awarded the “Best in the Americas” Seal of Excellence by the Independent Charities of America and Local Independent Charities of America. This signifies that upon rigorous independent review, the organization met the highest standards of public accountability as well as program and cost effectiveness.

The Wild Salmon Center is a grantee of the Conservation Alliance, a group of outdoor industry organizations that disburses collective annual membership dues to grassroots environmental organizations.

**
New Additions

Wild Salmon Center is thrilled to introduce you to three new board members. All bring very different experiences and perspectives to our work, but they share a common passion for wild salmon and steelhead.

April Vokey

April Vokey (top) is a flyfishing guide, writer, FFF certified casting instructor, fly-tyer, speaker, and popular podcast host. After ten years of guiding in British Columbia, she now splits her year between her home on the Skeena and Australia. “In all of the inhabited places I have been on this planet, none are as pristine and wild as the Skeena,” Vokey says. “My hope is that WSC and the public will team together to continue fighting to keep the Skeena wild.”

Ray Lane

Ray Lane (bottom left, center, with daughters) is one of Silicon Valley’s most successful business leaders, and is currently Managing Partner at GreatPoint Ventures and partner emeritus at Kleiner Perkins Caufield & Byers. Lane is also an avid flyfisherman with a soft spot for Alaska. “I have visited Alaska once or twice a year since 2003,” he says. “And I am a big believer in Wild Salmon Center’s mission to provide fundamental protection of salmon and their spawning habitat to protect the entire wildlife ecosystem in the Pacific Rim.”

Steven Kohl

Steven Kohl (bottom right) has been a longtime partner of Wild Salmon Center and our Russia program throughout his 38-year career at the International Conservation Division of the U.S. Fish and Wildlife Service. A fluent Russian speaker, he’s now retired, but still active in promoting binational cooperation. “Of all the countries in the world, what the U.S. and Russia do to conserve fish and wildlife and cooperate bilaterally serves as an example (and hopefully, an inspiration) to other nations,” Kohl says.