



Impact Report 2020



Oceans Initiative is a team of scientists on a mission to protect marine life in the Pacific Northwest and beyond, and to share their cutting-edge science to guide conservation action.



Dear Friends,

I am pleased to share Oceans Initiative's Impact Report for 2020. In a year that's challenged us like none other in recent history, I couldn't be more proud of our team of scientists and researchers, and the mission work we've been able to accomplish.

For Oceans Initiative, the onset of the global pandemic brought with it a great deal of concern and uncertainty. At times, we wondered how we'd be able to fulfill our mission. Despite our concerns, we felt driven to make an immediate contribution. Being parents of a 6-year-old, and with schools closed in Seattle for the foreseeable future, we wanted to find a way to share our knowledge and our mission, and help other families in our community. We reached out to Oceans Initiative's social media followers and offered to host a Virtual Marine Biology Camp where kids could chat with us about killer whales, dolphins, and other marine life, to keep them entertained while learning from home. The response was overwhelming and we were excited to have reached thousands of kids around the world. We saw a surprising surge in new supporters following this two-month period, a completely unexpected outcome of this opportunity to give back to our community.

2020 was also a year of growth. We hired four female early career scientists as Biological Research Assistants along with a Research Associate. And, two of our team members just began their Masters in Statistical Ecology at the University of St. Andrews. At the start of the year, we also welcomed two new members onto our Board of Directors, bringing with them a wealth of knowledge and experience with non-profit organizations and a passion for our mission. This additional depth on the Oceans Initiative team will expand our ability to tackle some of the most critical conservation issues facing marine wildlife and allow us to be the most effective voice for ocean conservation that we can be.

We are so grateful for our ever-growing pod of partners, supporters and friends who share our love for the ocean and the marine life that calls it home. You give life to our conservation programs—your dedication makes a world of difference.



With oceans of gratitude,

Erin Ashe

Dr. Erin Ashe
Executive Director

My daughter has loved being a part of your virtual marine biology camp. Thank you so much for sharing your knowledge and your dedication to protecting our oceans and marine wildlife! — Mindy M., Texas

Our Story

Founded and run by two scientists dedicated to protecting marine wildlife, our team tackles every aspect of marine conservation science with the goal of making conservation both easier for decision-makers to understand and easier for people to practice.

Oceans Initiative is perhaps best known for conducting cutting-edge research to understand human threats to the critically endangered southern resident killer whale (SRKW) population, and guiding effective recovery plans. In fact, we are rare among conservation non-profits in that we have active research projects on all three threats to the whales—not enough salmon, too much noise, and chemical pollution.

Our non-profit is small, but it has an outsize impact in marine conservation. We are a boundary organization that works at the interface of science and policy. Our broader programs address the protection of all marine life, from using non-invasive conservation science to identify marine species in most need of protection to developing tools and technology that address the tragedy of marine mammal bycatch.

Our People

In 2020, we welcomed five new people—Andrea, Asila, Catherine, Kimberly and Stephanie—to the Oceans Initiative team. We are also delighted that Debra and Nan joined our Board of Directors.

Oceans Initiative Board of Directors

Erin Ashe, PhD

Debra Boyer, PhD

Duschka Fowler-Dunning, MBA

Melissa Hornbein, MSc, JD

Nan McKay

Gae Weber, MSW

Oceans Initiative Team

Erin Ashe, PhD — [Founder, Executive Director, and Scientist](#)

Rob Williams, PhD — [Founder and Chief Scientist](#)

Asila Ghoult Bergman — [Research Associate](#)

Laura Bogaard — [Graduate Research Fellow in Statistical Ecology](#)

Marena Salerno Collins — [Graduate Research Fellow in Statistical Ecology](#)

Catherine Lo — [Biological Research Assistant](#)

Natalie Mastick — [Graduate Fellow in Marine Parasite Ecology](#)

Andrea Mendez-Bye — [Biological Research Assistant](#)

Kimberly Nielsen — [Biological Research Assistant](#)

Stephanie Reiss — [Biological Research Assistant](#)

Karen Sinclair — [Development and Marketing](#)

A Message from our Chief Scientist

Like the whales we study, the Oceans Initiative team is highly mobile and migratory. We divide our time between getting our feet wet in the field, wherever our work is needed, and using our science to inform smart decisions to conserve wildlife. Covid-19 required us to hit pause on most of our travel plans this year, but it was a bit of a treat. We slowed down, and tried to improve our local conservation impact. With all of the time we saved on travel, we took the time to look inward to think strategically about the kind of work we want to do in the coming years, when a vaccine is in widespread use.



We are proud of the real-world impact our conservation science has, but some of it can feel pretty abstract at times. After all, you can't see noise in the ocean. It will take years before the orcas we study start to show us—through increased births and longer lifespans—that our efforts to protect the whales' habitats are paying off. So it was a real joy this year to work on projects that use carefully engineered sound signals to scare seals away from eating endangered salmon. We could see the conservation benefit of our work in real life, in real time. Five years from now, we hope that the offspring of some of the Chinook salmon we helped make it to their spawning grounds return as prey for endangered orcas.

Of course, time is the constraint here. As we work to get the whales more salmon, and quiet enough conditions to hunt, climate change is making our job harder every year. In 2021, we are strengthening our work to climate-proof recovery of belugas, dolphins, killer whales, and marine predators around the world. Our work is showing that we can save species by removing as many stressors as we can now, in order to build their resilience to buffer effects of climate change.

At Oceans Initiative, one of our core values is *Optimism*. We actively cultivate hope, focus on solutions, and acknowledge conservation successes. I am proud of our scientific accomplishments, and our team's optimism, that carried us through 2020. With your support, I am hopeful that we can celebrate even more conservation wins in 2021 and beyond. Thank you for supporting our efforts to keep our oceans clean, quiet, and full of life.

— Dr. Rob Williams, Chief Scientist



Killer Whale Conservation

Our science was used to guide key recommendations of the SRKW Task Force, namely to increase Chinook salmon availability by 15% and reduce noise and disturbance by 50%, to make it easier for the whales to hunt for Chinook salmon using sound.

Land-based study to assess impact of vessel and acoustic mitigation measures

Southern resident killer whales (SRKW) are endangered in part because there is not enough food, and the ocean is too loud to allow the whales to find their preferred prey, Chinook salmon. Noise from activities such as shipping can cause the whales to lose 62-97% of communication opportunities, critical to hunting, staying safe, and finding mates.

For the third consecutive year, Oceans Initiative has conducted a land-based study to assess the impact of vessel and acoustic mitigation measures such as a reduction in vessel speed and an increase in the approach distances from SRKWs. Specifically, we are measuring the impact of noise on SRKW

foraging behavior. We expect to see that the whales will feed more when conditions are quiet enough to find food.

Our team conducted land-based surveys at various sites on San Juan Island where we tracked the whales using a Theodolite. When placed on an elevated shore-based vantage point, this tool can be used to obtain data on the whales' movement, behavior, distribution, and habitat use. If we can guide effective mitigation measures to reduce noise and improve access to prey, we would expect to see improvement in the whales' body condition, an increase in surviving calves, and a decrease in premature deaths.



Where there's a whale, there's a way. Keeping field science going in a pandemic By John Ryan, OCT 05, 2020



Mapping key foraging areas of SRKWs to identify marine protected areas

Protected areas are widely accepted as an effective conservation tool for cetaceans and in the case of SRKWs, may offer a reduction in competition with fishers for access to scarce Chinook salmon, and a reduction of vessel disturbance and noise.

Oceans Initiative led the first effort to map key foraging areas of SRKWs to identify marine protected areas (MPA) that would do the most good for the whales at the least cost to ocean users (Ashe et al. 2010). With support from San Juan County, we have signed data sharing agreements with six researchers who hold fine-scale, spatially explicit behavioral data on SRKWs from 2003 to 2020. This represents a 14-fold increase in sample size over our 2010 publication. We are using this combined dataset to conduct a sophisticated spatial model of foraging habitat use, which San Juan County can then use in a stakeholder consultation process to identify protection zones for orcas and salmon.

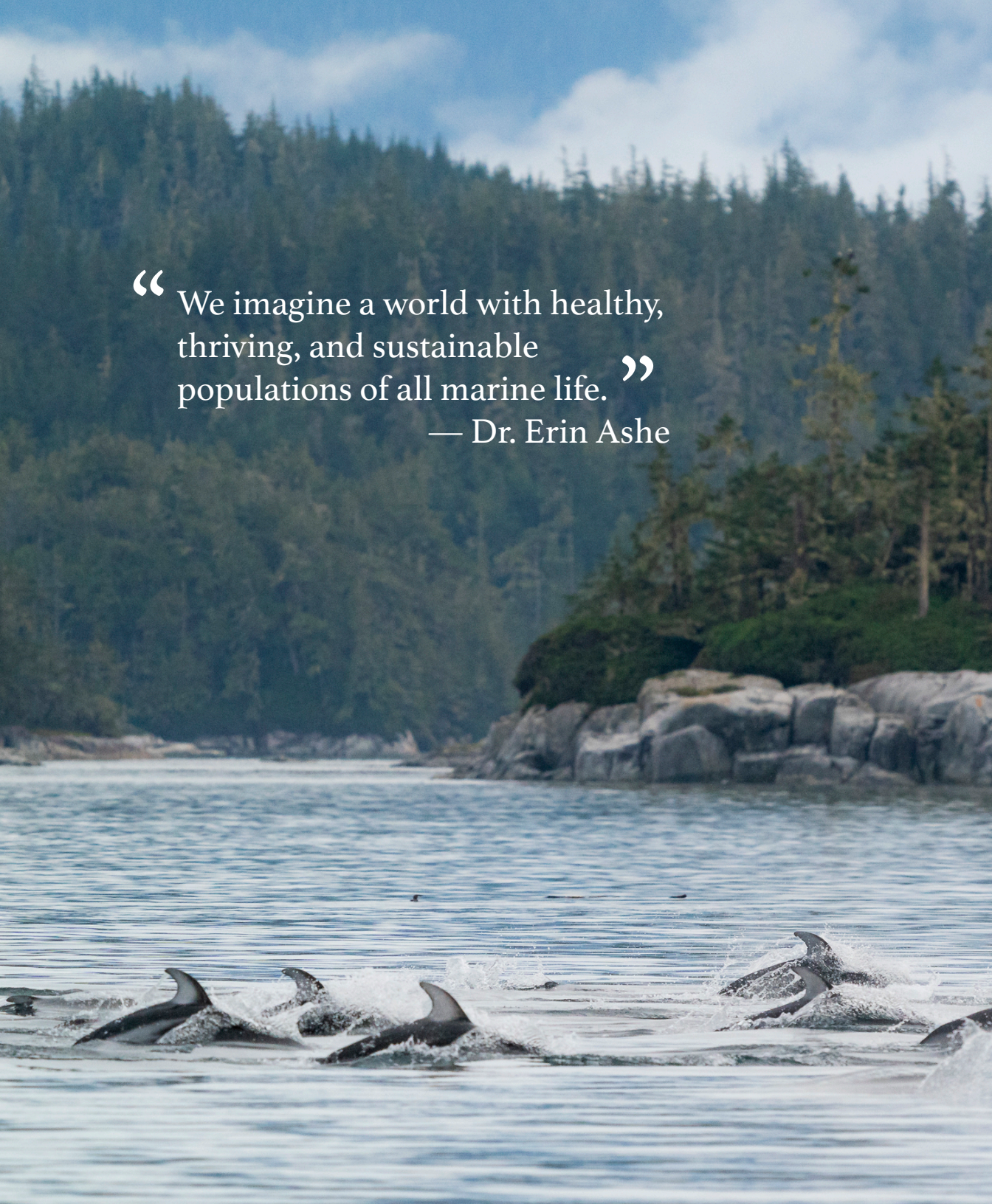
Understanding demographic responses of SRKWs to changes in Chinook salmon availability and accessibility

We have been working to understand how much Chinook salmon it will take for SRKWs to survive and recover. We must improve the weakest link in our understanding of the cumulative effects of all stressors the whales face, namely the link between prey abundance and SRKW demographic rates. Collaborating with provincial/state, federal, and First Nations/ Tribal governments on both sides of the border, this project will bring new science to those processes to set biologically meaningful and precautionary Chinook salmon recovery targets as they pertain to SRKW demography.



Assessing the prevalence of parasitism on SRKWs and understanding the impact on body condition

Preventing the death of even one ailing whale each year can make the difference between continued population decline and recovery. Parasitism can act as an earlier indicator of SRKW status than long-term population trends, and importantly, this threat lends itself to direct management. Early, targeted veterinary intervention has the potential to prevent sick whales from dying. In part, thanks to your support, Natalie's doctoral work will result in new veterinary tools to help recover SRKWs.



“ We imagine a world with healthy,
thriving, and sustainable
populations of all marine life. ”

— Dr. Erin Ashe

Species Protection and Conservation Assessment

Each day, we ask how our science can best protect species we know are endangered and identify other species that are simply neglected in conservation and management.

Long-term photo-identification study

Dr. Ashe has been studying Pacific white-sided dolphins in the Broughton Archipelago in Canada since 2005, building upon the work of marine biologist Alexandra Morton who had been collecting photographs of the dolphins' unique markings and dorsal fin shapes for 20 years, since the late 1980s.

Using a population assessment method called photo-identification, Dr. Ashe is able to estimate their abundance. Photo-ID models rely on high-quality photographs of individually identified dolphins with distinctive dorsal fins. After spending weeks in the field each year observing and photographing Pacific white-sided dolphins, Dr. Ashe and her team compare these photos across the years to count how many dolphins have been re-sighted each year. This information helps us to measure their abundance and also teaches us about their interesting life history and behavioral traits.



Reclassification of a genus

The scientific name for Pacific white-sided dolphins is *Lagenorhynchus obliquidens*. Based on a review of genetic, acoustic, and behavioral traits, Dr. Ashe worked with colleagues on a reclassification of the entire genus leading to the renaming of five species including Pacific white-sided dolphins. The proposed scientific name is: *Sagmatias obliquidens*. The genus as a whole is so neglected in science that Pacific white-sided dolphins have been called by the wrong scientific name for 150 years!



Deterring harbor seal predation on salmon

Declines in the survival of Salish Sea Chinook, coho, and steelhead have spurred significant research and conservation action over the past several years. Predation by harbor seals on out-migrating juvenile salmon and returning adult salmon, especially at bottlenecks such as Seattle's Ballard Locks has been identified as a major impact on salmon populations.

Oceans Initiative tested a new device called the Targeted Acoustic Startle Technology (TAST), designed to reduce harbor seal predation on at-risk salmon stocks. This cutting-edge technology, developed by the University of St. Andrews and GenusWave, provides a non-lethal alternative to protecting salmon without harming or killing seals. The sound made by the GenusWave TAST provokes a flight response in the seal without bothering salmon.



Based on observations and preliminary results on the TAST's effectiveness, the device was deployed at a second location near the mouth of Whatcom Creek in Bellingham, Washington. Here, the TAST appears to have deterred the seals congregating at the river's entrance to the hatchery where chum salmon bottleneck as they return each fall. Additional locations are currently being identified for possible deployment throughout Puget Sound and beyond.

The Seattle Times

By environmental reporter, Lynda V. Mapes



October 4, 2020 at 6:00 am

Researchers test underwater noisemaker to scare away seals at Ballard Locks [VIEW](#)

A new device seems to be making just the right racket at the Ballard locks, deterring seals from their salmon snack bar. Will this finally...



Washington Department of
Fish and Wildlife

November 16, 2020

The sound of saving salmon

At Whatcom Creek in Bellingham, a unique new device is helping salmon by keeping seals at bay

Sound Ocean

Sound is as important to marine mammals as vision is to humans.

Assessing in-air and underwater noise from Navy Growler jets in Puget Sound

Governor Inslee's SRKW Task Force recommended coordination with the Navy to discuss the reduction of noise and disturbance affecting SRKWs from military exercises and Navy aircraft. Military operations may result in noise impacts on surrounding communities and wildlife. A recent transition to more powerful military aircraft and a national consolidation of training operations to Whidbey Island, Washington, provided a unique opportunity to measure and assess both in-air and underwater noise associated with military aircraft.

We found in-air noise levels exceeded known thresholds of behavioral and physiological impacts for humans, as well as terrestrial birds and mammals. Using a hydrophone deployed near one runway, we also detected sound signatures of aircraft at a depth of 120 feet, with noise levels exceeding thresholds known to trigger behavioral changes in fish, seabirds, and marine mammals, including endangered SRKWs. Our study highlights challenges and problems in evaluating the implications of increased noise pollution from military operations, and knowledge gaps that should be prioritized with respect to understanding impacts on people and sensitive wildlife.



[Above and below: Military Aircraft Noise in Air and under Water at Whidbey Island, Washington.](#)

Lauren M. Kuehne, Christine Erbe, Erin Ashe, Laura T. Bogaard, Marena Salerno Collins, and Rob Williams, 2020.



[Behavioral assessment of in-air hearing range for the Pacific walrus.](#)

Colleen Reichmuth, Jillian M Sills, Ariel Brewer, Lisa Triggs, Rebecca Ferguson, Erin Ashe, Rob Williams, 2020.

Community engagement in ocean noise data collection

Earlier this year we launched an "Acoustic Prospecting Toolkit" to engage local boaters in an effort to find the last quiet times and places in our ocean. Our vision is to provide affordable portable hydrophone and recording kits to individuals to keep an ear on the sea we're working so hard to protect. These are waterproof portable kits that can be taken on a sailboat, hung over a dock, or attached to a mooring buoy. They are also calibrated, so we can use the resulting high-quality recordings for reliable science. We believe that trained citizen scientists can help us collect data to help measure ocean noise levels.

Sustainable Fisheries

Bycatch in fisheries remains the biggest conservation threat to most of the world's marine mammals.

Improved sustainability of global fisheries

Oceans Initiative specializes in the science to assess which marine mammal populations are most at risk from bycatch and other harmful human activities, and in working with industry to reduce harm. We recently led a high-profile study in *Science* to describe how a new U.S. seafood trade rule may create much-needed financial incentives for countries to reduce marine mammal bycatch to sustainable levels, or risk losing the opportunity to sell their seafood on U.S. markets. The success of this new rule hinges on the U.S. leading by example, so our work involves U.S. fisheries as well as international capacity-building efforts. With mandates for safer fishing practices slated to go into effect in 2022, commercial fishers worldwide need more tools to reduce bycatch and demonstrate population health.

Oceans Initiative partnered with scientists at the International Union for Conservation of Nature (IUCN) and the U.S. National Oceanic and Atmospheric Administration (NOAA) to create the Animal Counting Toolkit, a low-cost system for rapidly assessing populations of marine mammals. We then worked with fisheries scientists at the University of Washington on a two-year working group to build statistical tools to assess sustainability of marine mammal bycatch in data-poor fisheries.

This will help low-income countries comply with the new U.S. seafood trade rule that will ban seafood exports to the U.S. unless they can demonstrate that marine mammal bycatch in their commercial export fisheries meets standards comparable to those in the U.S.



[Robustness of potential biological removal to monitoring, environmental, and management uncertainties.](#) André E Punt, Margaret Siple, Tessa B Francis, Phillip S Hammond, Dennis Heinemann, Kristy J Long, Jeffrey E Moore, Maritza Sepúlveda, Randall R Reeves, Guðjón Már Sigurðsson, Gísli Víkingsson, Paul R Wade, Rob Williams, Alexandre N Zerbini, 2020.



[Evaluating management strategies for marine mammal populations: an example for multiple species and multiple fishing sectors in Iceland.](#) André E Punt, Margaret Siple, Guðjón Már Sigurðsson, Gísli Víkingsson, Tessa B Francis, Sandra M Granquist, Philip S Hammond, Dennis Heinemann, Kristy J Long, Jeffrey E Moore, Maritza Sepúlveda, Randall R Reeves, Paul R Wade, Rob Williams, Alexandre N Zerbini, 2020.



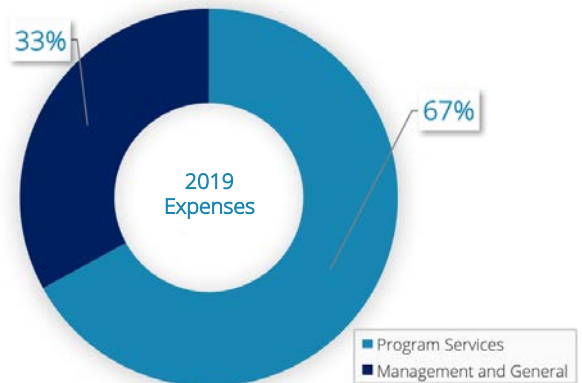
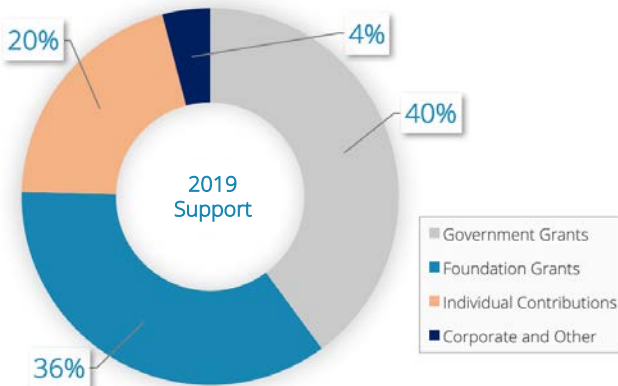
ScienceDirect

[Assessing pinniped bycatch mortality with uncertainty in abundance and post-release mortality: A case study from Chile.](#)

André E Punt, Maritza Sepúlveda, Margaret Siple, Jeffrey E Moore, Tessa B Francis, Dennis Heinemann, Phillip S Hammond, Kristy J Long, Doris Oliva, Randall R Reeves, Guðjón Már Sigurðsson, Gísli Víkingsson, Paul R Wade, Rob Williams, Alexandre N Zerbini, 2020.

Financials

Our full year 2019 financials showed positive growth in revenue to \$429,000. We expect this trend to continue into 2020 with revenue projected to be \$600,000.

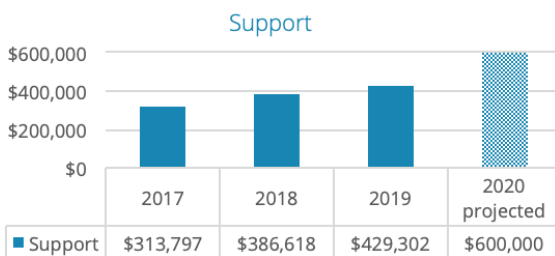


Support

Government Grants	\$171,372
Foundation Grants	\$152,446
Individual Contributions	\$87,890
Corporate and Other	\$17,594
Total Support	\$429,302

Expenses

Program Services	\$266,874
Management and General	\$131,268
Total Expenses	\$398,142



Get Involved

Please spread the word about the work we do, and know that your involvement makes all the difference in the world.

Oceans Initiative is a Seattle-based 501(c)3 non-profit organization. We rely on your donations to do the ocean conservation work that we do. Help us keep whale and dolphin habitats clean, quiet, and full of life by making a tax-deductible donation today. For online donations, please visit our website at oceansinitiative.org.

We love hearing from you. Leave a comment on our blog, subscribe to our newsletter, and follow us on Facebook, Instagram, and Twitter.

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Some of Our Recent Partners





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