



**Meeting Minutes  
Nisqually River Council Meeting  
April 20, 2020  
Online Meeting**

*Attendees:*

**NRC Members:**

Dan Calvert – Puget Sound Partnership  
Stacey Dixon – UW Pack Forest  
Sheila Marcoe – Department of Ecology  
Glynnis Nakai – BFJNNWR

Rene’ Skaggs – Pierce Cons. District  
Kevin Skerl – Mount Rainier National Park  
David Troutt, chair – Nisqually Indian Tribe

**CAC Members:**

Phyllis Farrell  
Howard Glastetter  
Ed Kenney

Paula Holroyde  
Karelina Resnick  
Lois Ward

**Guests:**

Roger Andrascik – NLT/NSS  
Brad Beach – Nisqually Indian Tribe  
Jeff Barney – Pierce County  
Warren Bergh – NLT/NSS  
Chris Ellings – Nisqually Indian Tribe  
Lloyd Fetterly – NLT/NSS

Cathy Hamilton-Wissmer  
Michelle Horkings-Brigham  
Joe Kane – NLT  
Martin McCallum - NLT  
Eric Rosane – Nisqually Valley News  
Jacques White – Long Live The Kings

**Staff:**

Justin Hall  
Emily McCartan

Maya Nabipoor  
Sheila Wilson

**1. Call to Order, Introductions, Approval of Minutes and Agenda**

David called the meeting to order at 9:52. Minutes from the February meeting were approved, as was the agenda for the day. This is the first online meeting of the Nisqually River Council as we keep working in these unusual times.

**2. Salish Sea Marine Survival Project**

*Jacques White, Long Live The Kings Executive Director*

Jacques has been the executive director of Long Live The Kings (LLTK) since 2010. He has a background in oceanography and salmon recovery. The Salish Sea Marine Survival Project, founded in 2011, is a US-Canadian partnership coordinated by LLTK and the Pacific Salmon Foundation, with over 60. Its goal is to identify the primary factors affecting juvenile salmon survival in the Salish Sea. The project is largely funded through tribal and public sources with some private donors.

Salmon used to be plentiful, bigger, and more diverse in life history. Size reduction in Chinook is a huge loss for SRKWs, because they expend the same energy to catch less mass

in fish. Salmon diversity has declined. Almost 50% used to return before August, now less than 12%. Salmon fisheries dropped 80% from 1984 to 1994, when Chinook were listed as threatened, and continue to fall.

The marine environment's effect on salmon survival is the least understood. Marine survival (the percent of smolts that return to their native river or hatchery as adults) of juvenile fish in the Strait of Georgia is identified as a central issue, with an up to 10x decline. Coastal rivers that empty directly into Pacific Ocean show no real trend in marine survival from 1970s (decline and partial recovery for steelhead). Trend lines for Salish Sea (Puget Sound and Strait of Georgia) rivers shows crash in marine survival from mid-1980s through 1990s, with no recovery:

- Coho – 75% reduction
- Chinook – 50% reduction
- Steelhead – 90% reduction, critically low populations

There are many factors impacting marine survival:

- Food availability is dependent on climate, weather, and seasonality. Temperature fluctuations over decades may affect food resources, with persistent warmer water since the 1980s.
- Shoreline and estuary development has not changed a lot during the period of decline since the 1980s, but there may be a lag in negative effects of habitat loss, sediment changes, pollution accumulation from pharmaceuticals, industrial and domestic chemicals, and cars.
- Diseases are being studied for possible impacts.
- Pinniped populations drive predation by seals, sea lions, and porpoises following the Marine Mammal Protection Act.
- Hatchery production effects are being studied. Hatcheries are longstanding factors, but maybe something has changed over time relative to predation or climate resilience.
- Dams do not directly affect marine survival, but reduce freshwater production of fish that could be offsetting negative marine impacts. Retaining water in dams may change the chemical or nutrient dynamics in marine environment.
- Other known changes in Salish Sea: decrease in cod, rockfish, forage fish, eelgrass and kelp beds, zooplanktons over the same time as increasing temperatures, phytoplankton blooms, and marine mammal populations.

Hypothesis-driven research by the Marine Survival Project focuses on prey availability, predation on salmon, and multiple factors including (disease, contaminants, hatchery management). Factors may have local or global drivers. Research in the Nisqually has focused on freshwater and estuary factors for fish health, including:

- Flame retardants detected in Nisqually juvenile steelhead well above levels where salmon become more susceptible to disease and have altered thyroid production. Working now to identify the sources.
- Native snail larvae parasite (affects steelhead kidneys) are high in Nisqually. Can be treated with formaldehyde in hatchery, but don't want to apply that to river. Planting conifers to provide shade and reduce temperature is a long-term solution.

- Odolith surveys show that fish survive better where there are undeveloped estuaries where they can rear and grow longer. Prey availability also affects smolt growth rate, which correlates to better marine survival. Forage fish production has strong relationship to Chinook growth rate. In Strait of Georgia, main prey source has shifted from fish to invertebrates, which are less nutrient rich and lead to lower growth. Important to foster forage fish production in nearshore marine environment. Climate change may cause disconnect between forage fish availability and salmon life stage needs. (Phytoplankton blooming earlier → earlier peak in invertebrates and forage fish production → late-entering hatchery fish may miss the food sources).
- Predator populations are significantly larger populations since 1970 Marine Mammal Protection Act. Survival Project has studied four key predators harbor seals, stellar and California sea lions, and SRWKs, looking at gut contents and abundance of predator types to determine proportion of Chinook removed by each predator. Harbor seals are eating far more juvenile fish – 1 million in 1970 to 7.8 million Chinook in 2015. (SRWKs eat the most biomass, but they eat adults). Harbor seals are removing several times more individual fish than killer whales and all fisheries combined. Probably higher, and most dominant factor, for steelhead as a proportion of population. Correlation between better steelhead survival and higher anchovy production, which create a buffer as an alternative prey resource for seals (may apply to Chinook and coho as well as providing an additional food source).

The Salish Sea Marine Survival Project is currently wrapping up research, with numerous upcoming publications. Data is being synthesized between US and Canadian partners. Results will be broadly communicated and incorporated into recovery plans and management documents. They hope to pilot forecasting and other tools that can help managers. Key findings include:

- Address trophic relationships in predation – transient killer whales feed on seals, could help suppress the population
- Improve infrastructure – river mouth in Nisqually, Hood Canal Bridge, Ballard Locks, which are hot spots for predation
- Adapt hatchery practices to address predation and climate-change driven food limitations by changing timing
- Restoring forage fish populations and habitat to feed and prey buffer
- Restore estuaries – very compelling data from Nisqually and elsewhere
- Address pollution
- Complete ecosystem modeling to identify most cost-effective management actions with biggest impacts
- 20% of recommendations for Orca Recovery Task Force came from Marine Survival Project Research.

*Discussion:*

Do events like the recent landslide in the upper Mashel harm salmon by introducing high amounts of sediment? - Glacial river salmon can handle very high sediment loads, but events like this can be harmful if it occludes spawning and rearing habitat and smother eggs.

What recommendations for shoreline management would benefit forage fish and salmon habitat? – Shoreline armoring should be avoided unless it's the only way to save a residence. State and counties could probably do more to encourage alternatives. New shoreline development has slowed down, but timelag impacts of existing armoring may be causing habitat degradation in habitat for juvenile salmon and forage fish spawning. Ideally would go beyond reducing new bulkheads and work to mitigate or restore existing bulkheads. Studies aren't showing significant evidence of impacts from geoduck aquaculture for juvenile salmon or food resources, unless it removes healthy eelgrass. More concerned about upper intertidal structures that cause erosion or remove feeder bluffs.

Is Puget Sound at carrying capacity for salmon based on Survival Project research? Could push in orca recovery for increased hatchery production hit a population ceiling? – Probably close to capacity in places, including mouths of Duwamish, Puyallup, and Lake Washington ship canal. In areas like Snohomish and Nisqually estuaries where dynamic habitat restoration is ongoing, data isn't in yet on the carrying capacity.

What are the issues being considered for managing seal predation relative to the dependence of Bigg's (transient) killer whales on them as prey? – Seal populations seem to be continuing to grow even with increase in presence of Bigg's whales most of the year in northern Puget Sound. Harbor seals were hunted near extinction thanks to bounties in mid-20<sup>th</sup> century, until the Marine Mammal Protection Act (1970) made it illegal to hunt them. Throughout most of history of human occupation, there was a stable relationship between people, forage fish, seals, and salmon. Oral histories of native peoples prior to 20<sup>th</sup> century prominently feature hunting of seals. Tribes are now asking for permission to institute seal removal hunts in US and Canada. Very sensitive topic. LLTK working on non-lethal mitigation measures, but full suite of measures needs to be on the table.

Survive the Sound is an online game to involve the public in steelhead survival issues. Data are collected on steelhead smolts tagged with an acoustic transmitter, and anyone can join a team, track fish, and see if they survive navigating the Puget Sound.

### **3. Committee Reports and Updates**

#### **Advisory Committee Reports:**

##### *Citizens Advisory Committee – Phyllis Farrell*

The CAC met by Zoom on Tuesday and discussed updates on legislative and Thurston County planning matters. Thurston County is considering expanding shoreline armoring from docks from 4 to 8 feet, which is a concern for Phyllis and others. Howard shared updates on complaints he has filed with FERC on the management of the Nisqually dams during the February 7. FERC is investigating and has requested detailed data from TPU for analysis. Members noted that county permitting for building in the floodplain is based on retrospective FEMA data from past floods, not on what is likely to happen in the future. It will be beneficial to have the results of FERC's investigation on the management of this flood event. The NRC is also interested in understanding the FEMA floodplain maps and how responsive they are to climate change.

*Chair Report – David Troutt*

The state and Tribes have reached an agreement in the annual salmon season setting process, which was conducted by video conferencing for the first time this year. It becomes more difficult to reach an agreement every year as there are fewer and fewer fish to allocate. Recreational and tribal fishing seasons are both constrained. There are some complaints from parts of the recreational fishing community, but the outcome is not due to a broken process: the decisions are very difficult because of declining fish. David noted that the state's rapid and robust response to COVID-19 shows that we can rise to the level of a crisis, and salmon are in crisis. David hopes to see salmon recovery addressed as a crisis when COVID is solved to avoid losing salmon and orca populations.

*Staff Report – Emily McCartan*

Streamflow restoration grants were given a 30-day extension until the end of April. The Nisqually Planning Unit endorsed seven proposals. As part of the Bureau of Reclamation WaterSMART grant to support the NRC's cooperative management strategy, Emily will be reaching out to NRC members to set up short interviews about what the NRC does effectively and areas for growth.

*Nisqually Land Trust – Joe Kane*

Transition planning has been challenged by COVID-19 but is moving forward under the new circumstances. Joe plans to stay until a successor executive director is in place. NLT's auction and conservation dinner was postponed to September 26 for now, and may be revisited. Most summer public events will likely be canceled. The auction funds 15% of NLT's operating budget. They have applied for a Payroll Protection Program loan, which may help cover the budget. Ongoing essential services include maintenance of restoration projects (tubing for this year's plantings). The Tribe's crew is shut down, so NLT staff are working hard to complete that contract. Several transactions are in process, nothing closing immediately.

*Nisqually River Education Project – Sheila Wilson*

With schools in upheaval, NREP is working to provide services for teachers for remote teaching and learning. Based on survey responses, teachers are most eager for professional development, and NREP is preparing to adapt teacher training programs for online delivery through the summer if necessary. North Thurston Public Schools has a goal of getting all 5<sup>th</sup> graders involved in water quality monitoring field trips next year and NREP is working with South Sound GREEN to expand accordingly. Maya has created a blog post with online activities for students, including resources similar to field trip lessons for cancelled programs. Internet access is a challenge for some students, including many from Wa He Lut. The Nisqually Tribe has provided a grant to bring internet to those families so they are able to access school resources.

*Nisqually River Foundation and Nisqually Community Forest – Justin Hall*

NRF staff are continuing to work for home (one contract employee with the Tribe is doing essential work at the hatchery). Assuming state and federal grantors continue to accommodate adaptations, NRF is in a fairly stable financial position through this year. In the long term, the likely shortages of state and federal funding and donations is a concern. The

Community Forest is working on the Clean Water Revolving Fund loan with Tribe. Harvest operations may not start soon because mills are about half shut down, and it's too early to know what the market impacts are.

#### *Salmon Recovery Program – Chris Ellings*

Seven projects are in review for salmon recovery grants. Some staff are working remotely and essential crew employees are assisting with projects on the reservation. Kyle Kautz, the forest manager, visited the site of the 2/7 Mashel landslide and collected drone footage. Chris shared several photos showing a significant debris flow on a recently harvested slope and formed a temporary dam across the Mashel. The river has broken through, but ponding is still visible upstream of the debris flow. These events happen naturally and in an intact system are important for maintaining habitat and large woody debris. This event, however, took place on clear-cut land, which can increase the frequency of slides and lacks the wood and organic material that would contribute over time to good habitat features in the river. Hancock (the landowner) has shared some of their mitigation strategies with the Tribe, which include planting with alder to stabilize the soil. The Tribe hopes to visit the site again and recommend additional mitigation measures. A planned meeting with DNR and the landowner has been postponed for now. The site was permitted legally through DNR regulations, but it was a steep slope prone to this kind of event if clearcut. The existing Forest and Fish regulations can only be changed through adaptive management, which is not very responsive due to the extremely high burden of technical proof needed to change. Adaptive management is also the first funding to be cut. Because the regulations are not sufficient to protect riparian forest function, the Nisqually strategy has been to purchase and manage the land outright, through the Land Trust, Tribe, and Community Forest. David is beginning to raise the issue of revising the Forest and Fish law, which will be a long-term discussion. Climate change was not part of the discussion when the law was created in the 1990s. The full impacts of this landslide are not known yet. There will be some legacy impact from sediment as it is released over time, and work will need to be done to protect the recovery investments made downstream.

#### **4. For the Good of the Order**

Pierce Conservation District has shifted to online outreach for K-12 and general public with video, Facebook Live, other activities.

Online events are scheduled for the 50<sup>th</sup> anniversary of Earth Day next week.

Updated Mount Rainier Geology Maps available at <https://www.nps.gov/articles/nps-geodiversity-atlas-mount-rainier-national-park-washington.htm>. Virtual Mount Rainier park tours are available at: <https://www.nps.gov/mora/learn/photosmultimedia/virtual-tour.htm>. The Park is actively working on scenario planning for COVID-19 to deal with the upcoming field season, staffing and operating levels.

The Salish Sea Ecosystem Conference is moving online and free, so people can see presentations of current research. Registration and archived presentations will be available at <https://wp.wvu.edu/salishseaconference/>.

The Refuge has been closed since March 26. Majority of staff are teleworking. NREP is working with Refuge education staff on virtual resources. A main concern behind the closure is volunteer exposure in the visitor center and education program, because most volunteers are over 70 and in high contact with the public. The Refuge will coordinate as possible with federal and state guidelines for reopening.

The NRF has made a collection of virtual backgrounds with photos of the watershed available at <https://drive.google.com/drive/u/0/folders/1SKg6PXnm7QyuBCy7z4cm2pyZMCaKFkhh>.

The meeting was adjourned at 12:05.

Next NRC meeting is scheduled for May 15. It will likely be held over Zoom and information will be circulated prior.

Stay home and stay healthy!