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COLUMBIA RIVER INTER TRIBAL FISH COMMISSION
TESTIMONY FOR THE FIELD HEARING OF THE
U. S. HOUSE OF REPRESENTATIVES
SELECT COMMITTEE ON THE CLIMATE CRISIS
August 3, 2022

Good morning, Chairwoman Kathy Castor and members of the Committee. My name is Aja DeCoteau. I am the executive director of the Columbia River Inter-Tribal Fish Commission (CRITFC), the fisheries technical and coordinating agency for the Confederated Tribes and Bands of the Yakama Nation, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Nez Perce Tribe. The treaty tribes are an integral part and partner of Columbia Basin fisheries co-management across the Columbia Basin and into the ocean where many of our aquatic resources migrate.

Over 20,000 CRITFC tribal members live within the Columbia River Basin. This 258,000-square-mile river basin encompasses large portions of the states of Washington, Oregon, and Idaho, and also reaches into Wyoming, Utah, Nevada, and the Canadian province of British Columbia. The ceded lands of the CRITFC member tribes cover 66,575 square miles, which is approximately one quarter of the entire basin.

Recognizing that this hearing's primary focus is coastal resilience in the face of climate change, I would like to describe our cultural connection to the First Foods – water, salmon, game, roots, berries. The culture and subsistence of tribal members revolve around the harvesting of these foods. Climate change impacts to the First Foods, particularly salmon, are expected to be dire. The tribes are doing all that they can to make the First Foods as resilient as possible.

Salmon, steelhead, and Pacific lamprey are dependent on cold streams and rivers. Climate change has imperiled many of these populations due to reduced winter snowfall, altered seasonal stream flow patterns, and increased water temperatures.

Salmon and Pacific lamprey have been cornerstones of tribal cultures for thousands of years. The Columbia River tribes are particularly reliant on salmon for their spiritual, economic, and nutritional sustenance. Our unique cultures and histories are intertwined with salmon, and we have considerable knowledge about the best approaches to preserve and replenish salmon. One example of our connection is expressed by the Confederated Tribes of the Umatilla Indian Reservation in their "First Foods" approach to natural resources planning by holistically managing the entire ecosystem each First Food requires, knowing, for example, that a river ecosystem that is healthy for salmon will also be healthy for all the other plants and animals that depend on it.

This intimate connection to the seasonal gathering of the First Foods puts tribal members in a unique position to witness climate change impacts. A survey conducted by CRITFC in 2015 found that many tribal members were "surprised at the extent and high rate of change occurring within their lifetimes and were concerned that climate change will result in "significant adverse impacts to tribal food security, cultural continuity, sovereignty, economic opportunities, ecosystem balance, human health, and environmental justice."

Tribal Climate Related Projects

In 1995, the tribes released Wy-Kan-Ush-Mi Wa-Kish-Wit, the "Spirit of the Salmon" restoration plan with the goal of "putting fish back in the rivers and restoring the watersheds where fish live." This plan takes a holistic approach to salmon restoration in the Columbia Basin: First, it emphasizes the importance of the entire watershed to well-functioning rivers and streams. Second, it combines multiple scientific fields — including fish biology, ecology, and genetics — with traditional tribal knowledge, understanding, and respect for the natural world. And third, it factors in healthy human communities as part of healthy landscapes. The plan was updated in 2013 with climate change impacts identified as a major factor that needs specific attention.

Implementing this plan, CRITFC assesses key impacts of climate change on the natural resources of our member tribes, with a focus on watershed and habitat conditions supporting salmon, steelhead, and lamprey. Integrated analyses of interactions between physical, biologic and socio-economic processes, and development of decision support tools has allowed diverse stakeholders to evaluate sustainable future adaptation, mitigation, and restoration strategies.

Our habitat restoration projects are designed to protect, enhance, and restore functional floodplain, channel, and watershed processes to provide sustainable and healthy habitat for anadromous fish. Over the last decade, our member tribes implemented projects that resulted in more than 5,000 miles of improved stream flow, 400 miles of improved stream complexity, reconnected over 2,000 acres of floodplain, and improved 15,000 acres of riparian vegetation. These projects have often been done in partnership with landowners and ranchers, local and state governments, and a number of federal agencies.

CRITFC's Acquisition of the Coastal Margin for Observation and Prediction (CMOP) Program

In order to strengthen the CRITFC tribes' engagement with the estuary and ocean habitat needs of salmon and lamprey, CRITFC assumed stewardship of CMOP, the Center for Coastal Margin Observation and Prediction, in 2020. With a field program based in Astoria and a modeling program based in Portland, CMOP is a nationally renowned ocean and estuary research program dedicated to further understanding the linkage between the Columbia River and the Pacific Ocean. CMOP uses remote sensors, models, and open data access to help stakeholders manage ecosystems, facilitate sustainable development, and protect lives and livelihoods in our changing environment.

Physical parameters such as salinity, temperature, water levels, and currents have been measured and recorded since 1996 and biogeochemical parameters such as chlorophyll, turbidity, nitrate, and dissolved oxygen since 2008. These measurements provide a record of variability and change, allowing the identification of developing climate change threats to critical coastal and estuary ecosystems. Thanks to a community funding proposal supported by Rep. Bonamici, CMOP is currently planning to incorporate ocean acidification monitoring within the estuary, allowing a better understanding of how this developing threat impacts the estuary, and starting a long-term monitoring of changes of this threat over time.

The long history of physical observations also provides a strong basis for testing and improving models of the estuary and ocean, either at CMOP or elsewhere. CMOP's models of the estuary allow short-term forecasts of conditions in the estuary, retrospective simulations of the past 20-30 years of estuary conditions, and simulations of potential scenarios, including sea level rise and changes in river discharge under climate change and hydro-system management decisions.

CMOP models have been used to evaluate habitat opportunity for juvenile salmon in the Columbia River estuary under different environmental conditions, and to improve understanding of the relationship between the Columbia River plume and juvenile salmon survival at ocean entry. With new funding from the community funding proposal, we are working to improve our models to better represent wetlands and to integrate stream flows from smaller tributaries to the estuary by integrating the NOAA National Water Model (NWM). By incorporating better representation of tidal wetlands and stream flows, the CMOP models will be better able to predict the impact of climate change on juvenile salmon habitat in the estuary. In addition to better representing wetland habitat, the integration of the NWM will allow CMOP models to simulate compound flooding events (when ocean storm surges and rain events cause flooding driven both by ocean conditions and rain runoff) and provide the capacity to support local efforts to build coastal resilience through nature-based protection against flooding, which may also potentially improve juvenile salmon habitat in the estuary.

CRITFC Energy Vision for the Columbia River Basin

CRITFC and its member tribes recognize that many of the threats that face salmon and lamprey are the result of energy production and consumption. This year, we released our latest Tribal Energy Vision. As the region and nation undergo an energy transition to renewable sources, the tribes wanted to ensure that our electric power system supports healthy and harvestable fish and wildlife populations, protects tribal treaty and cultural resources, and provides clean, reliable, and affordable electricity. The four broad goals of this vision are:

- Create a regional energy portfolio that protects and enhances environmental quality, treaty protected resources, and supports the restoration of Columbia Basin's fish and wildlife to healthy and harvestable population levels.
- Prevent new and reduce ongoing damage to Columbia River Basin resources, including fish, wildlife, water quality, and tribal cultural resources, by recognizing the relationships and interdependencies of natural and built systems including the Northwest's energy system.

- Provide increased protection for both fish and wildlife and utility customers against unanticipated events, such as drought, fire, and market aberrations while providing an adequate, economical, and reliable electric supply.
- Mitigate climate change impacts to protect Northwest ecosystems by replacing fossil-fuel electric generation and reducing the reliance on fossil-fuels for power, transportation, and other uses.

Climate Resilient Recommendations

CRITFC recommends that the Committee consider two specific strategies to help front-line communities that depend on large river systems to become more resilient in their response to climate change. The first of these is to develop federal flood policies and guidelines that recognize the benefits and environmental capital of properly functioning floodplains. The second is to protect and restore cold water refuge areas that shelter fish populations from climate extremes.

Floodplain Reconnection

Floodplain protection and restoration are essential strategies in limiting the impact of climate change. Well managed floodplains can reduce flooding, store and cool surface water, provide rearing habitat for fish, and create cold water refugia for migrating salmon. Yet over the last 150 years, huge areas of floodplain have been drained and cut off from their rivers. While the annual costs of flooding are rising, the pressures to build in flood-prone areas continues. Congress needs to support a shift in land use policies that recognize the benefits and environmental capital of properly functioning floodplains. Floodplain reconnection will provide resiliency to climate change impacts.

In 2016, CRITFC hosted a Future of Our Salmon Conference with the theme "Healthy Floodplains, Living Rivers" to understand how floodplains in the Columbia River mainstem and its tributaries can be resilient to anticipated climate change impacts (https://www.critfc.org/tribal-treaty-fishing-rights/policy-support/critfc-policy-workshops/future2016/). The Conference resulted in a call to action for the region's agencies, tribes, and communities to achieve culturally and physically resilient floodplains that acknowledge and benefit all values and needs. A significant outcome of the conference was an action framework and planning committee that would work for no net loss of floodplain habitat and would recommend floodplain enhancement actions and policies.

Protection and Restoration of Cold-Water Refuge Areas

A cold water refugium is an area that is persistently colder than adjacent areas, such as tributary mouths. Climate refugia can facilitate the survival of fish that are sensitive to changing environmental conditions by providing discrete zones of cool water rearing or holding habitat during periods of stressful summer mainstem water temperatures. As rivers continue to warm, cold water refugia will become more essential to the survival of native fish populations. Policies and legislation that prioritize protecting and increasing cold water refugia are needed. Restoration actions needed specifically for the Columbia River include reconstruction of river

confluence areas to eliminate shallows, replanting native vegetation, and increasing channel depths.

Working as Co-managers and Partners on Climate Resiliency

Tribes are disproportionately impacted by climate change due to our high dependence on the First Foods and relative vulnerability of our infrastructure. Yet tribes have been inequitably funded in natural resource and wildlife conservation.

Historically tribes have not had the resources or capacity to fully participate in policy development and access to forums where climate impact decisions occur. Stable, long-term funding streams are the greatest tool available to allow tribes to engage in direct climate impact decision-making to natural resources. This would enable us to bring our traditional ecological knowledge and contemporary science capacities to the management and policy tables for the shared benefit of tribal and non-tribal publics alike. The funding should have wide sideboards to address the diverse challenges we face and have predictable, manageable reporting requirements co-developed by the tribes. The funding should be on a recurring basis and without competition.

These recommendations will help ensure that the nation upholds its trust responsibility to Indian tribes by protecting the fish, wildlife, and other natural resources vital to our tribal cultures, communities, and livelihoods, and ensuring that tribes are meaningful participants in the nation's efforts to reach the net zero carbon pollution level by mid-century. By taking a leadership role in securing equitable support for tribes, you can help us ensure the future well-being of our tribal natural resources, health and economies as well as foster the capacity of the tribes to meaningfully contribute to the greater national effort to combat climate change.

URL Addresses:

1) https://www.critfc.org/tribal-treaty-fishing-rights/policy-support/critfc-policy-workshops/future2016/

2) CRITFC Energy Vision for the Columbia River Basin: https://critfc.org/energy-vision/