CLIMATE ADAPTATION BARRIERS AND NEEDS EXPERIENCED BY NORTHWEST COASTAL TRIBES

Key Findings from Tribal Listening Sessions

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CLIMATE IMPACTS GROUP

NCRC NORTHWEST CLIMATE RESILIENCE COLLABORATIVE
A NOAA CAP/RISA TEAM

AFFILIATED TRIBES OF NORTHWEST INDIANS

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Canoe Journey. Chas Jones, 2018

EXECUTIVE SUMMARY

Native American Tribes face a complex array of climate change threats to their communities' health, infrastructure, culture, and economies. The coasts of Oregon and Washington are home to over two dozen Tribal nations, each contending with climate impacts including sea level rise, ocean acidification, extreme heat events, increasing wildfire risk and declining snowpack. Coastal Tribes of Washington and Oregon have undertaken significant efforts to understand, prepare for and respond to these risks. Many have completed climate change vulnerability assessments and adaptation plans to guide their efforts, but face considerable obstacles in acting on those plans.

This report describes the climate adaptation barriers and unmet needs identified by participants in listening sessions with government staff, citizens, and elected officials from Northwest coastal Tribes in Washington and Oregon. For the purposes of this report, "Northwest coastal Tribes" refers to Tribes along the Pacific coast of Oregon and Washington, the Strait of Juan de Fuca and Puget Sound.

This report was prepared by the Tribal Coastal Resilience Portfolio of the Northwest Climate Resilience Collaborative, a National Oceanic and Atmospheric Administration Climate Adaptation Partnerships Program. The Tribal Coastal Resilience Portfolio seeks to assist Northwest coastal Tribes in their efforts to build resilience to climate change. As part of this work, we conducted Tribal listening sessions to better understand the state of Northwest coastal Tribes' climate adaptation efforts, and to elevate Tribes' experience of key barriers and needs which, if addressed, could help advance Tribal resilience.

Results from these listening sessions suggest Northwest coastal Tribes face significant barriers and unmet needs in realizing their adaptation goals, despite being leaders in climate adaptation. Key barriers and needs highlighted in these sessions focus around five key areas: funding; Tribal staff and workforce capacity; collaboration and partnerships; technical assistance and climate services; and communication, education, and outreach. Each is summarized in the table below and explored in greater detail throughout the report.

The barriers and needs described in this report corroborate and build upon the findings of previous national and regional assessments, while elevating the distinct challenges faced by Northwest coastal Tribes. While these findings do not fully represent the depth and breadth of these challenges and what is required to address them, we hope they will help build awareness among funders, policy makers, climate service providers and others to mobilize necessary action in support of the climate adaptation efforts of Northwest coastal Tribes.

SUMMARY OF

KEY BARRIERS AND NEEDS

FUNDING

Barrier: Northwest coastal Tribes face persistent funding barriers in addressing climate risks. These include insufficient funding relative to Tribal needs, rigid rules that make it difficult for Tribes to flexibly allocate funds as needed, strict qualification criteria that limit Tribal access to funds, short-term funding cycles that are disruptive to long-term staffing and project needs, and misalignment of funds with Tribal priorities.

Needs:

- A considerable increase in the amount of available funding to meet the scale of adaptation required by coastal Tribes.
- More generalized and flexible sources of funding to maximize Tribal autonomy and responsiveness in allocating funds and reduce administrative burdens.
- Fewer stringent qualification requirements, including less burdensome match or personnel requirements, to make funding more accessible to Tribes.
- More long-term funding to make applying for funding and supporting efforts associated with new funding, such as hiring staff, worth the effort and to minimize disruptions to adaptation activities due to a lack of funding continuity.
- Funding that is better aligned with Tribal priorities, rather than the priorities of funding entities, to support community-driven priorities and the incorporation of Indigenous Knowledges.

STAFF & WORKFORCE CAPACITY

Barrier: Most Northwest coastal Tribal governments do not have adequate and consistent staff capacity to address climate adaptation priorities.

Needs:

- Funding to hire additional Tribal staff to meet the level of capacity required for effective adaptation planning and implementation.
- Support for permanent staff positions to minimize disruptions to adaptation capacity and activities associated with frequent staff turnover.
- Dedicated climate resilience staff to provide necessary expertise and focus on climate issues and prevent Tribal staff time from being pulled from other vital government functions.
- Funding to develop affordable housing near Tribal administrative centers to support staff recruitment and retention.

PARTNERSHIPS & COLLABORATION

Barrier: Northwest coastal Tribes face numerous barriers in creating and maintaining effective partnerships with federal, state and local governments; universities; non-governmental organizations and other non-Tribal entities. Such partnerships are critical for bolstering Tribal adaptation efforts through leveraging collective capacity and resources.

Needs:

- Coordination among state and federal agencies to reduce the burden Tribes face in engaging with a wide range of disparate entities to respond to climate-related consultation requests and address adaptation needs.
- Transparent, government-to-government Tribal consultation processes that respect Tribal sovereignty while upholding the federal trust responsibility, federal reserved rights, treaty rights, and Tribal adaptation interests.
- Development of consistent, mutually agreed upon, free prior and informed consent protocols between non-Tribal partners and a given Tribe to reduce risks to Tribal information and community members.
- Partnering with Tribes and developing relationships before projects begin to help ensure Tribal values and priorities are incorporated into projects and collaborations from the outset.

TECHNICAL ASSISTANCE & CLIMATE SERVICES

Barrier: Insufficient technical assistance in the form of climate and other relevant expertise, services and data remains a significant barrier to climate adaptation for Northwest coastal Tribes.

Needs:

- Localized climate and environmental data and associated technical assistance to support Tribal climate adaptation decision-making.
- Technical expertise and services for a range of other, related fields (e.g., engineering, project management) to support Tribes' adaptation planning and implementation.
- Opportunities (e.g., funding and/or training) to build technical expertise and staff capacity internally among Tribal governments and citizens to ensure continuity of institutional knowledge and long-term capacity to address adaptation needs.

COMMUNICATION, EDUCATION AND OUTREACH

Barrier: Northwest coastal Tribes face numerous barriers in communicating their adaptation concerns, needs and priorities to both Tribal citizens and external audiences.

Needs:

- Enhanced mechanisms for Tribes to communicate climate impacts and adaptation information to engage and build support for adaptation within their jurisdictions, communities and areas of interest.
- Tribe-specific climate adaptation communication, outreach and education programs to increase community awareness and support of adaptation priorities.
- Effective communication among Northwest coastal Tribes around climate adaptation to drive regional adaptation efforts, leverage partnerships and increase support from Tribal citizens and external partners.
- Communication and education products that provide a common climate adaptation language to reduce potential for confusion and misinterpretation and increase understanding within and between Tribes and external partners.

INTRODUCTION

Tribal communities along Oregon's Pacific coast and Washington's Pacific coast and inland marine waters are particularly vulnerable to the increasing risks of climate change. Northwest coastal Tribes face a wide range of climate impacts including increased coastal flooding and erosion from sea level rise, declining snowpack, rising stream temperatures and reduced summer flows, extreme heat events, and larger and more frequent wildfires, among other risks (Mauger et al. 2015, Dalton and Fleishman 2021, Chang et al. 2023). These changes negatively affect the physical and mental health, livelihoods and economies, environmental quality, cultural continuity and other contributors of well-being for Tribal communities (Whyte et al. 2023). They also occur amidst ongoing injustices and environmental changes since colonization that increase the severity of climate disruption experienced by Tribes while reducing their capacity to respond (Whyte et al. 2023). Despite these challenges, Northwest coastal Tribes are recognized as leaders in climate adaptation (Norton-Smith et al. 2016, Ruckleshaus Center 2017)[1], but face significant barriers in meeting their resilience goals.

Several existing reports look at the status of climate adaptation among Tribes, including the barriers and unmet needs that challenge their resilience efforts. These reports include the Bureau of Indian Affairs (BIA) Branch of Tribal Climate Resilience Regional Assessment Report (Bureau of Indian Affairs 2022), The Status of Tribes and Climate Change Report (STACCWG 2021), the National Climate Assessment (Whyte et al. 2023), and The Unmet Needs of Environmentally Threatened Alaska Native Villages (Alaska Native Tribal Health Consortium 2024), among others. This report seeks to add additional, local context to previous findings and recommendations to highlight the specific adaptation challenges and needs faced by Northwest coastal Tribes.

This report identifies key barriers and needs which, if addressed, could help catalyze Northwest coastal Tribes' efforts to adapt to climate change. These findings are informed by semi-structured listening sessions with Tribal staff, citizens, and elected officials from Tribal Nations on the coasts of Oregon and Washington, including the Pacific coast, the Strait of Juan de Fuca, and the Puget Sound, collectively referred to throughout this document as "Northwest coastal Tribes."[2] We conducted a total of six listening sessions, which included 40 participants representing 13 Northwest coastal Tribes (Figure 1). Listening session methodology, including protocols of free, prior and informed consent, can be found in Appendix B. Key findings from listening sessions, along with additional context from earlier assessments and Tribal climate reports, are described in detail in the sections below.

This report will be shared with Northwest coastal Tribes and other federal, state, academic and nongovernmental entities to inform adaptation planning and implementation efforts, and to help guide funding, policy, technical services, and other activities to better support the climate resilience of Northwest coastal Tribes. While our findings do not fully represent the depth and breadth of their adaptation challenges and what is required to address them, we hope they will build upon previous assessments to elevate the voices of Northwest coastal Tribes as they work to advance the climate resilience of their communities.

1 Climate adaptation is "the process of adjustment to actual or expected climate and its effects to moderate harm or exploit beneficial opportunities." (Grade et al. 2023)

2 The authors of this report recognize that the ancestral lands of Tribes throughout the region reach much farther than the scope of this report and acknowledge the many connections Tribes throughout the region draw to coastal areas and resources, irrespective of the locations of present-day Tribal reservation lands.

Figure 1. Federally recognized Tribes within the region of interest for this report (the Pacific coast of Oregon and Washington as well as the inland marine waters of Washington). Points denote Tribes' administrative centers. Filled blue points indicate Tribes represented in listening sessions by citizens, staff, and/or elected officials.

STATUS OF

CLIMATE ADAPTATION AMONG NORTHWEST COASTAL TRIBES

In this section, we briefly review Northwest coastal Tribes' climate adaptation efforts to-date and share listening session reflections on factors contributing to their adaptation successes.

INSIGHTS FROM PREVIOUS ASSESSMENTS AND TRIBAL DOCUMENTS

Northwest coastal Tribes are recognized as leaders in responding to the impacts of climate and other environmental change (Norton-Smith et al. 2016, Ruckleshaus Center 2017). For many Northwest coastal Tribes, early climate adaptation efforts have centered around community planning, hazard mitigation plans, and climate vulnerability assessments and adaptation plans (Bureau of Indian Affairs 2022). These assessment and planning efforts have helped Northwest coastal Tribes prioritize their values and interests in a changing future and identify needs related to funding, capacity and technical assistance that can support their implementation of adaptation actions.

We identified 12 Northwest coastal Tribes with publicly available climate change vulnerability assessments, six with publicly available climate adaptation plans, and 22 with other publicly available, climate-related documents, including natural resource plans, hazard mitigation plans, clean energy development assessments, and other relevant environmental reports (see Appendix E for a more comprehensive list of publicly available documents). Many of these documents can be found via the Tribal Climate Change Guide[3] and the Tribal Resilience Action Database.[4] Notably, not all Tribes within the project area share such documents publicly, likely resulting in an underestimate of the climate planning efforts of Northwest coastal Tribes to-date. Additionally, many Tribal adaptation efforts are communicated to the public via methods other than formal documents, including StoryMaps, presentations, interviews and educational websites. Together, these various products illustrate the extensive efforts Northwest coastal Tribes have undertaken to support and communicate climate resilience efforts within their communities. Vulnerability assessments, adaptation plans and other climate-related planning documents by Northwest coastal Tribes are often centered around a set of identified areas of concern, such as public health, species and habitats, ocean acidification, forestry, water quality and availability, and sea level rise. To support their implementation, climate mainstreaming – the systemic integration of climate change considerations into an institution's operations, planning, and programmatic goals – has been adopted by many Northwest coastal Tribal governments (Bureau of Indian Affairs 2022). Northwest coastal Tribes have also taken a wide range of actions to implement their adaptation priorities, including infrastructure retrofit and relocation, habitat restoration, and community and economic development (Ruckleshaus Center 2017, Bureau of Indian Affairs 2022, Whyte et al. 2023). Tribal climate adaptation may also take on other forms that draw upon Indigenous Knowledges and do not adhere to Western frameworks of planning and management (Whyte et al. 2023).

LISTENING SESSION REFLECTIONS ON TRIBAL ADAPTATION STRENGTHS AND SUCCESSES

Listening session participants shared many viewpoints regarding the status of climate change adaptation among Northwest coastal Tribes. These viewpoints included perceived strengths, barriers, needs, and challenges and are visually reflected in Figure 2. In this section, we focus on perceived strengths in the climate adaptation efforts of Northwest coastal Tribes to-date.

3 https://tribalclimateguide.uoregon.edu/adaptation-plans

4 https://tribalresilienceactions.org/plans/

Figure 2. Common terms shared during the six listening sessions. Larger font sizes indicate terms used more frequently than those with smaller font sizes. Terms included in discussion prompts (Tribes, climate change, adaptation, barriers, needs) have been removed to emphasize participants' responses.

STRENGTHS RELATED TO TRIBAL LEADERSHIP

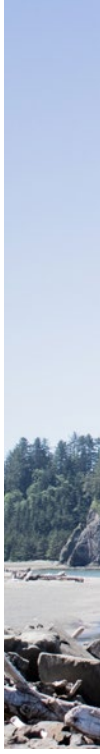
Throughout listening sessions, numerous Tribal citizens and staff cited Tribal leadership as a driving force for early action on climate change adaptation within their Tribe. Climate leadership was observed from members of Tribal councils, Tribal government staff, or Tribal youth or other community members. Tribal leaders were described by participants as playing a critical role in identifying topics such as natural resources, community health, or natural hazards that intersected with climate change and outlining steps to identify and address potential climate change-related risks and impacts. Leaders in this space also advocated for capacity and resources to help address climate adaptation priorities. As one listening session participant shared:

> "The Tribe has had consistent leadership, Tribal leadership and staff leadership, who have been thinking about the impacts of climate change for many decades."
>
> **ROBERT KNAPP**
> Environmental Planning Manager and Climate Resilience Lead, Jamestown S'Klallam Tribe

SUCCESS IN SECURING EXTERNAL FUNDING

Northwest coastal Tribal governments have successfully pursued numerous funding opportunities to advance adaptation efforts. Federal and state climate adaptation funding opportunities were often identified by listening session participants as a key contributor to advancing climate resilience and adaptation efforts. Listening session participants, as well as Tribal documents and reports, suggest Northwest coastal Tribes have and continue to direct grant funds to activities such as vulnerability assessment and adaptation planning, habitat restoration, land acquisition, and infrastructure relocation. Existing funding sources from the Environmental Protection Agency, the Washington state legislature, the BIA Tribal Climate Resilience Program, and the National Fish and Wildlife Foundation were identified in listening sessions as having been particularly important for advancing climate resilience actions for their Tribe. Some Northwest coastal Tribes have also been successful in accessing newly available funding from the Bipartisan Infrastructure Law and Inflation Reduction Act, as shared by this listening session participant:

> "We just got some infrastructure money for 14 homes... We got a new fire hall department going up there and the resiliency center... And now we're on a 45-day timeline to get an evacuation trail from our lower village up to the highlands where the resiliency center is going to be."
>
> **BERNARD AFTERBUFFALO, JR.**
> Councilman, Hoh Tribal Business Committee, Hoh Tribe



SUCCESS IN MAINSTREAMING CLIMATE ACTION ACROSS TRIBAL GOVERNMENT

Mainstreaming of climate action within departments has allowed Northwest coastal Tribal governments to establish a portfolio of programs that consider climate change within their operations and programmatic goals. Examples of such Tribal government programs shared in listening sessions include climate-focused habitat restoration activities; land transfers to facilitate relocation of Tribal infrastructure; and climate-related community health efforts such as clean air and water programs, extreme weather shelters and response protocols, or food sovereignty initiatives. Long-term consistency of programs and cross-departmental consideration of climate impacts were also cited as key components to effectively advance climate adaptation, as reflected by this listening session participant:

> "We're under efforts right now with the planning department, government affairs and natural resources, on working on coastal managed retreat. And that's tackling also septic systems and the pollution impacts that we see."
>
> **AARON JONES**
> Interim Natural and Cultural Resources Director, Tulalip Tribes

> "The Tribe was involved in early climate adaptation planning processes [2011-2013], and our Plan was used as a model for the creation of a template by the Central Council Tlingit & Haida. Allowing other Tribes and non-Tribal organizations to build their own plans – I think that's important to share what we have learned and learn from others."
>
> **ROBERT KNAPP**
> Environmental Planning Manager and Climate Resilience Lead, Jamestown S'Klallam Tribe

SUCCESS IN BUILDING AND MAINTAINING PARTNERSHIPS

Insights shared at listening sessions suggest Northwest coastal Tribes view partnerships at all levels (i.e., local, county, state, federal, intertribal, and non-governmental) as a key strength in Tribal climate adaptation efforts to-date. Listening session participants frequently cited the importance of building and maintaining partnerships to advance their Tribes' climate resilience efforts. As one listening session participant noted:

> "We have multiple partners right now working with us to develop solid foundations and policy and it's just going to make things better once we do finally get funding to move [the community] up the hill."
>
> **JAMIE JUDKINS**
> Citizen, Shoalwater Bay Indian Tribe

SUCCESS IN COMMUNITY-TO-COMMUNITY KNOWLEDGE TRANSFER

Listening session participants noted that Tribes' climate adaptation efforts have not only benefited their own communities, but have provided useful models for Tribes in other areas to learn from and replicate, as described by this listening session participant:

STRENGTHS RELATED TO STAFF CAPACITY

Listening session participants highlighted the dedication of Tribal staff as vital to establishing and advancing climate programs and activities. In some cases, Tribes felt they also had adequate staff support for their resilience efforts, as noted by this listening session participant:

> "[Our Natural and Cultural Resources Department] has over 100 staff, so we have a lot of capacity just to make sure that we can tackle some of these issues with the appropriate expert analysis that we need."
>
> **AARON JONES**
> Interim Natural and Cultural Resources Director, Tulalip Tribes

While Northwest coastal Tribes have had many successes in their efforts to build climate resilience, the degree of climate preparedness varies greatly among Tribes, and significant barriers remain even for those most resourced and advanced in their efforts. Importantly, many of the same items identified as contributing to adaptation success – particularly funding, partnerships, communications, and staff capacity – were also among the leading barriers identified by listening session participants. In the following sections, we describe these barriers as well as key needs for addressing them.

CLIMATE ADAPTATION BARRIERS AND NEEDS

AMONG NORTHWEST COASTAL TRIBES

The following sections draw from the experiences of listening session participants to describe key barriers and needs which, if addressed, could help catalyze the climate adaptation efforts of Northwest coastal Tribes. Results of earlier assessments are also referenced where helpful for providing additional context.

FUNDING

While federal and state grants support Northwest coastal Tribes in their climate resilience and adaptation efforts, persistent funding barriers remain, particularly the lack of sufficient funding that is both generalized and flexible, allowing Tribes greater autonomy over how funds are used. Additional barriers include stringent qualification requirements, burdensome match or personnel requirements, and funding misalignment with Tribal priorities. Where funding opportunities and Tribal adaptation priorities do align, funding opportunities can often be piecemeal or too short-term to holistically address Tribal priorities.

Federal and state climate adaptation funding was often identified by listening session participants as key to advancing climate resilience and adaptation efforts, but available funding is nowhere near the levels required to meaningfully address climate risks faced by Northwest coastal Tribes. A 2020 BIA report estimates that, for Tribes within the lower 48 states, approximately $1.9 billion will be needed over the next 50 years for infrastructure-related climate adaptation alone, including a mix of protect-in-place and relocation efforts (Bureau of Indian Affairs 2020). The BIA also estimates that of the nearly $13 billion in federally-appropriated resources at that time for infrastructure retrofit and improvement, only $500 million was designated exclusively for Tribes (Bureau of Indian Affairs 2020). While the Bipartisan Infrastructure Law and Inflation Reduction Act have delivered millions in grants to Northwest coastal Tribes to support relocation and other resilience projects, a significant funding gap remains. One listening session participant highlighted the immense scale of funding required by their Tribe:

> “Some of the challenges that we face on the coast are due to the magnitude of some of the projects that we need to undertake. For example, we are in the midst of relocating our two main Quinault villages on the Washington coast. That’s a multi-million-dollar, multi-agency effort. We’ve had to approach that on a piecemeal basis. It’s very difficult to integrate our plans and priorities for village relocation with those of the agencies and constraints on available funding.”
>
> **GARY MORISHIMA**
> Natural Resources Technical Advisor, Quinault Indian Nation

Tribes have thus had to be diligent in pursuing state and federal funding opportunities to sustain their climate adaptation initiatives. But participants also noted that because most resilience funding opportunities are short-term, relatively small and narrowly focused (i.e., the funds can only be used for very specific purposes), tribes often need to piece together multiple funding sources to complete a single climate adaptation project. These funding constraints are highlighted by the following listening session participant:

> "We were losing six ships a year before the marina was built, but it took us to get beyond the Army Corps 1:1 cost ratio to even get started on that. We were able to piece together 15 different funders, dealt with that thing together, and get [the marina] built. So as a Tribe I think our strength is being able to work with all those different funding agencies because a lot of them will always say 'we can't pay for the whole thing' or 'we can pay for this part'. So having us find out what part they can pay for, then having to figure out how to get it into a quilt that we can put together to make the marina happen."
>
> **ANONYMOUS**
> Listening Session Participant

Such narrowly defined, short-term funding opportunities also present a barrier to climate adaptation approaches that address multiple, overlapping needs in a holistic manner. Existing funding structures often silo these issues, preventing Tribes from addressing them in community-defined and holistic ways. This dynamic encourages Tribes to pursue funding opportunistically, even if a funder's priorities do not align with top Tribal adaptation priorities. Again, this often results in Tribes needing to piecemeal multiple funding sources together, which can create fiscal gaps in large infrastructure projects, as illustrated by one listening session participant:

> "I was thinking about the funding barriers that we have. We're trying to piecemeal all these different grants together. One [grant] is to build this house, but it's only for low-income people. Then you've got a different agency grant that can build the road but it can't take the infrastructure to that house."
>
> **JAMIE JUDKINS**
> Citizen, Shoalwater Bay Indian Tribe

This piecemeal approach to adaptation funding places a large burden on Tribes in terms of grant writing, administration and reporting, and in working to align disparate funding sources with Tribal priorities, as reflected by this listening session participant:

> "The challenge that we are constantly facing is how do we align our Tribal priorities with those of the agencies that are providing the funding? Their priorities often don't coincide with ours. And when we are forced to deal with a lot of soft money, there is a tremendous amount of overhead that is incurred in terms of securing and managing those kinds of resources and putting them together in a way that is going to make sense in terms of accomplishing the overall objectives that we're hoping to meet."
>
> **GARY MORISHIMA**
> Natural Resources Technical Advisor, Quinault Indian Nation

Listening session participants also noted that while significant funds have been made available to support Tribal adaptation planning, funding for implementation, which is far more costly, remains limited. Many Northwest coastal Tribes have completed climate change vulnerability assessments, adaptation plans and other climate planning documents to understand their climate risks and guide their adaptation efforts (Appendix E), often supported by BIA Tribal Climate Resilience grants (Bureau of Indian Affairs 2022). However, insufficient funding for implementation has prevented Tribes from acting on these plans, in whole or in part (Bureau of Indian Affairs 2022). As one listening session participants shared:

> “There’s a lot of funding for plans, not a lot of funding for infrastructure, ever...we just don’t have the funding for infrastructure to address any of it.”
>
> **ANDREW STROBEL**
> Director of Planning and Land Use,
> Puyallup Tribe of Indians

Implementation costs for coastal Tribes are amplified by limited land availability for relocation. The remote and often rugged geography of many Northwest coastal Tribes’ lands result in limited options for relocating infrastructure away from coasts. Yet, financial as well as legal and jurisdictional barriers make it difficult for Tribes to acquire more land. Infrastructure relocation often accompanies other important considerations for Tribes such as the need for maintaining physical access to culturally important sites, adequate time and funding to support community-led planning, funding for continued maintenance of existing infrastructure during transition periods, and financial assistance to residents and property owners to support financial obligations (i.e., mortgages and other debt instruments) that will be impacted by relocation processes, among many other factors (Bureau of Indian Affairs 2020, Maldonado et al. 2020). These issues were highlighted by several listening session participants, with one participant noting:

> “If you just looked at the total amount of Tribal land, you’d say ‘Well there’s lots of places that the Tribe can move’, but if you take away all the places that are sacred or culturally significant, or habitat for important species, or landslide hazard, or some other hazard, the options are diminished. We must also be careful not to move away from one hazard into another. How bad would it be if we move away from the shoreline, and we put ourselves in harm’s way for fire?”
>
> **ROBERT KNAPP**
> Environmental Planning Manager and
> Climate Resilience Lead, Jamestown S’Klallam Tribe

Despite the need for collaboration to address relocation and other adaptation challenges, input from listening session participants suggests the federal competitive grant process is a significant roadblock to collaborative adaptation approaches. Competitive funding opportunities are often awarded to only a few Tribal applicants in a funding cycle. Grant awardees often share adjacent lands and coastlines with other Tribes pursuing similar adaptation work, but competitive funding regimes ignore the interconnectedness of Tribal adaptation needs and efforts across geographic regions. Listening session participants suggested alternative grant configurations, such as block grants awarded to a group of Tribes, that could help address this while also providing greater flexibility in how resources are allocated.

Listening session participants also identified the complex, capital-intensive process of securing competitive grants as a driver of inequity in adaptation funding. Barriers associated with applying for, receiving, and administering funding are intricately tied to Tribal government staff capacity, which varies widely across Northwest coastal Tribes and can lead to barriers when competing for funds with non-Tribal organizations. Some funding requirements – such as matching funds or other forms of in-kind match, such as staff time and technical personnel – can systematically leave out Tribal Nations with less access to financial resources or credit. Additionally, Tribes without federal recognition do not qualify for many funding opportunities. Federally recognized Tribes are identified as possessing certain inherent rights of self-government, and the federal government is obligated to provide certain federal benefits, services, and protections to them because of their special relationship with the United States (Bureau of Indian Affairs 2022). Thus, under-resourced Tribal Nations, including those that lack federal recognition, are generally found to be at a disadvantage in applying to, or excluded entirely from, federally funded climate adaptation programs (STACCWG 2021). As one listening session participant suggests, granting processes that provide funds for proposal preparation may help address such barriers for under-resourced Tribes:

> "I think the biggest challenge is, folks have mentioned capacity, but all this funding being dumped down, it's not being front loaded to give additional capacity to potential [applicants]... A letter of intent would be nice. If a letter of intent was given and then if you're approached by a federal agency, that comes with some type of cost advance to expand capacity to actually go where you need it the most. It's hard to hunt for funds if you don't have capacity. Or bring in partners, and what if your priorities don't align, what if your priorities aren't completely fleshed out amongst the group, how can you then step together to then pursue opportunities. And so, it's just addressing capacity on the front end, not the back end when you're awarded funds. I think more of that is needed."
>
> **ANONYMOUS**
> Listening Session Participant

Together, listening session responses and earlier assessments demonstrate that the existing top-down, grant-based approach to funding significantly influences and limits which actions Tribes are able to take. This is turn negatively influences the ways in which Tribes exercise their sovereignty and self-determination and potentially inhibits the use of Indigenous Knowledge that could inform Tribal climate adaptation approaches. As one listening participant shared:

> "Figuring out some way for the federal government to meet its trust responsibilities to the Tribes by providing ongoing programmatic funding... Trying to do projects by piecing together grants that all have different requirements and different strings attached, without staff capacity is a challenge. If the Tribe knew if it was going to get funding for the next 20 years to operate a program and to exercise self-determination and self-governance, then it would be much easier to be able to build and maintain staff capacity to implement those other projects."
>
> **ROBERT KNAPP**
> Environmental Planning Manager and Climate Resilience Lead, Jamestown S'Klallam Tribe

The STACCWG Report (2021) makes similar findings and recommends modifying funding mechanisms to better reflect the unique needs of Tribes, including increased coordination among federal departments and programs so Tribes may access financial resources more efficiently. The Unmet Needs of Environmentally Threatened Alaska Native Villages report (Native Tribal Health Consortium 2024) recommends Congress provide a single, dedicated funding source to be distributed among Tribes based on level of risk or, alternatively, dedicated funding to multiple agencies to collaborate and fund projects from a common priority list. Self-determination (i.e., 638[5]) contracts or compacts have also been suggested as an alternative funding mechanism that could offer additional flexibility in the use of resilience funds while furthering Tribal sovereignty and self-determination (Bureau of Indian Affairs 2022). Ultimately, findings from listening sessions and previous assessments suggest a need to significantly rework the federal funding model for Tribal adaptation to ensure coordinated provision of large, long-term, flexible funding sources that meet the scale of action required and align with Tribal priorities.

5 The Indian Self-Determination and Education Assistance Act of 1975 (P.L. 93-638), gave Tribes the authority to contract with the federal government (i.e., 638 contracts or compacts) to receive funds directly to plan and administer certain programs, functions, services, and activities traditionally provided by the federal government. For more information, see https://crsreports.congress.gov/product/pdf/IF/IF11877.

STAFF AND WORKFORCE CAPACITY

Northwest coastal Tribal governments lack adequate staff for addressing their climate adaptation priorities. Barriers to sufficient staff capacity include short-term grant funding for positions, which drives high staff turnover and absorbs Tribal staff time in grant writing and reporting, and chronic housing shortages that limit staff recruitment and retention.

Northwest coastal Tribes generally do not have sufficient Tribal government staff capacity to address their climate adaptation priorities. Listening session participants attributed staffing challenges to several underlying drivers, including the lack of long-term, reliable funding to support permanent staff positions and the limited availability of affordable housing to attract and retain staff.

Listening session participants noted that Northwest coastal Tribes must often secure funding for staff positions through grants, many of which only provision funding for personnel for project-specific needs or provide funding for limited-term staff. This can drive high staff turnover rates that limit the effectiveness of Tribes' adaptation efforts. Earlier assessments have also identified limited-term positions as a significant challenge to the climate adaptation efforts of Northwest Tribes, with knowledge gaps and lost relationships identified as the main challenges associated with staff turnover (Bureau of Indian Affairs 2022). Listening session participants thus identified a need for long-term funding to support permanent staff positions to minimize the disruptions to adaptation capacity and activities caused by frequent staff turnover.

Reliance on short-term grants to fund staff positions poses an additional barrier to adaptation by redirecting available capacity toward constant grant writing and reporting. Listening session participants reflected that without dedicated staff (i.e., grant writers and administrators) to pursue funding for additional staff positions, other Tribal government departments are burdened with this task, taking away key capacity from Tribal priorities, including climate adaptation. As the BIA assessment similarly observed, "with a short performance period, it would become this individual's job just to keep their job," in turn reducing the capacity of staff to engage in actual adaptation-related work (Bureau of Indian Affairs 2022). This can create a negative feedback loop in which Tribal governments that require additional staff to address climate adaptation priorities must first use the time of existing staff for grant writing that would otherwise be engaged more directly in adaptation work. Thus, climate change adaptation priorities that from the outset could only be partially addressed by Tribal governments are limited even further due to the need for staff to secure adequate capacity before any direct climate actions can be taken. Listening session reflections regarding this challenge included the following:

> "There's also this endless cycle of grants that we're always applying for. You know, we tried to get a grant writer, we have an open grant writer position, it's been open for, I think eight months, and nobody wants to take it. And so, the biological staff is applying for grants and reporting grants and that's all we're doing. We're not doing biology. We're just doing grant writing and grant reporting over and over and over again. So, a steady funding source with less strain, less reporting...would be really helpful."
>
> **ANONYMOUS**
> Listening Session participant

Tribes thus require a significant increase in reliable, long-term funding to support existing staff and hire the additional staff needed to support adaptation planning and implementation, as well as dedicated grant-writing and administration positions.

Listening session participants also highlighted the need for dedicated staff focused on Tribal resilience efforts. While such positions exist among some Northwest coastal Tribes, many still lack such staff and the valuable expertise and capacity they provide. Additionally, the lack of dedicated resilience personnel can further redirect staff time away from other important government functions. As one listening session participant noted:

> "We don't even have a climate person right, so it's kind of shared with environmental and fisheries [departments]. They're just whoever is free for it – that's who it is. You know, whose workload is the smallest gets it sometimes and so I can imagine that's how it is for most tribes."
>
> **GLENN ELLIS, JR.**
> Tribal council member, Makah Tribe

The difficulty in funding, recruiting and retaining qualified resilience staff thus often leads Tribes to seek climate expertise externally, as noted by this listening session participant:

> "One of the issues that we're trying to wrestle with right now is staffing. How do you get that expertise, or how do you get access to it? Everybody is facing staffing challenges right now in terms of recruiting and retaining qualified staff. One of the difficulties is because of Tribal lack of taxing authorities and the ability to generate substantial revenue of their own. They are placed in a position where it's very difficult to be competitive and to be able to not only attract, but retain the qualified professionals. That puts Tribes at the mercy of contractors or academic institutions with necessary expertise."
>
> **GARY MORISHIMA**
> Natural Resources Technical Advisor, Quinault Indian Nation

Despite the availability of external expertise from university, government and private sector climate service providers, listening session participants expressed a preference for building climate capacity internally within Tribal government staff. Needs associated with this preference are described in further detail in the Technical Assistance and Climate Services section below.

Barriers in recruiting and retaining staff were cited in listening sessions as being due not only to difficulty in funding competitive salaries, but also to the remote location and limited housing around Northwest coastal Tribal offices. Recent, dramatic rises in the cost of living in many rural Northwest areas only add to existing staff and capacity barriers and may act to further drive turnover of Tribal staff. As one listening session participant noted:

> "There's simply no housing available. We have had several people we've offered jobs to end up backing out because they can't find housing...until that's fixed, no amount of money that we throw at the program is going to help, because we don't have places for people to live."
>
> **ANONYMOUS**
> Listening Session Participant

The need for affordable housing was additionally cited in listening sessions as important for bringing in contractors to assist with infrastructure relocation projects. Addressing Tribes' staffing needs around adaptation will thus also require financial support to develop affordable housing near Tribal administrative centers.

PARTNERSHIPS AND COLLABORATION

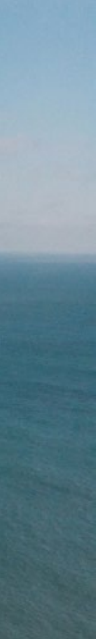
Effective and equitable climate adaptation for Northwest coastal Tribes requires collaborative partnerships with federal, state, local, nongovernmental and private entities that leverage collective capacities and resources to support Tribal adaptation planning and implementation. Successful federal and state partnerships with Tribes are built on transparent, government-to-government Tribal consultation processes respectful of Tribal sovereignty that further uphold the federal trust responsibility, federal reserved rights, treaty rights, and Tribal adaptation interests. For a wide range of partners, an understanding of Tribal values and adherence to ethical principles such as free, prior and informed consent can form the basis for effective relationships built on trust, reciprocity and respect for Tribal sovereignty.

Listening session participants cited partnerships with Tribal and non-Tribal organizations and agencies as key to successful Tribal climate adaptation and resilience efforts. Partnerships with entities outside of Tribal governments can greatly improve the depth and breadth of capacity and resources available for climate adaptation work. However, while some strong partnerships with non-tribal organizations exist among Northwest coastal Tribes, listening session participants identified several notable barriers to building and maintaining the adaptation partnerships they require.

One barrier Tribes face in building successful adaptation partnerships is access to partners themselves. For more rural Tribes on the Northwest coast, remote locations can limit interactions with state and federal agency decision-makers. Notably, the wide-spread adoption of video conferencing during the early years of the COVID-19 pandemic reduced this geographic barrier for some Tribes. One listening session participant noted the way normalization of this type of communication facilitated greater opportunities to connect with partners:

> “The silver lining on COVID, if you can put a silver lining to the horrible event that is still going on, is for a remote Tribe like Shoalwater, we were able to connect more through Zoom with our federal partners. We had many more meetings, many more opportunities to tell the story to gain interest.”
>
> **CYNTHIA TOOP**
> Grant Writer, Shoalwater Bay Indian Tribe

At the same time, Northwest coastal Tribes are experiencing increasing requests for partnership from state and federal agencies, non-governmental organizations, corporations and other entities as regional climate adaptation efforts accelerate (along with climate change mitigation efforts such as renewable energy development projects). This rapidly growing interest carries both opportunities and risks, elevating the need for consistent, trustworthy partners. One listening session participant shared that their Tribe could use assistance vetting potential partners as funding sources open new possibilities for collaboration:



> "The influx of all the funding that is now becoming available to Tribal communities has two edges to it. On the one hand it provides additional resources. But on the other hand there are a lot of folks coming out of the woodwork that you can't be sure you can trust. So, one of the things that I think that the universities and some of the other entities could really help Tribal communities is to do some vetting to find trusted partners that are really going to act as fiduciaries, making sure that what their recommendations are in the best interest of the Tribe, and not in their own interests. There's an awful lot of misinformation or disinformation that we have to contend with and try to sort through. We often don't have access to the kind of expertise that's necessary to enable us to evaluate claims or assertions that are being made in the timeframe that we have available to make our decisions."
>
> **GARY MORISHIMA**
> Natural Resources Technical Advisor, Quinault Indian Nation

Listening session participants also identified a need for greater coordination among partners, including federal and state agencies, local governments, universities, and nongovernmental organizations, as well as among Tribes. Listening session participants expressed frustration at the lack of coordination at the federal level, in particular, where the response to aiding climate adaptation efforts is fragmented across jurisdictions and agencies (Shi & Moser 2021). This leads to an increased burden on Tribes to coordinate partnerships, identify and pursue funding opportunities, and field consultation requests from multiple agencies. Individual federal and state agency requests for consultation around adaptation or renewable energy projects, oftentimes for the same proposed project, were highlighted in listening sessions as posing a significant strain on Tribal government resources. Greater coordination among non-Tribal entities, especially federal and state agencies, could thus help streamline consultation processes and build more effective adaptation partnerships.

Misunderstandings of Tribal consultation processes were also cited by listening session participants as a detractor from relationship building with federal and state agencies. Tribal consultation processes vary by each individual Tribe in the Northwest, and can depend on the topic at hand, as well as Tribal leadership's consultation preferences at a given time. Thus, a tailored approach to each sovereign Tribal government is required of agency partners. Moreover, listening session participants noted that codifying consultation practices for agencies, while potentially helpful, may limit changes to consultation processes Tribes may wish to make in the future. However, as one listening session participant shared:

> "I think it's hard for them [external partners] too though, because one thing I've witnessed is even with our council – which has changed every year, the six years I've been here – someone new has been on every election and so it's completely different than it was when I first started. And it's the same for the agencies too you know, they change staff. But even if we had the same people, there's a couple of the same people that have been there a long time. And the staffers at some of the agencies have been there a long time. But we consult differently every time."
>
> **ANNETTE BRYAN**
> Tribal Council Member, Puyallup Tribe of Indians

Listening session participants reflected that even when federal and state agencies attempt good-faith efforts to consult with Tribal governments on climate adaptation or renewable energy development issues, fundamental differences in values can create barriers for Tribal governments. Prospective partners can help reduce this burden by reorienting and broadening the values and project goals of non-Tribal organizations to accommodate Tribal values and priorities. For example, traditional Western frameworks for climate adaptation decision-making, such as benefit-cost analyses or willingness-to-pay methodologies (i.e., the maximum amount of money an individual is willing to pay for a product or service), can be incompatible with and/or ignore important aspects of intangible cultural heritage among Tribes. One listening session participant shared that:

> “We need [partners and/or agencies] to be open to our point of view. They don’t have to fully understand, but they have to be able to comprehend principal values. One that’s a foreign concept about the offshore wind is through talking with them, you meet different ideas. There are guys who are on the West Coast and are like: “we gotta get it done”, and then the guys on the other side are like “how much of a lease would it take for you to not fish?” And we’re like “well that’s not even an option for us” you know? And they look at the [commercial fishing industry] leases down south, they’re $150 million, and they’re like: “well, how much money do you make from your fish?” That’s the mindset difference, because they’re thinking: “well we could pay you 1000% more than your fisheries [are worth]”, but for us it’s the way of life, it’s not what you do with that money. Going out there is peaceful and it’s hard to explain to people that don’t get it.”
>
> **GLENN ELLIS JR.**
> Tribal Council Member/Treasurer, Makah Tribe

External factors among Tribal partners can also mire progress on Tribal adaptation priorities. For example, high staff turnover rates at federal agencies can lead to delays in funding awards for adaptation projects, which can erode trust and the continuity of relationships with Tribes. There is thus a need for increasing transparency and follow-through in funding processes. As one listening session participant shared:

> “I think federal staff turnover has been an issue of just ensuring that funding is actually going through... In recent times we’ve had an example of one federal department just having a huge turnover of several staff members within one department facilitating a grant and then it led to a whole year delay in terms of getting our, what was going to be an awarded grant, to have to be reviewed again.”
>
> **ANONYMOUS**
> Listening Session Participant

Listening session participants noted that lack of respect or consideration of Tribes is common in climate planning and implementation processes. Elements of respect include Tribe-tailored approaches to consultation, transparency and open communication between Tribes and funders, recognizing Tribal authority and consent in decision-making, incorporating Indigenous Knowledges into decision-making, and including Tribal-led initiatives and adaptation priorities in large-scale adaptation decision-making. For federal and state agencies, it also requires careful consideration of federal trust responsibility, federal reserved rights, treaty rights, and Tribal adaptation priorities and interests.

Listening session participants also cited a critical need to center, or significantly address, Tribal adaptation priorities in multi-partner projects. Non-tribal partners can support this by developing relationships with Tribes early, before projects begin, to help ensure Tribal interests are fully represented. For a wide range of non-Tribal partners, an understanding of Tribal values and adherence to ethical principles such as free, prior and informed consent can form the basis for effective relationships built on trust, reciprocity and respect for Tribal sovereignty. Listening session participants identified a need for capacity building among nontribal partners to develop these skills and practices in support of effective partnership with Tribes:

> “Making sure that our partners are fully prepared to engage with Tribes and that includes any sort of guidance on how to interact with Tribal governments and how to deal with things like Traditional Knowledge that may not fit the model that is commonly been relied upon or has been traditionally relied upon in educational institutions.”
>
> **GARY MORISHIMA**
> Natural Resources Technical Advisor, Quinault Indian Nation

TECHNICAL ASSISTANCE AND CLIMATE SERVICES

Northwest coastal Tribes require technical climate services to provide relevant, accessible, and up-to-date information on climate impacts and adaptation responses for their communities. As they move from adaptation planning to implementation, Tribes may also require other types of technical support such as engineering and project management as well as policy and regulatory guidance. Additional funding and capacity building are needed to establish and maintain such expertise internally within Tribal governments to ensure consistent, long-term support for Tribal adaptation.

Listening session participants widely indicated that Northwest coastal Tribes are actively working to assess climate vulnerabilities while simultaneously identifying adaptation priorities and addressing them with action. The overlapping nature of Tribes' current work in assessment, planning and implementation has led to a dichotomy of technical needs. On the one hand, there is continued need for technical services to provide relevant climate data, analysis and interpretation to better understand projected climate impacts on Tribal communities, including continual updates as new information becomes available. On the other hand, Northwest coastal Tribes increasingly express needs related to implementation, monitoring, and evaluation of adaptation actions, which require a different suite of technical expertise and services. This additional form of technical assistance may present itself as policy and regulatory guidance, expertise in engineering or community development, project management and coordination, or capacity building that allows Tribes to address their technical adaptation needs internally without support from external partners.

Listening session participants noted a range of needs around technical climate services, including support identifying climate impacts that are geographically and contextually specific to their Tribe and interpretation and decision support for Tribal staff and leaders seeking a better understanding of the range of possible impacts and response options within their communities and Tribal lands. Additionally, given Tribes' understanding of the interconnectedness of natural resources and Tribal culture and livelihoods (Jacobs et al. 2022, Whyte et al. 2023), another critical need is external support in understanding holistic, socio-ecological climate impacts and available options to mitigate those impacts.

Input from listening session participants suggests Northwest coastal Tribes also require technical assistance in the form of policy and regulatory guidance to help overcome barriers to adaptation actions. For example, to address sea level rise, many Northwest coastal Tribes must navigate complex regulatory systems, which include environmental, engineering, and developmental regulations. As seas rise around the Northwest, it may be helpful to understand the policy and regulatory frameworks that provision shoreline armoring, for example, which can inhibit inland migration of coastal habitats that sustain Tribal cultures and economies (Jacobs et al. 2022, Krosby et al. 2023).

Northwest coastal Tribes' needs for adaptation technical support extend beyond climate impacts and adaptation to include fields such as engineering and community planning. Listening session participants shared insights on the immense complexity of climate adaptation for coastal Tribal communities. Large-scale adaptation efforts like the relocation of Tribal communities and infrastructure away from coastal hazard zones can be enormous tasks that smaller Tribal governments may not have adequate or specialized staff to address. Bolstering support through a combination of in-kind technical assistance and/or funding to support new Tribal staff with the required technical expertise would help to address the challenges associated with such complex adaptation efforts.

Finally, listening session participants expressed interest in building technical expertise internally within Tribal governments. Such capacity building would provide consistent, long-term support for Tribal adaptation projects, but will require adequate funding to establish and sustain necessary staff positions long-term.

> “To build capacity we need funding sources that are long-term, that we can say to Tribal leadership: ‘We know we’re going to have funding for five or six years, so we want to hire this person who’s an engineer, who’s a project manager, who can take on these projects, talk to other [external] engineers, and who can make these projects happen’.”
>
> **ROCHELLE BLANKENSHIP**
> Tribal Council Member/Executive Director, Jamestown S’Klallam Tribe

Greater internal technical capacities within Tribal governments can also help center Tribal priorities and community knowledge in their climate resilience efforts, compared to working with external service providers. However, as described in the section on staff capacity above, building internal staff capacity within Tribal governments is challenged by the remote locations of Tribal offices and associated high cost of housing or housing shortages. Hiring remote positions as a solution to these barriers can present its own challenges in terms of the trust required to build internal expertise:

> “And there are some cultural barriers that make adaptation to remote work difficult. There’s fear around allowing people to work remotely, justifiable fear that allowing people to work remotely, you’re hiring someone who’s not from the community, and who’s not going to move to the community, how much are they really going to care? There’s that feeling, and it’s really justified.”
>
> **ANONYMOUS**
> Listening Session Participant

Listening session participants thus overwhelmingly expressed a need for not just additional staff, but staff they can trust and who have cultural competency and understanding of Tribal governments and operations. Building internal technical capacity through hiring Tribal citizens may be one way to address these constraints, but to do so often requires formal training and certifications to which many Tribal citizens currently lack access, as reflected by this listening session participant:

> "You know, we'd love to build capacity from within the community that's already here but there's some level of training that can't be given hands on. There's some level of training that does need access to some level of higher education. And there's a really big barrier to that out here."
>
> **ANONYMOUS**
>
> Listening Session Participant

Meeting technical capacity needs by filling resilience staff positions with citizens from their own Tribes would thus likely require Tribes to first provide additional technical training to meet position requirements and job competencies; such professional training necessitates a separate set of resources, funding and capacity, such as on-the-job training programs, workshops, or other climate adaptation workforce development programs. To meet this need, federal funding could integrate support for building and retaining local capacity, as the STACCWG Report (2021) recommends. Such programs may need to run continuously to maintain staff competency as new information becomes available and technologies change. Despite these challenges, investments in internal capacity-building would help reduce high staff turnover rates while supporting Tribal self-determination and sovereignty. These investments would also likely provide significant multiplier effects for Tribal communities, such as increased employment opportunities, stability, and sustained economic growth.

Even in cases where technical expertise exists within a Tribe, other barriers to technical information can stand in the way of adaptation efforts. For example, some listening session participants mentioned that much of the climate data and other relevant research they require exists behind paywalls. Without access to this information, its existence is useless to those who could benefit from its application. One listening session participant shared:

> "One of the biggest barriers I face as a scientist [for the Tribal government] is access to scientific papers. I think Tribes should have the ability to have those servers, where you can freely access papers. All I can get is what's on Google Scholar or what I can get off ResearchGate or what I can email someone and get. But there's, yeah, so many times where I can't get access to a paper unless I email somebody at a university and hope they can get it for me. And I think having the science available to the Tribes is a necessity."
>
> **ANONYMOUS**
>
> Listening Session Participant

Improving access to climate adaptation education and training for Tribal citizens and providing access to peer-reviewed literature for Tribal staff are thus among the many ways institutions of higher education may support the climate adaptation efforts of Northwest coastal Tribes.

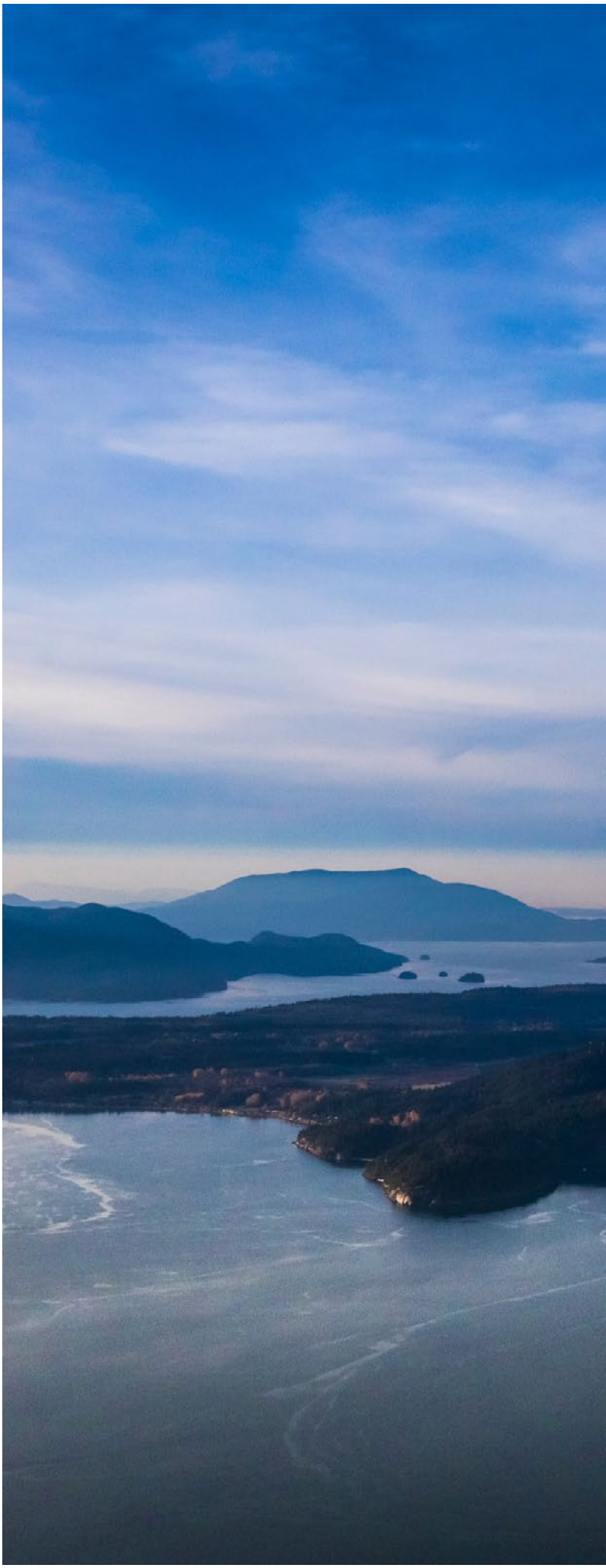
COMMUNICATION, EDUCATION AND OUTREACH

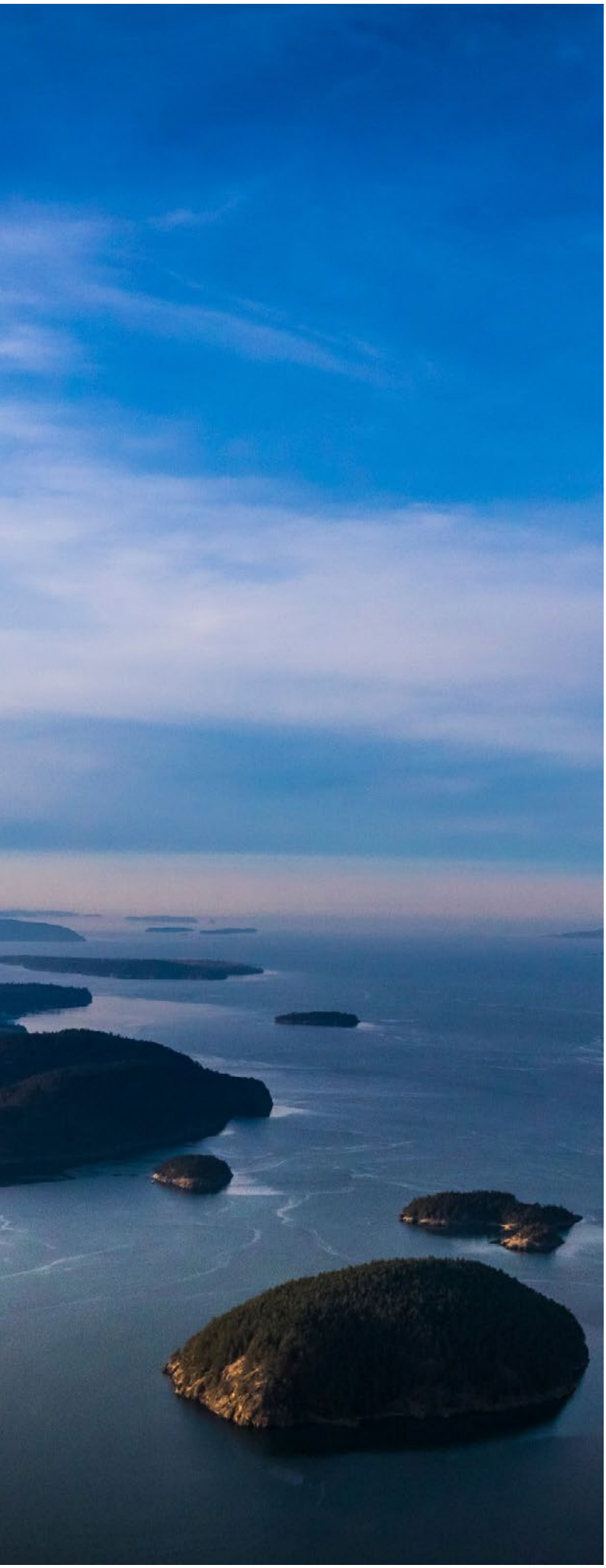
Northwest coastal Tribes require greater support to engage and communicate climate impacts and adaptation information to their citizens and members of their communities, as well as to external partners. Such efforts can help to build support for Tribal climate adaptation projects.

Northwest coastal Tribes increasingly see a need for greater communication of and education on climate change, its impacts, and adaptation within their communities and to their external partners. Listening session participants often identified community awareness and unity behind certain adaptation priorities as a primary catalyst for addressing them. Increasing climate communication and outreach efforts is thus seen as a key need in advancing Tribal climate adaptation priorities.

Increased communication between Tribes and other non-Tribal organizations was also seen as important in driving regional climate adaptation, especially in the context of forming partnerships with Tribes. As one listening session participant shared:

> "The kinds of challenges that we are faced with require us to develop partnerships to be able to work collaboratively and coordinate with our neighbors. One of the challenges that we face is to be able to communicate efficiently and effectively to explain what it is we're trying to accomplish in ways that are going to resonate with our partners. We need to understand where they're coming from and what they're trying to achieve. They need to understand where we're coming from in terms of how we want to approach some of the challenges that we are going to have to face together. I think communication, and the ability to collaborate, coordinate across boundaries, is going to really be important and key. That requires a lot of investment and commitment to build long term relationships that are going to last and endure some of the changes that we're going to be experiencing in the coming years."
>
> **GARY MORISHIMA**
> Natural Resources Technical Advisor, Quinault Indian Nation





Listening session participants also indicated that Tribes and partners need a common climate adaptation language to support effective communication. The common understanding needed to advance Tribal adaptation priorities can be hampered by adaptation terminology not easily understood by a non-technical audience, as well as the disparate interests and varying points of view involved in regional climate adaptation efforts. Translation of a given climate adaptation priority or concern from one group to another can distort a collective vision and limit unified, coherent climate adaptation actions. This challenge is highlighted by one listening session participant's comment:

> "One of the barriers we have is how we communicate, that we're not all speaking from the same glossary. So, some people might have a very technical background like myself, and people with equally valuable experience, like our lifelong fishermen, use different terminology. We speak about the same thing but we're using a different language, and so just having a common understanding, or a lack of a common understanding, about what we're talking about is a barrier."
>
> **ANNETTE BRYAN**
> Tribal Council Member, Puyallup Tribe of Indians

Clear, open communication within and among Tribes and with non-Tribal partners is key to achieving effective climate resilience at scale. Listening sessions suggest Northwest coastal Tribes recognize a distinct need to bolster their climate adaptation communication and outreach efforts not only to increase Tribal community buy-in, but also to build effective partnerships with other organizations and regional Tribes to expand access to capacity, technical assistance, and funding, among other benefits.

CONCLUSIONS

The scale of action required for addressing climate risks to Northwest coastal Tribes is enormous, whether it be relocating Tribal villages to higher ground, creating more climate-resilient fisheries and forests, or protecting community members from extreme weather events. Successful, Tribally led adaptation will require establishing new Tribal government programs, hiring additional staff, major infrastructure investments and re-envisioning many other economic, social and cultural components of Tribal lifeways. While Northwest coastal Tribes are recognized for their leadership in responding to these challenges, insights shared at listening sessions highlight the significant barriers and unmet needs they face in realizing their resilience goals. These include the need for adequate staff capacity and funding; more coordinated and effective partnerships with federal agencies and other entities; more technical expertise and services around climate adaptation; and improved communication, education and outreach.

These findings build upon those of previous assessments, which have identified similar barriers and unmet needs experienced by Tribes regionally and nationally (Bureau of Indian Affairs 2021, 2022; STACCWG 2021; Whyte et al. 2023; Alaska Native Tribal Health Consortium 2024). Earlier assessments have additionally noted the interconnected nature of these barriers, with their common root in colonial institutions and policies that limit the ability of Tribal nations to exercise their right to self-determination in meeting their resilience goals (STACCWG 2021, Whyte et al. 2023). Listening sessions and earlier reports have additionally highlighted the ways in which these barriers and needs reflect a failure of the federal government to meet its trust responsibilities, particularly in its chronic underfunding of Tribal programs (U.S. Civil Rights Commission 2018). Significant federal investment in Tribal capacity and authority are thus needed to ensure Tribes have the resources and self-governance required to address their resilience objectives in ways that align with the interests of their communities.

More work is needed to fully understand the distinct barriers and needs experienced by Northwest coastal Tribes, as those presented in this report cannot fully represent the depth and breadth of challenges faced by their citizens, governments and communities. More effort is also needed to identify specific, near-term actions to address these needs; this will be the primary focus of our project in coming years. We hope ongoing work within our own project and other regional and national efforts can build from the findings in this report to better understand, elevate and respond to the evolving needs of Northwest coastal tribes as they work to ensure the climate resilience of their communities.

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APPENDIX A:
PROJECT BACKGROUND

The Northwest Climate Resilience Collaborative (NCRC) is part of the National Oceanic and Atmospheric Administration's Climate Adaptation Partnerships (CAP) Program, an applied research and engagement program that expands society's regional capacity to adapt to climate impacts in the U.S. The CAP program supports sustained, collaborative relationships that help communities build lasting and equitable climate resilience. The NCRC is one of 13 active CAP teams across the country and engages a broad team of academic, non-governmental organizations and Tribal partners throughout the Northwest. The NCRC is housed at the Climate Impacts Group at the University of Washington and focuses on a suite of community-centered, resilience-building portfolios. The Tribal Coastal Resilience Portfolio[6] seeks to center the priorities and participation of Northwest coastal Tribes in climate adaptation, provide information to Tribes and non-Tribal partners for advancing coastal resilience, and enhance capacity for addressing the climate risks and needs of coastal Tribes. Over the coming years, this report will help to inform the Tribal Coastal Resilience Portfolio's activities as they relate to these goals.

6 NCRC Tribal Coastal Resilience Portfolio website: https://cig.uw.edu/our-programs/the-northwest-climate-resilience-collaborative/the-tribal-coastal-portfolio/

APPENDIX B:
METHODS

LISTENING SESSION AND REPORT METHODOLOGY

This report seeks to understand the status of climate adaptation among Northwest coastal Tribes in Oregon and Washington and to identify key barriers and needs which, if addressed, could accelerate Tribal adaptation efforts across the region. The scope of this report is limited to Tribes located along the Pacific coast of Washington and Oregon, the Strait of Juan de Fuca, and Puget Sound. In total, our team identified more than two dozen Tribes across this Northwest coastal region (Figure 1). While the scope of this project was determined by the present-day location of Tribal reservation lands along Northwest coastlines, we acknowledge that this is likely an underestimate of the many Tribes that draw ancestral connections to Northwest coastal areas.

The findings in this report are informed by a series of semi-structured listening sessions with Tribal staff, citizens and elected officials. Listening sessions were collaboratively designed and conducted by the NCRC Tribal Coastal Resilience Portfolio team, including staff from Affiliated Tribes of Northwest Indians (ATNI), University of Washington Climate Impacts Group, and Washington Sea Grant. The six listening sessions included 40 participants representing 13 Northwest coastal Tribes (Figure 1). To reduce the travel burden on participants and maximize efficiency in engaging as many coastal Tribes as possible, we held three listening sessions at regional Tribal meetings hosted by ATNI. We also held two virtual listening sessions to further increase participation. Finally, we held one listening session with an individual Tribe, in response to an invitation from one of its elected officials. All participants were offered compensation for their participation.

Listening sessions lasted two to three hours and included break outs into small-group discussions of approximately five participants. At the start of each listening session, the project team led a discussion around free, prior and informed consent (see section below for more information), which included a description of the project and how information would be used, a consent form for participants (see Appendix C), and time for answering questions and addressing concerns. Participants in the listening sessions were given options for how they would like the information they shared to be used (e.g., whether they desired to remain anonymous or have their name attributed to direct quotes), and for whether they would like to review and approve any quotes and materials before final publication. Questions posed in the sessions are provided in Appendix D.

The project team identified key themes from listening session data using qualitative methods. First, we transcribed audio recordings from each listening session breakout group. Next, we coded transcripts into general categories based on participant responses to listening session guiding questions (see Appendix D). We then used the software Atlas.ti (version 23.2.0) to code transcripts, producing an overarching set of code groups that included 1) strengths of Tribes in adapting to climate change ('Strengths'); 2) barriers Tribes face in planning or implementing climate adaptation actions ('Barriers'); 3) unmet needs of Tribes in advancing their climate adaptation priorities ('Needs'); and 4) actions or next steps to address these needs ('Actions'). Within each of these four categories, we used an inductive, open-coding methodology that produced 35 unique sub-codes across the four code groups (e.g., 'Code Group: Actions: Planning & Assessment'). We then analyzed sub-codes and corresponding quotations to identify key, cross-cutting themes (e.g., 'Partnerships and Collaboration', 'Funding', etc.). A set of prominent themes emerged from similar responses across listening sessions and from participants with different Tribal affiliations. Finally, we cross-checked emergent themes among the project team and the project's Tribal Advisory Group to further condense them into the key findings presented in this report.

The Tribal Advisory Group, composed of citizens and staff from Northwest coastal Tribes (see Acknowledgments), also provided guidance on listening session design and consent protocol and provided an early review of this report. Four additional Tribal and academic partners provided reviews of the draft report. Finally, the draft report was sent to the chairperson, natural resources director and Tribal historic preservation officer of each Northwest coastal Tribe for review and comment.

FREE, PRIOR, AND INFORMED CONSENT

Indigenous Knowledges (IK) can be essential in providing solutions to climate change impacts, yet Tribes have few effective or enforceable safeguards or legal rights to their Indigenous Knowledges and intellectual property, and thus limited control of it once shared. We have taken significant steps to mitigate potential harm and protect information and knowledge shared during listening sessions through a combination of Tribal input throughout the project design and application of best practices from the literature, including Tribally produced guidance. Specifically, we have drawn on formal guidelines focused on two formative ethical principles: free, prior and informed consent and cause no harm.

Free, prior and informed consent (FPIC) is a United Nations mandate and international legal framework that ensures the right to Tribal self-determination. FPIC is an iterative process meant to allow relationship building and enable Tribal representatives to give or withhold consent without intimidation (UNFAO 2016). The concept of consent recognizes that each Tribal community has its own governance norms and expectations that guide and structure the ways in which different facets of Indigenous Knowledge are treated by Indigenous and other entities, and more broadly regulates interactions. “Free” means Tribes give consent without coercion, intimidation or manipulation. “Prior” refers to seeking consent before any activities begin and at the earliest stages of project development. “Informed” means Tribes have access to all relevant information about the project and possible impacts. Another fundamental component of FPIC is that consent can be withdrawn at any time. The cause no harm principle involves the identification and avoidance of risks that could lead to loss or harmful misappropriation of IK (CTKW 2014).

APPENDIX C

LISTENING SESSION CONSENT FORM

PROJECT TITLE:
TRIBAL COASTAL RESILIENCE - REGIONAL LISTENING SESSIONS

Project leads: **Meade Krosby** (University of Washington) and **Amelia Marchand** (Affiliated Tribes of Northwest Indians)

The Tribal Coastal Resilience project recognizes that individuals have the right to provide input in a variety of ways, given the diverse personal, professional and cultural roles that individuals in Tribal communities have. We are committed to supporting respectful and transparent engagement and hope to encourage participation of all interested parties.

Participant Name:

I am speaking on behalf of (select all that qualify):

❏ Myself, as a Tribal citizen, community member or staff member

(specify affiliation: _____)

❏ A tribal government or organization, as an authorized representative

(specify affiliation: _____)

❏ A non-tribal organization or entity, as an authorized representative

(specify affiliation: _____)

Your involvement and the content of your contribution to the Listening Session may be used in the following:

- Any project products, including reports, academic papers, policy briefs or other publications or deliverables.
- Our website and other media we may produce, such as presentations or news articles.
- Future Listening Sessions or other outreach events.
- An archive of the project.

Quotation Agreement
I understand that my words may be quoted directly. With regards to being quoted, please initial next to any of the statements you agree with:

	I wish to review the notes, transcripts or other information collected during the project that specifically pertain to me.
	I wish to review any final products before publication that use the information I've provided.
Choose one:	
	I give permission to include direct quotes with my name in project reports and documents.
	I give permission to include direct quotes, but wish to remain anonymous in any project reports and documents.
	I wish to not be directly quoted, and to remain anonymous regarding anything I may have said during the Listening Session.

By signing this form, I agree that:

1. I am voluntarily taking part in this project. I understand that I don't have to take part, and I can exit the Listening Session at any time;
2. The transcribed conversation or extracts from it may be used as described above;
3. I have read the Information Sheet provided;
4. I can request a copy of the transcript of my conversation and may suggest edits I feel necessary to ensure the appropriateness and accuracy of my contribution, or to redact or amend any statements to further protect my confidentiality;
5. I have been able to ask any questions I might have, and I understand that I am free to contact the Project Leads with any questions or modifications to my quotation agreement.

Participant's Printed Name _____

Participants Signature / Date _____

Participant's Email: _____

Participant's Phone (optional): _____

❑ I wish to receive related project updates (e.g., future Listening Sessions, product releases, trainings or other resources).

Project Lead's Signature / Date

_____

APPENDIX D

LISTENING SESSION QUESTION GUIDE

The following questions were used in the semi-structured listening sessions that informed this report:

1. Strengths

a. What are your Tribe's strengths and successes in adapting to climate change?

b. What actions are you aware of that your tribe is taking to adapt to climate change?

c. What has made it possible to make progress with adaptation assessments, planning, or implementation?

2. Barriers

a. What hurdles or roadblocks does your Tribe face with adaptation planning or implementation?

b. What type of adaptation work does your tribe need additional expertise or assistance to take on? How so?

i. Technical or information barriers?

ii. Organizational barriers?

iii. Social, cultural, or political barriers?

c. What needs more attention or has room for improvement?

3. Needs

a. What needs does your Tribe have for moving its adaptation efforts forward? This can be about a specific adaptation activity, or a more general need (for example, developing policy, accessing funds, forming partnerships, staff capacity, or otherwise)

4. Action / Next Steps

a. What immediate actions or next steps could help address these needs?

b. Who needs to be involved, and what would help that happen?

c. How can climate resilience be an opportunity for addressing structural or systemic barriers to tribes? (e.g., how can it support nation-building, sovereignty, or other tribal priorities outside of climate?)

5. This project

a. How can our adaptation needs assessment assist tribes, individually or regionally?

b. How else can we assist tribes in their efforts to build climate resilience? (e.g., technical support, trainings, convene adaptation knowledge sharing)

6. Prioritization

a. How would you prioritize the issues brought up today?

APPENDIX E

NORTHWEST COASTAL TRIBAL CLIMATE DOCUMENTS

Publicly available climate documents released by Northwest coastal Tribes. Documents include adaptation plans, vulnerability assessments, natural resource plans, hazard mitigation plans, clean energy development assessments, and other climate-related environmental reports. These likely provide an incomplete picture of the climate planning efforts of Northwest coastal Tribes, as not all Tribes share such documents publicly, and our team may not have identified all that are publicly available.

Tribe	Document Type	Document Title	Year	Link
Jamestown S'Klallam Tribe	Adaptation Plan	Climate Vulnerability Assessment and Adaptation Plan overview	2013	https://cpb-us-e1.wpmucdn.com/blogs.uoregon.edu/dist/c/389/files/2010/11/Jamestown_SKlallam_Adaptation_Plan_Profile_FINAL-1qqgd7e.pdf
Makah Tribe	Adaptation Plan	Resilience, Adaptation, and Mitigation Planning 2021	2021	https://www.energy.gov/sites/default/files/2021-09/Makah-Tribe-final-report_0.pdf
Quileute Tribe	Adaptation Plan	Climate Plan for the Quileute Tribe 2016/2017	2016	https://quileutenation.org/wp-content/uploads/2024/04/April-2017-UPDATE-to-Climate-Plan-QT-of-the-QR.pdf
Samish Indian Nation	Adaptation Plan	Climate Resilient Facilities Management Plan 2022	2022	https://www.samishtribe.nsn.us/docs/default-source/natural-resources-documents/climate-resilient-facilities-mnagement-plan-cover.pdf?sfvrsn=208c6ed9_2
Stillaguamish Tribe of Indians	Adaptation Plan	Climate Change Adaptation Plan 2017	2017	https://cig.uw.edu/wp-content/uploads/sites/2/2014/11/SNRD-Adaptation-Plan.pdf
Swinomish Indian Tribal Community	Adaptation Plan	Climate Adaptation Action Plan 2010	2010	https://swinomish-nsn.gov/media/54202/swin_cr_2010_01_ccadaptationplan.pdf
Lummi Nation	Clean Energy Plan	Strategic Energy Plan 2016-2026	2016	https://www.lummi-nsn.gov/userfiles/1_Strategic%20Energy%20Plan%20FINAL.pdf
Coquille Indian Tribe	Community Plan	Comprehensive Land Use Plan	2019	https://www.coquilletribe.org/wp-content/uploads/2019/11/Comprehensive-Land-Use-Plan-2019.pdf
Jamestown S'Klallam Tribe	Community Plan	Carbon Neutral Plan 2023	2023	https://jamestowntribe.org/wp-content/uploads/Carbon-Neutral-Plan.pdf
Lower Elwha Klallam Tribe	Community Plan	Comprehensive Economic Development Plan 2021-2025	2021	https://irp.cdn-website.com/6c85e905/files/uploaded/North%20Olympic%20Peninsula%20CEDS%202021-25%2010.28.21.pdf
Nisqually Indian Tribe	Community Plan	Community Vision Plan 2013-2033	2013	http://www.nisqually-nsn.gov/files/1115/1977/1884/2013_Nisqually_Community_Vision_Plan.pdf

Tribe	Document Type	Document Title	Year	Link
Quinault Indian Nation	Community Plan	2017 Taholah Relocation Plan	2017	https://www.quinaultindiannation.com/planning/FINAL_Taholah_Relocation_Plan.pdf
Quinault Indian Nation	Community Plan	HUD Environmental Assessment	2017	https://www.quinaultindiannation.com/DocumentCenter/View/317/Environmental-Assessment-HUD-2017-PDF
Swinomish Indian Tribal Community	Community Plan	Transportation Plan 2011 Draft Update	2011	https://swinomish-nsn.gov/media/12675/swinomish_transportation_plan_public_review_draft_11-02-11.pdf
Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians	Emergency Management Plan	Estuary Response Plan	2018	https://ctclusi.org/wp-content/uploads/2020/09/CTCLUSI-Estuary-Response-Plan-2018.pdf
Multi-Tribe: Makah, Quileute	Emergency Management Plan	2011 Project Safe Haven: Makah and Quileute Tribes	2011	https://mil.wa.gov/asset/5ba41ffa22b73
Chehalis Tribe	Hazard Mitigation Plan	Draft HMP 2021	2021	https://www.chehalistribe.org/wp-content/uploads/2020/11/Chehalis_Tribe_HMP_11052020_Public_Review_Draft.pdf
Chehalis Tribe	Hazard Mitigation Plan	Flood Management Plan	2009	https://www.chehalistribe.org/wp-content/uploads/2018/09/Chehalis-Tribe-CFHMP.pdf
Chehalis Tribe	Hazard Mitigation Plan	Natural Hazard Mitigation Plan 2009	2009	https://www.chehalistribe.org/wp-content/uploads/2018/09/Chehalis-Tribe-NHMP.pdf
Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians	Hazard Mitigation Plan	Hazard Mitigation Plan	2022	https://ctclusi.org/ctclusi-hazard-mitigation-plan/
Hoh Tribe	Hazard Mitigation Plan	Hoh Indian Tribe Hazard Mitigation Plan 2022 Update	2022	https://hohtribe-nsn.org/wp-content/uploads/2022/10/Hoh_Tribe_HMP_Public_Review_10172022.pdf
Jamestown S'Klallam Tribe	Hazard Mitigation Plan	Hazard Mitigation Plan	2011	https://jamestowntribe.org/wp-content/uploads/2018/05/Tribal_Multi-Hazard_Plan.pdf
Shoalwater Bay Indian Tribe	Hazard Mitigation Plan	Tribal Hazard Mitigation Plan 2020-2025	2020	https://www.shoalwaterbay-nsn.gov/assets/Department-Files/Emergency-Management/SBIT-HMP-FINAL-2020.pdf
Confederated Tribes of Siletz Indians	Hazard Mitigation Plan	Tribal Hazard Mitigation Plan	2020	https://www.ctsi.nsn.us/wp-content/uploads/2021/03/2020MHMP-FEMA-Apprv.pdf
Sauk-Suiattle Indian Tribe	Hazard Mitigation Plan	Sauk-Suiattle Indian Tribe Hazard Mitigation Plan	2020	https://sauk-suiattle.com/Documents/-Sauk%20Tribe%20HMP04102020_Public_Draft_Review.pdf

Tribe	Document Type	Document Title	Year	Link
Squaxin Island Tribe	Hazard Mitigation Plan	Multi-Hazard Mitigation Plan	2018	https://squaxinisland.org/wp/wp-content/uploads/2018/10/2018_Squaxin_Multi_Hazard_Mitigation_Plan.pdf
Stillaguamish Tribe of Indians	Hazard Mitigation Plan	Hazard Mitigation Plan	2020	https://www.stillaguamish.com/wp-content/uploads/2020/05/Stillaguamish-Tribe-HMP-05262020_Public_Review_Draft.pdf
Tulalip Tribes	Hazard Mitigation Plan	2021 Hazard Mitigation Plan	2021	https://online.fliphtml5.com/zvxsk/rbzw/#p=1
Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians	Natural Resource/ Environmental Plan	Tribal Environmental Plan	2015	https://ctclusi.org/department-of-natural-resources-culture/
Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians	Natural Resource/ Environmental Plan	Tribal Water Quality Monitoring Strategy 2019-2024	2019	https://ctclusi.org/wp-content/uploads/2020/09/Tribal-Water-Quality-Monitoring-Strategy-2019.pdf
Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians	Natural Resource/ Environmental Plan	Invasive Species Management Plan 2013	2013	https://ctclusi.org/wp-content/uploads/2020/09/Invasive-Species-Management-Plan-CTCLUSI-2013_1.pdf
Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians	Natural Resource/ Environmental Plan	Tribal Water Quality Assessment Reports	N/A	https://ctclusi.org/department-of-natural-resources-culture/
Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians	Natural Resource/ Environmental Plan	Tribal Integrated Water Quality Monitoring Program	2016	https://ctclusi.org/wp-content/uploads/2020/09/QAPP-4.0-with-Signature-Page.pdf
Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians	Natural Resource/ Environmental Plan	Wetland Inventory and Assessment 2016	2016	https://ctclusi.org/wp-content/uploads/2020/09/Wetland-Inventory-and-Assessment-1.0.pdf
Jamestown S'Klallam Tribe	Natural Resource/ Environmental Plan	Protecting and Restoring the Waters of Sequim Bay (Watershed Plan)	2013	https://jamestowntribe.org/wp-content/uploads/2020/05/Protecting-and-Restoring-the-Waters-of-Sequim-Bay-2013.pdf
Lummi Nation	Natural Resource/ Environmental Plan	Environmental Plan 2016-21	2016	https://www.lummi-nsn.gov/userfiles/2_FINALLummiNationTribalEnvironmentalPlan11-15-16wAPPENDIX.pdf

Tribe	Document Type	Document Title	Year	Link
Port Gamble S'Klallam Tribe	Natural Resource/ Environmental Plan	Wetland Conservation Plan 2015-2020	2015	https://www.epa.gov/sites/default/files/2015-10/documents/pgst-wcpp-final.pdf
Quileute Tribe	Natural Resource/ Environmental Plan	Non-point Source Pollution Management Plan	2019	https://quileutenation.org/wp-content/uploads/2024/04/Quileute_NPSP_plan_FINAL_2019-09-16.pdf
Skokomish Indian Tribe	Natural Resource/ Environmental Plan	Chinook Recovery Plan 2017	2017	https://hccc.wa.gov/sites/default/files/resources/downloads/Skokomish%20Chinook%20Rec%20Plan_2017%20update_FINAL_rev%20.pdf
Skokomish Indian Tribe	Natural Resource/ Environmental Plan	Skokomish River Restoration	2015	https://usace.contentdm.oclc.org/digital/collection/p16021coll7/id/10258/
Stillaguamish Tribe of Indians	Natural Resource/ Environmental Plan	Natural Resources Department Wetlands Program Plan 2019-2024	2019	https://www.epa.gov/sites/default/files/2019-03/documents/stillaguamish_tribe_wetlands_program_plan_2019-2024.pdf
Jamestown S'Klallam Tribe	Other Report	2016 State of the Watershed	2016	https://geo.nwifc.org/SOW/SOW2016_Report/JamestownSKlallam.pdf
Lummi Nation	Other Report	Floodplain Management Plan Progress Report 2021	2021	https://www.lummi-nsn.gov/userfiles/Activity510MHMPProgressReport2021FINAL.pdf
Makah Tribe	Other Report	2016 State of Our Watershed	2016	http://geo.nwifc.org/sow/SOW2016_Report/Makah.pdf
Muckleshoot Indian Tribe	Other Report	2020 State of Our Watershed Report	2020	https://files.nwifc.org/sow/2020/chapters/muckleshoot-sow2020.pdf
Quileute Tribe	Other Report	Quileute Traditional Ecological Knowledge and Climate Change Documents Review	2016	https://quileutenation.org/wp-content/uploads/2024/04/Quileute_Traditional_Ecological_Knowledge_and_Climate_Change_Documents_Review.pdf
Samish Indian Nation	Other Report	Climate Adaptation Planning Framework 2017	2017	https://www.samishtribe.nsn.us/docs/default-source/natural-resources-documents/planningframework_final_compressed.pdf?sfvrsn=cfe13781_2
Samish Indian Nation	Other Report	Tribal Profile	2019	https://www7.nau.edu/itep/main/tcc/Tribes/pn_samish

Tribe	Document Type	Document Title	Year	Link
Sauk-Suiattle Indian Tribe	Other Report	Forested Tributary Stream Temperature Monitoring in the Skagit Watershed: 2008-2018 Results and Interpretation	2020	https://shorturl.at/O6pFi
Sauk-Suiattle Indian Tribe	Other Report	2016 State of Our Watersheds Report Skagit River Watershed	2016	https://geo.nwifc.org/SOW/SOW2016_Report/SaukSuiattle.pdf
Jamestown S'Klallam Tribe	Vulnerability Assessment	Climate Vulnerability Assessment and Adaptation Plan overview	2013	https://cpb-us-e1.wpmucdn.com/blogs.uoregon.edu/dist/c/389/files/2010/11/Jamestown_SKlallam_Adaptation_Plan_Profile_FINAL-1qqgd7e.pdf
Jamestown S'Klallam Tribe	Vulnerability Assessment	Climate Vulnerability Assessment and Adaptation Plan 2013	2013	https://jamestowntribe.org/wp-content/uploads/2018/09/3-JSK_Climate_Change_Adaptation_Report_Final_Aug_2013s.pdf
Jamestown S'Klallam Tribe	Vulnerability Assessment	Climate Vulnerability Assessment and Adaptation Plan Appendices	2013	https://jamestowntribe.org/wp-content/uploads/2018/09/4-JSK_Climate_Change_Adaptation_Report_Appendices.pdf
Lower Elwha Klallam Tribe	Vulnerability Assessment	Climate Change Vulnerability Assessment 2022	2022	https://www.elwha.org/wp-content/uploads/2022/09/LEKT_ClimateChangeVulnerabilityAssessment.pdf
Makah Tribe	Vulnerability Assessment	Fish Hatchery Climate Change Vulnerability Assessment	2019	https://www.fws.gov/media/makah-national-fish-hatchery-climate-change-vulnerability-analysis-final-report-and
Multi-Tribe: Treaty of Olympia Tribes (Quinault, Hoh, Quileute)	Vulnerability Assessment	Climate Change Vulnerability Assessment for the Treaty of Olympia Tribes 2016	2016	https://quileutenation.org/wp-content/uploads/2017/02/Climate_Change_Vulnerablity_Assessment_for_the_Treaty_of_Olympia_Tribes.pdf
Multi-Tribe: Treaty of Olympia Tribes (Quinault, Hoh, Quileute)	Vulnerability Assessment	Assessing the impacts of coastal flooding on Treaty of Olympia Infrastructure 2016	2019	https://www.cakex.org/documents/assessing-impacts-coastal-flooding-treaty-olympia-infrastructure

Tribe	Document Type	Document Title	Year	Link
Nooksack Indian Tribe	Vulnerability Assessment	Nooksack Indian Tribe Natural Resources Climate Change Vulnerability Assessment 2017	2017	https://cig.uw.edu/wp-content/uploads/sites/2/2018/01/01-Nooksack-Vulnerability-Assessment.pdf
Port Gamble S'Klallam Tribe	Vulnerability Assessment	Climate Change Impact Assessment 2017	2017	https://nr.pgst.nsn.us/wp-content/uploads/2017/08/PGST_climate-impact-assessment_report_0518-FINAL.pdf
Puyallup Tribe of Indians	Vulnerability Assessment	Climate Change Impact Assessment 2016	2016	http://www.puyallup-tribe.com/tempFiles/PuyallupClimateChangeImpactAssessment_2016_FINAL_pages.pdf
Quileute Tribe	Vulnerability Assessment	Climate Plan for the Quileute Tribe 2016/2017	2016	https://quileutenation.org/wp-content/uploads/2021/05/April-2017-UPDATE-to-Climate-Plan-QT-of-the-QR.pdf
Samish Indian Nation	Vulnerability Assessment	Climate Change Vulnerability Assessment 2019	2019	https://www.samishtribe.nsn.us/docs/default-source/natural-resources-documents/samish-indian-nation-climate-vulnerability-assessment.pdf?Status=Temp&sfvrsn=68193981_2
Samish Indian Nation	Vulnerability Assessment	Sea Level Rise Vulnerability Assessment 2020	2020	https://www.samishtribe.nsn.us/docs/default-source/natural-resources-documents/samishsealevelriseva042120.pdf?sfvrsn=8e6e793_2
Samish Indian Nation	Vulnerability Assessment	Climate Change State of Scientific Knowledge 2018	2018	https://www.samishtribe.nsn.us/docs/default-source/natural-resources-documents/climate-change-state-of-scientific-knowledge_2018.pdf
Samish Indian Nation	Vulnerability Assessment	Climate Change Planning Priorities 2017	2017	https://www.samishtribe.nsn.us/docs/default-source/natural-resources-documents/climateplanningpriorities_final_compressed.pdf?sfvrsn=a7e13781_2
Sauk-Suiattle Indian Tribe	Vulnerability Assessment	Flood and Erosion Hazard Assessment: Report for Climate Impacts Study	2014	https://www.cakex.org/sites/default/files/documents/NSD_Sauk_River_Final_Report_062614.pdf
Stillaguamish Tribe	Vulnerability Assessment	Climate Change Vulnerability Assessment 2016	2016	https://cig.uw.edu/wp-content/uploads/sites/2/2014/11/Stillaguamish-Vulnerability-Assessment-2.25.16.compressed.pdf

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