

Salmon Peoples of Arctic Rivers

Project Co-Leads: Arctic Athabaskan Council (AAC), Saami Council (SC), the Russian Association for the Indigenous Peoples of the North (RAIPON), and Aleut International Association (AIA)

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Primary responsibility of the steering committee is to review, edit as necessary, and approve workshop agendas, and to review, edit as necessary, and approve workshop reports.

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Introduction:

Arctic biodiversity is essential for the physical and spiritual well-being of Indigenous peoples, since the connection that Indigenous peoples have to the Arctic environment is through their direct relationships to the fauna and flora of the places where they subsist. Arctic Ocean resources and activities impact ecologies and human communities far inland and across international borders, such as the numerous salmon fisheries that are in flux globally. Arctic river systems, whose waters flow both to and from the Arctic Ocean, have historically provided not only the food security of Indigenous peoples, but also have been a source of their identities: many tribes are “Salmon Peoples” of the Arctic, a term that recognizes the inextricable bond between human and nonhuman species in the Indigenous worldview. Given that the Arctic Council has acknowledged via the Kiruna Declaration (2013) that the use of traditional knowledge is essential to a sustainable future in the Arctic, the AAC and its co-leads therefore propose a multi-phase project involving both TK holders and scientists of academia and resource agencies, a project that will design an assessment of freshwater river systems based on TK. The design of this holistic assessment will focus on “Salmon peoples” as a measure of ecosystem health, and also outline future data needs that could contribute to the resilience and adaptation of these peoples and the salmon populations upon which they depend. The primary project deliverables will be three workshop reports, the final of which will be a plan to complete a “Salmon Peoples of Arctic Rivers” assessment, including a draft table of contents and list of figures.

The project co-leads will begin as a starting point with a place-based comparison of the following river systems: the Yukon/Kuskokwim drainage systems (flowing through the US and Canada, the territories used by Athabaskan and Gwich'in tribes, and some Alaska Native tribes represented by the ICC); the Kamchatka River drainage (flowing through the Siberian region of the Russian Federation, the territories used by Russian Indigenous peoples); and the Deatnu/Teno River drainage (flowing through the Lapland region of Finland and Finnmark County of Norway, the territories used by Saami). Salmon on these river systems are in most cases undergoing changes that challenge the food security of the peoples who rely upon them.¹

There is a growing literature in the social and natural sciences on the use of TK and its relationship to Western scientific disciplines, and approaches to engaging TK can vary. TK has often been celebrated as a “local” knowledge, in that TK holders can contribute fine-scale observations of the ecosystem to understand environmental change; in this way TK holders increasingly have a role in Arctic Council efforts such as community-based monitoring. ***However, this project relies on a definition of TK that treats TK as variable, and as intersecting and parallel with scientific knowledges***—and thus this project does not search to “integrate” this knowledge with the sciences as much as it seeks to “dialogue with” the sciences. This project cultivates a different kind of relationship between scientists (natural and social) and traditional knowledge holders.

This project aims to draw on those aspects of traditional knowledge that is often referred to as “wisdom:” knowledge comparable to the sciences, in that it contributes to an Indigenous conservation theory and practice (Huntington and Watson 2012; Watson and Huntington 2008; Salmón 2000; Berkes 1999). It is in this way that this “Salmon Peoples” project is distinct from most efforts to include TK in Arctic Council activities, and distinct from recent (and important) research on communities that rely upon salmon (e.g., Carothers et al 2012; Kolarctic Salmon Project 2013)—though certainly research on individual case studies, fishing practices, and the specific local and traditional knowledge of salmon will be relevant to provide data for an assessment of “Salmon Peoples.” Importantly, this project aims to *organize information* about salmon and people in ways that will be relevant to existing traditional knowledge holders, leaders, and their communities—organizing information from all knowledge systems based on the wisdom of traditional knowledge holders.

Given that the results of any assessment produce policy recommendations and informs future research questions, this project engages TK at the design stage of an assessment to enable TK holders to share these burdens with natural and social scientists of academia and regulatory agencies. The multi-stage workshops proposed here presents a method of developing an interdisciplinary dialogue between these Arctic traditional knowledge holders and scientists, what has been termed “knowledge co-production” (Wyborn 2015; Watson 2013; Berkes and Armitage 2010).

This project will contribute to the implementation of recommendation 14 from CAFF’s Arctic Biodiversity Assessment, to ‘Recognize the value of traditional ecological knowledge and work to further integrate it into the assessment, planning and management of Arctic biodiversity. This includes involving Arctic

¹ These focal river systems are open to revision during the first workshop of this project. Specific focal species and related habitat conditions, etc., will also be identified during the first workshop by the PPs and their traditional knowledge holders. Although salmon species include Arctic char (*Salvelinus alpinus*), given this project aims to examine riverine social-ecological systems, Arctic char do not share the geography currently proposed for this project. Focal species may change if other areas are added either during the design of this assessment or in future assessments on “Salmon Peoples” using the methodology in this proposal.

peoples and their knowledge in the survey, monitoring and analysis of Arctic biodiversity'. This project will address sub-recommendation 14.7 to 'Seek ways to enhance the integration of traditional and local knowledge, including follow-up to the recommendations from the Iqaluit Declaration (Action 14.1), and encourage 'co-production of knowledge methodologies' by pioneering techniques in knowledge co-production.

Many advocate co-production approaches because scholars now contend that our conceptual models about nature, environmental change, and humanity's role in the system must be revised to develop more "flexible" social-ecological systems that can be "resilient" to change, that is, "absorb disturbance and still retain its basic function and structure" (Walker and Salt 2006: 1; see also Carpenter 2001; Holling 2001, 1973). These resilience theorists argue, "[i]t isn't just the amount of knowledge—details about species and ecosystems—it's also the kind of knowledge. It's the way we conceive of resource systems and people as part of them" (Walker and Salt 2006: 5; see also Carpenter et al 2009).

The "Salmon Peoples" project thereby aims to create a practice of "knowledge co-production" with Indigenous peoples and the scientists of academia and agencies: to bring new insights into theories of environmental and social change, which can generate new research questions relevant to problems in Arctic environmental politics.

Related Work Within the Arctic Council: Two Pathways To "Dialogue" Knowledge Systems

The work of this project is therefore to include interfacing with existing Arctic Council initiatives, as well as to develop linkages with and across relevant regulatory agencies to procure existing data beyond TK studies. Data that the TK holders might deem necessary will draw from both the existing work on TK in each river system, but also from other disciplines in the natural and social sciences. In the first place, this is because some of the metadata for a "Salmon Peoples" assessment might not seem to be directly related to salmon from the point of view of traditional academic disciplines—as one example, traditional knowledge holders are likely to deem suicide rate data to be necessary for a "Salmon Peoples" assessment of ecosystem health. Spatial data that can be collected and analyzed and presented in a GIS (Geographic Information System) will also be catalogued from relevant agencies to contribute to the maps envisioned in the list of figures for a "Salmon Peoples" assessment. *The work to organize this "Salmon Peoples" data for a global and local audience is one way the knowledge systems can dialogue and be represented in a single product.*

Secondly, the U.S. during its Chairmanship has given a priority to the *Arctic Freshwater Synthesis*, a report that will describe changes in freshwater flows and related impacts to riverine and terrestrial ecosystems. The Freshwater Expert Monitoring Group of CAFF's Circumpolar Biodiversity Monitoring Program (CBMP) is already monitoring freshwater ecosystem health in preparation for a *State of Freshwater* report, to be ready in 2018, under the Finnish Chairmanship. Given that the "Salmon Peoples" project aims to holistically understand the relationship between freshwater ecosystems and human livelihoods/economies, the project being proposed here will complement this existing scope of work on freshwater systems. *Finding these linkages between the projects is a second way to "dialogue" these knowledge systems.* The co-chairs of the Freshwater Steering Group have committed to participate in the dialogue generated by the proposed workshops of our project; Watson (technical advisor, AAC) attended the Freshwater Steering Group meeting in Copenhagen in May 2015, to learn about where this group was in their process of organizing the work of the freshwater experts. Watson aims to attend and make a presentation on the approach to TK in the Salmon Peoples project for the Freshwater Expert Group in their early October workshop, and this interaction will facilitate further

development of the questions to ask traditional knowledge holders during the Salmon Peoples’ Phase 1 workshop, to be held at the end of October.

The work of the “Salmon Peoples” project will also identify and contribute to the efforts of other relevant Arctic Council working groups and projects. Other possible linkages to pursue include projects with the Sustainable Development Working Group (SDWG) of the Arctic Council.

Methodology:

To “co-produce” knowledge this three-phase project uses a collaborative and iterative methodological strategy to design this assessment, including a series of formal workshops and a “participatory” research practice aimed to be inclusive of all relevant knowledges. The workshop format in Phase 1 is designed to respect TK holders as experts with wisdom they can choose to share: wisdom that might come in formats unfamiliar to many scientific disciplines, such as in the form of stories. Analysis will therefore engage qualitative social science methods used in the fields of cultural geography and anthropology to report on the conversations and stories recorded from the first workshop. Interpretation of this material will depend upon consultation with community experts, leaders, as well as the participants in the workshop. These “participatory” research techniques in the “critical” tradition in social sciences have been favored by scholars articulating what is called “Indigenous methodologies,” and include processes of collaboration via conversation or formal consultation with communities. In each analytical phase of the project, the technical advisor will consult with the knowledge holders and the project steering committee as a “check” on the draft analyses. Such methods are frequently carried out by ethnographers, whose participatory procedures allow the research “subjects” to have an authorial role in the analysis of research products. Since the goal is to understand the meanings of TK in terms of its relevance to the sciences, this process of consultation is the most rigorous procedure to understand cross-cultural worldviews (Watson 2014; Watson and Till 2010; Kovach 2009; Tuhiwai Smith 1999).

And thus in practice, the project’s technical advisor (Watson, AAC), a trained ethnographer and geographer, will assist the steering committee and the PPs in the design and facilitation of the workshops through conducting additional ethnographic research: both conversations with representatives of the PPs as well as literature reviews of relevant studies of TK will lead Watson to speak with and/or interview traditional knowledge holders and scientists of academia and agencies, people who may not participate directly in the workshops, but whose contributions (including ideas, collaborations, and data sources) would inform the discussions at the workshops and the overall assessment design. This additional research will involve both virtual and in-person communication as necessary, throughout the three project phases²; this proposal’s explanation of methodology and budget focuses on the conduct of the formal workshops and teleconferences. The table below summarizes the stages of the overall project and the schedule of deliverables.

Phase	Meeting	Deliverable	Date
Phase 1	Freshwater Expert Group Workshop, Watson attends		Early October 2015
	Final planning		Mid-October

² Travel and course-release support for this supplementary research will be sought through separate research grants secured for that purpose.

	teleconference of Salmon People project steering committee		
	Salmon Peoples of Arctic Rivers workshop of Traditional Knowledge holders		Late October 2015
		Draft Workshop report for review to the steering committee	January 2016
	Teleconference convening steering committee		January 2016
		Final Workshop report for Phase I	March 2016
Phase 2	Teleconference(s) convening steering committee to finalize plan Phase 2 workshop		March 2016
	Workshop for Phase 2, convening TK holders and natural and social scientists of academia and agencies		October 2016
		Draft workshop report due to steering committee	December 2016
	Teleconference with steering committee to review workshop draft		December 2016
		Final workshop report	January 2017
Phase 3	Experts of TK and relevant scientific disciplines convene to create a final plan for a Salmon Peoples of Arctic Rivers assessment		February 2017
		Draft workshop report	February 2017
	Teleconference with Steering committee to review draft workshop report		March 2017
		Final workshop report, including draft TOC and list of figures/maps	March 2017

To summarize the above table that outlines the process of knowledge co-production, Phase I (convening by Fall 2015) includes a workshop (late October 2015) and one follow-up teleconference (Jan 2016); through the workshop the PPs (and their TK holders and experts) will develop a common strategy to utilize TK, and through the follow-up teleconference discuss the results of the analysis of the workshop. Watson will also report at the teleconference on common themes between the early October Freshwater Expert Group workshop and the Salmon Peoples' workshop in late October. At the teleconference the PPs will also begin to interface with the Freshwater expert group; the co-Chairs of the Freshwater Steering Group will be able to represent the results of their Fall 2015 meeting, which concludes a stage of organizing the metadata for the *State of Arctic Freshwater* report. Thus at the teleconference the co-Chairs can discuss with the PPs the directions that their group is going; conversely, the Freshwater group can hear results from the first workshop, including about the traditional knowledge holders' definitions of ecosystem health, a question that the co-Chairs offered when commenting on an earlier draft of this proposal. The conclusion of Phase I (March 2016) will produce a workshop report that establishes the protocols and practices of working with TK specific to this project, will present analysis on some of the elements traditional knowledge holders deem necessary for an assessment of "Salmon Peoples," and will begin to generate research questions regarding their resilience and adaptation by designing the draft agenda and draft list of invitees for the workshop during Phase II.

In Phase II a "Salmon Peoples" workshop (October 2016) will convene both TK holders and scientists with relevant expertise, involving potential participants for Phase III, with a subsequent de-briefing teleconference with the steering committee by January 2017. The final make-up of participants of the Phase 2 workshop will be composed of nominees from both the PP organizations and the agencies of nation states. The structure of this second workshop will be guided by themes generated in Phase I, and include brainstorming sessions that will be recorded for analysis. Participants may be asked to partake in a survey instrument or "Q-Method" process to test hypotheses about the perspectives of the participants regarding the resilience of salmon and people. The final structure and outputs of this second workshop will be reviewed and approved by the project steering committee. Phase III (Winter 2017) will convene participants from earlier phases for a last workshop to collaborate on a final design for the assessment, participants having learned from the experiences of the first two workshops and their subsequent reports.

The methodology for knowledge co-production in the "Salmon Peoples" project is therefore designed to be iterative, transparent, and inclusive. It is in this way that the "integration" of TK and scientific knowledge comes from the dialogue, to generate new research questions for the scientific disciplines and adaptive management initiatives. This project's primary activities will take place during the two-year US Chairmanship of the Arctic Council, with the draft of the assessment design (a table of contents and list of figures) being complete by the US ministerial meeting at the conclusion of the US Chairmanship.

Detailed Description of Project Methodologies and Practices in Each Phase:

Phase I

In Phase I, to begin by Fall 2015, Watson will complete a review of literature and relevant salmon-related TK projects to assist the project steering committee in finalizing the agenda for an October workshop. Although at present not all PPs are co-leads of the project, all PPs will be invited to participate in the workshops. This first workshop will feature a discussion between traditional knowledge holders, chosen by each PP to represent their river systems, convening for two days to develop a common understanding of how to use TK to contribute to an assessment design, and to

develop common goals among the PPs for an assessment. Participants will be chosen by their respective PP organizations, and will include TK holders, representatives of the PPs, and any technical experts the PPs choose to invite. Held in Fairbanks, Alaska, four participants per PP will be funded to attend, though the workshop is open to additional representatives. The TK holders will likely (though not necessarily) have been involved with fisheries management, and at least one of the representatives should have official duties within their PP organizations, serving as a point of contact for the project (and possibly serve on the project's steering committee). PPs will develop their own rationale for choosing TK representatives; for example, the AAC has nominated the following traditional knowledge holders to represent their area of the Yukon River:

- ❖ A male subsistence fisher (+50) with over 15 years of local, regional, and international leadership;
- ❖ A male subsistence fisher (+50) with a degree in wildlife biology, who has co-published with natural scientists about his traditional knowledge, and who has served on the Alaska Board of Fisheries;
- ❖ Elders of a village (+70), who have subsistence fished every year they have been married, as well as in their youth, with the wife continuing to manage the smoke house for their family while the husband harvests the fish. Additionally, the wife is an expert of the Koyukon Athabaskan language, and the husband has been deeply involved in regional wildlife management for most of his adult life.

These nominees represent not just the primary use of salmon in the Athabaskan area of the Yukon (subsistence economies), but the list also pays attention to representing the perspectives of both genders, multiple generations, experience at different management venues, and particular skill sets (e.g., language) that will enhance the discussion. Watson will communicate with each of the PPs to understand the particular expertise of the TK holders nominated to attend the fall workshop, and advise the steering committee and PPs about potential gaps in participation prior to the first workshop. Potential participants who cannot attend the workshop(s) may be consulted separately by Watson or by researchers identified by the PPs. The participatory research that Watson conducts will be reported to the steering committee on a timely basis, and be included in each report provided to the steering committee and PPs.

Since TK holders have never been engaged in this kind of dialogue to develop an international assessment (see by comparison Jackson et al 2014), and since traditional knowledge varies across peoples and places, it is necessary to use the Phase I workshop to discuss what are these commonalities across river systems and across knowledge traditions, and to develop common questions to ask of the scientific experts at the next phase of the project. Discussions at this first workshop may involve stories, oral history, prophesy, or other information that is of sensitive nature—often this kind of information can be easily taken out of context and misunderstood, depending on one's scientific training (Watson and Huntington 2014). Additionally, fishing communities are themselves heterogeneous, and it must be acknowledged that Indigenous communities have debated among themselves the needs of the capitalist and subsistence economies that have evolved around salmon; not all "Salmon Peoples" are the same. And thus before introducing scientific experts to the overall dialogue on "Salmon Peoples," Watson will analyze the content of the discussions through methods outlined, and the follow-up teleconference with Phase I participants and the steering committee will re-present and review this analysis, to ensure these discussions are not taken out of context, and to ensure participants agree on what information is being shared broadly. After this teleconference a final workshop report can be completed.

The conversation proposed in this first workshop can indeed be difficult, given that these Indigenous communities have employed varying strategies to adapt to their changing economic and ecological contexts, but such a conversation about these strategies is both necessary and possible. If the Arctic Council is to engage with the “wisdom” provided by TK, TK holders need the space and time to learn from each other and identify what aspects of their knowledges are most relevant to offer a specific assessment endeavor. How to conduct the meeting will be of importance; the facilitator (Watson) will at all times lead conversations away from direct policy or management debates. What is most important to understand for the purpose of an assessment on ecosystem health is not the particulars of a political debate, but whether the same kinds of management challenges affect more than one of the river drainage systems. The international scope of this workshop will also work towards not allowing speakers to engage in detailed policy debates specific to their river systems; part of traditional knowledge is a deep awareness of one’s audience for the oral tradition, and making interventions relevant to that audience (Watson and Huntington 2014). The facilitator will also actively strive to keep the discussion focused on the teachings of TK, from all kinds of “Salmon Peoples” that have adapted to their changing social-ecological contexts; at all times the conversation will be guided so that the PPs respectfully learn from each other as they collaborate to teach natural and social scientists about the heterogeneous (and ever-adapting) Indigenous perspective.

At the end of each workshop, participants will partake in a short quantitative and qualitative survey that measures the effectiveness of the workshop and its discussions. Questions will include Likert-scale questions (“On a scale of 1-5, rank how well the workshop discussions engaged traditional knowledge of your area”), as well as open-ended questions (“How could project leaders improve use of traditional knowledge?”). Many questions will remain the same from workshop to workshop, to enable a quantitative measurement of whether the communication of TK has improved or remained satisfactory with each iteration. Undergraduate student interns and translators on-site will assist with collecting this survey data, and Watson’s graduate research assistant(s) will perform a preliminary quantitative and qualitative analysis of this survey before Watson finalizes this analysis.³ This direct feedback will also provide perspective on the overall analysis of the workshop discussions.

To analyze the Phase I workshop, these discussions will have been recorded and transcripts analyzed for both commonalities and differences in these river systems and cultures, as well as for the traditional knowledge found in stories, oral histories, and other information provided at the workshop. When necessary, Watson will reach out to area experts to aid in interpretation, speaking to PP organizations for their recommendations on experts to consult. Not all of the discussions during the workshop will be recorded; PPs may call for an off-the-record executive session to discuss issues as needed. The transcripts will be coded for analysis, using both an open coding and thematic coding procedure (Watson and Till 2010), identifying themes that could contribute to a draft table of contents and list of figures, or species and habitat condition lists. Analysis will not search for random themes, but themes that can be related to existing efforts by the Freshwater Expert Group. This analysis will be reviewed during the subsequent teleconference with Phase I participants as a check on this analysis, and will also be shared with the co-Chairs of the Freshwater group, as outlined above, to inform not just the Freshwater group’s efforts but to engage the co-Chairs in further discussion for planning the “Salmon Peoples” workshop of Phase II. The draft methodology on the use of TK for a “Salmon Peoples”

³ In addition to engaging the labors of a graduate research assistant, Watson teaches a graduate course each fall, “Social Science Methods for Environmental Studies,” at the College of Charleston; the students taking the course will be engaged in conducting portions of the preliminary analysis, of both the survey as well as the overall analysis of the workshop discussions.

assessment, a first draft table of contents/list of figures, and first draft research questions will be included in the workshop report, the main deliverable of Phase I.

The table below represents the (tentative) two-day agenda to be discussed by PPs, TK holders, and their technical experts during this first workshop, including potential outputs from each topic of discussion.

Topic of Discussion	Relevance to Assessment	Facilitator Remarks	Questions for Discussion	Outcomes of Discussion
What is ecosystem health when you think about “Salmon Peoples”?	Establish baseline definition to also share with Freshwater group; will contribute toward lists of connected species/environmental conditions to measure	This discussion will guide the group to identify what it means to be “Salmon People” in terms of both cultural and economic practices.	What is your definition of “ecosystem health”? What is the role of salmon in the food security of your communities?	Analyzed via coding
			What is the economic role of salmon in your societies, including all livelihoods (both the subsistence and capitalist economies)?	Analyzed via coding
			What have been the changes in ecosystem health and in the way your communities identify with salmon? Both short term and long term changes?	Analyzed via coding
What are the purposes of this assessment? What questions might this assessment answer?	Establishes goals and audience of assessment	Brief introduction to the structure and purposes of other Arctic Council assessments (including the <i>Arctic Freshwater Synthesis</i>)	How would a TK-led assessment differ from Western-science-led assessments? How do you handle uncertainty—not knowing all particulars—before acting on TK?	Analyzed via coding
			What kinds of information are relevant to TK? And from TK? What audiences will this assessment serve?	List of target audiences; list of desired data sources
			Desired outcomes of the assessment?	List of outcomes for assessment
Discussion of/Introduction to specific river systems and their ecosystems	Identifies focal geographies for assessment; identifies focal species and habitat conditions	Brief (5-min each) intro to the specific social-ecological contexts of the three river systems	Are these the right drainages to focus on, given the purposes of the assessment? Should other river drainages be considered?	Decision on focal geographies
			What are the related species that are associated with the salmon runs? For example, in the Yukon River drainage, “cotton” from weeds fall like snow on the ground when King Salmon (<i>Oncorhynchus tshawytscha</i>) arrive in the Middle Yukon. What are the associated	Lists of species/habitat complexes of importance to understand ecosystem change

			species that indicate it is time to harvest salmon? Have there been changes seen in the complex of ecosystems and habitats that salmon are a part of?	
			What are the species that are switched between in times when preferred salmon species are in decline or being actively conserved?	Lists of alternative species that contribute to food security
What kinds of data/research are pertinent in this assessment	Will guide additional reviews of literature and the cataloguing of spatial data	Summary of existing TK research in each river system	What kind of information is “missing” or in common between these works?	Coded for analysis
			What kind of information do you desire from the sciences?	List of potential questions of scientists; List of disciplines to engage for Phase II; List of potential authors/editors of the assessment
		Explanation of potential review process and publication	Data management: what to share of TK and how? Are there any special considerations of the review process involving TK, given that reviews are organized through the CAFF Secretariat?	Decisions on how to protect information of a sensitive nature
Brainstorming a tentative table of contents, list of figures, and themes for an assessment	Will create working draft of the TOC/list of figures to be discussed in Phase II		How to present data? What kinds of maps to include? What is the proportion of images to text? Case studies of particular places? Develop criteria to select representative communities to highlight	List of considerations about representing TK and other data; List of potential chapter titles; List of potential map layers to combine for analysis
Designing Phase II workshop agenda		Will present some ideas generated by the steering committee for discussion	Decide location/date for the workshop What kinds of sessions do you want to see, based on our two-day discussions? What do you want to learn?	Location of next workshop; List of possible sessions for next workshop
Other considerations and Next steps				Tasks for facilitator and steering committee

The above agenda will be reviewed and revised by the project steering committee and then the PPs in the months prior to the Phase I workshop.

Phase II

At the first workshop, the PPs will begin to develop an agenda of a three-day workshop focused on the “Salmon Peoples of Arctic Rivers,” Phase II of this project (October 2016). This workshop will have invited participants (both TK holders and scientific experts) and be open to academia and natural resource agencies, including the potential authors/editors of the assessment plan of Phase 3. Potential invitees to this second workshop will come from a variety of institutions:

- ❖ Representatives of PP organizations;
- ❖ Nation-state representation via government agencies;
- ❖ Non-governmental organizations, such as the Yukon River Drainage Fisheries Association, (US/Canada);
- ❖ Project Groups such as the Kolarctic Salmon Project (Finland);
- ❖ Research Groups such as Snowchange (Finland);
- ❖ Groups such as Saa’mi Nue’tt Cultural Organisation
- ❖ University researchers, such as situated at the University of Alaska Fairbanks (USA)

This list is not exhaustive, but reflective of comments provided for earlier drafts of this proposal; draft lists of participants will be circulated amongst the project co-leads, the steering committee, and nations for addenda, and adjusted if necessary to achieve representative-ness. Attendance will also be open beyond the list of invitees. As part of the final Phase 2 workshop report, Watson will assess the representative-ness of the attendees.

The workshop will be a space to present current research, but will also have sessions dedicated to brainstorming how to organize information in an assessment to facilitate the resilience and adaptation of these human-environment communities. Some session themes will be inspired by the questions that TK holders have of scientific disciplines, as well as engage ideas about adaptation and resilience of the social-ecological system. Other sessions might provide a space where conservation scientists can have their questions answered by a panel of some of the TK holders and TK experts. Because the structure of the Phase II workshop will be driven by TK and the questions coming from the Phase I workshop, speakers are less likely to speak to their own disciplinary literatures as much as they can exercise their expertise in explaining the relevance of their research to answer the TK holders’ questions. The steering committee will review potential analytical approaches to deploy in this workshop, such as survey instruments like the Nature Index, as used amongst expert groups in Norway (Aslaksen et al 2012), or the “Q-Method,” which has been found to be successful in quantitatively assessing perspectives across cross-cultural contexts (Ray 2011). If a quantitative approach to measuring participants’ perspectives in Phase II is taken, the project steering committee will be involved in generating hypotheses to test.

Similar to Phase I, the participants of the Phase II workshop will partake in a survey that measures the effectiveness of their workshop; likewise, the brainstorming sessions will be recorded, transcribed, and analyzed for patterns that would contribute to forming the table of contents of the assessment. A follow-up teleconference will review this analysis prior to finalizing the Phase II report. All participants will be provided with this final report of results that analyzes these brainstorming sessions and the overall efficacy of the Phase II workshop.

Phase III

In Phase III of the project, the PPs, their technical experts, and Western scientists (nominated by PPs and States) will convene to finalize the design of the written assessment. These participants will have likely attended the Phase II workshop, and in Phase III will discuss the results of the analysis of Phase I and Phase II of the project. The purpose of the Phase III meeting will be to develop a final plan to create an assessment for “The Salmon Peoples of Arctic Rivers,” including co-designing the Table of Contents and List of Figures for such an assessment. At this meeting they will also finalize the review processes necessary to conduct the assessment. The final workshop report will be delivered by the ministerial meeting that ends the US Chairmanship.

PHASE I Outcomes/Products : Workshop report, including:

- Methodology on the use of TK for a “Salmon Peoples” assessment
- Potential research questions for other disciplines based on TK
- Draft table of contents/list of figures for review during subsequent phases of the project
- Draft agenda of the Phase II workshop, and list of potential science expert invitees to the workshop

Conclusion:

This project as outlined is intended to build upon CAFF’s *Arctic Biodiversity Assessment* and contribute to CAFF’s upcoming *Freshwater Assessment* report, but in such a way as to “bridge scales” as well as knowledge traditions. We believe this project presents an opportunity for CAFF and the Arctic Council to develop a global assessment of freshwater ecosystem health deeply informed by TK, by engaging TK with ecosystem-based approaches, and through the use of interdisciplinary studies of the social-ecological system. By focusing (at first) at the scale of the people of Arctic rivers, the Indigenous perspective—and the literal perspective from the banks of these rivers—presents an opportunity to organize global information for an assessment in a way that could facilitate outreach to the wider world about the importance of Arctic stewardship, which is one goal of the upcoming US Chairmanship of the Arctic Council.

Decisions Needed from CAFF Board:

- For countries to consider providing funding
- For countries to consider co-leading with the PPs

Funding:

Potential funding sources include Arctic Council Countries, non-Arctic countries and foundations.

Budget for Phase I:

The monies listed below are to organize the initial two-day workshop and subsequent teleconference of **Phase I only**, including travel for participants, and to fund the analysis of the first workshop.

Summary Expenses:

Budget Category	Expenditure	Amount of Requested Funds
Travel	Airline	\$40,600
	Lodging	\$6,480
	Per diem	\$1,920
Meeting costs	Room/equip rental	\$800
	Catering	\$1,500
	Honoraria	\$5,400
	Translators	\$3,000
Staff	Facilitator/Primary Analyst (incl. travel to meeting)	\$3,900
	Undergraduate Research Assistant (incl. travel to meeting)	\$3,300
	Student Intern	\$2,000
	Admin costs to CofC	\$1,000
Total Budget for Workshop		\$69,900

Budget Justification:

Travel:

The initial workshop for Phase I will be held in Fairbanks, Alaska, and provide for the travel of 4 participants per PP; these will include TK holders and technical experts chosen by the PPs—a total of 24 funded participants. Air travel will be estimated on a geographic basis given a meeting location of Fairbanks, Alaska, a city that is part of Athabaskan territory. Participants from all regions with rural origins will have much higher travel costs than those who reside in some urban areas. Honoraria will be especially necessary for compensating the TK holders, who will be invited to share their wisdom and knowledge of salmon ecosystems.

Air travel:	AAC:	\$3,200
	SC:	\$10,000
	AIA:	\$4,500
	ICC:	\$4,500
	RAIPON:	\$15,200
	GCI:	\$3,200

Lodging: 3 nights at Westmark Hotel, Fairbanks (\$90 per night, including continental breakfast) = \$6,480

Per diem for participants (minus costs for lunches and continental breakfast provided during workshop): \$20/day, including 2 travel days (4 days total) = \$1,920

Subtotal for Travel: \$49,000

Meeting Costs:

Room rental, Westmark Hotel, Fairbanks, Alaska (including equipment rental): \$800

Catering lunch 2 days, 24 participants = \$1,500

Honoraria for TK holders: It is assumed that 3 out of 4 participants per PP will be TK holders (approx. \$150/day) = \$5,400

Translation costs (two days translation service, two translators English-Russian, two translators for Yup'ik): \$3000

Subtotal for Meeting Costs: \$10,700

Staff:

The workshop will be organized and meeting products completed by the AAC technical expert, Dr. Annette Watson, one student at the College of Charleston, and a student intern with an Alaska Native organization (such as Tanana Chiefs Conference). Administrative costs are to cover accounting and other administrative costs at the College for distributing some of the funds and organizing the workshop.

Add-pay for Watson to oversee the intellectual labors of Phase I of the project for the AAC. This includes background research for building the agenda and providing meeting materials, recruiting participants and feedback, helping the PPs to develop and finalize the agenda, facilitating the discussion at the workshop to align with current research on the relationship between TK and science, and overseeing the production of outputs (transcripts and analysis) to be delivered to CAFF: \$3000

Air travel for Watson to Fairbanks for facilitating the meeting in Fall 2015 (lodging in-kind): \$900

Undergraduate Research Assistant (from the College of Charleston), who will work at \$14/hr for 15 hours a week for 10 weeks. The student (preference given to Native American student) will be responsible for collecting the data at the meeting for analysis, transcribing the discussions that were recorded (approximately 10+ hours of multi-voice recordings), and with Alaska student intern will develop draft coding scheme for analysis: \$2,100

Travel/lodging for student to work on event (will set up meeting space, operate recording devices and process data for later analysis): \$1200

Student Intern (with Tanana Chiefs Conference or other Alaska Native organization), a cost for labor that will be shared with the interning organization. This student will be assisting with the preparation for the Phase I meeting, assist with on-site preparations, collect data at the meeting for analysis, transcribe recordings, and in collaboration with the other student worker will produce the draft coding scheme for

analysis. Watson will oversee the intern's work for this project and coordinate activities with the collaborating organization. Cost share for their labor: \$2000

Administrative Costs at College of Charleston: \$1000

Subtotal for Staff/admin costs: \$10,200

Total estimated costs for Phase I: \$69,900

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