SUSTAINABLE SALMON INITIATIVE
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AYK SSI 2025 INVITATION TO SUBMIT RESEARCH & MONITORING PROPOSALS, PROGRAM PRIORITIES & SUBMISSION INSTRUCTIONS

INTRODUCTION:

The Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative (AYK SSI) is pleased to release its 2025 Invitation to Submit Research and Monitoring Proposals. Under the 2025 invitation, **up to $2M** is available for funding of research/monitoring projects addressing the region's Chinook and chum salmon decline in abundance.

2025 Invitation Overview

Invitation Release Date:	**October 4, 2024**
2025 Funding Level:	Up to $2M
Proposal Submission Deadline:	**December 17, 2024**
Project Start Dates:	May 1, 2025 or later
Duration of Projects:	**Projects must end on or before June 30, 2028**
Final Selection of Proposals for Funding:	April 15, 2025

The 2025 Invitation has two components:

1. **AYK SSI 2025 Research and Monitoring Priorities & Proposal Submission Instructions** (this document). Below you will find:
   - A list of the six priority "Research and Monitoring Themes" focusing on Chinook and chum salmon as species of special concern.
   - Proposal formatting requirements & template required for submission.
   - Information about our online proposal submission system.

2. **AYK SSI Budget Forms:** (MS Excel file) provides instructions and required budget forms, which must be uploaded to the online proposal submission system, along with the completed proposal narrative.

AYK SSI 2025 RESEARCH AND MONITORING PRIORITIES

The Arctic-Yukon-Kuskokwim (AYK) region has experienced disastrous and sustained declines of salmon stocks essential for subsistence fisheries, beginning with chum salmon in the Norton Sound region over 40 years ago. Declines of salmon returns to the Yukon River, Kuskokwim River, and Norton Sound region have resulted in severely restricted subsistence harvests, numerous unmet escapement targets, state and federal disaster declarations, and special designations by the State of Alaska as Stocks of Yield Concern. Chinook and chum salmon are species of special concern in our Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative (AYK SSI) 2025 Research and Monitoring Priorities.

The 2025 Priority Themes 1-3 address sources of mortality and the need for sustainable management and are drawn from the **AYK SSI Chinook Salmon Research Action Plan** (see http://www.aykssi.org/aykssi-chinook-salmon-research-action-plan-2013/) and the **Chum Salmon Research and Monitoring Action Plan** (in development check the AYK SSI webpage, www.aykssi.org, for the upcoming release), Theme 4 focuses on the Human Dimensions of Salmon Ecosystems and is adapted and expanded from Chapter 5 of the broader **AYK SSI Research and Restoration Plan** (see http://www.aykssi.org/ayk-plan/). Theme 5 addresses the need to assess risks to salmon biodiversity and support sustainable management of at-risk stocks of Chinook and chum salmon populations. Theme 6 is based on a draft research and monitoring plan for AYK region chum salmon encourages proposals that integrate research with monitoring. Example proposal questions for these themes can be found in the three salmon science plans described above.

THEME 1 – Drivers of Freshwater Mortality

Have changes in the suitability or productivity of freshwater habitat used for spawning, rearing, and migration contributed to declines in AYK Chinook and chum salmon stocks?

Description: Theme 1 examines the linkage between the dynamics of Chinook and chum salmon populations and environmental conditions that control growth and survival during the freshwater component of their life cycles. For most salmon populations the freshwater stages sustain most of the total egg-to-adult mortality. Adult, embryonic, and juvenile stages are all vulnerable to changes in freshwater environmental conditions. For example, incubating embryos can be affected by several variables including winter temperatures, oxygen concentrations, and flow-related gravel scouring.

Growth rates of juvenile salmon, prior to ocean entry, may be affected by limited food resources, resulting in decreased survival during smoltification, and increased susceptibility to freshwater predators. The central question underlying this theme is whether changes in any specific variable(s) in the freshwater environment provide concrete explanations for the observed trends in AYK Chinook and chum salmon abundance.

Projects addressing Theme 1 could include the following:

- Determine whether stocks when analyzed hierarchically by geography, show regionally coherent relationships with broad-scale freshwater or ocean indicators?
- Develop run forecasting tools that use freshwater or marine indicators to improve run size predictions.
- Examine multiple stressors in the marine or freshwater environments and determine which ones, either independently or interactively, may be associated with abundance and productivity of AYK salmon stocks.

THEME 2 – Drivers of Marine Mortality:

Have changing ocean conditions (physical and biological) in the marine environment increased mortality of Chinook and chum salmon and contributed to the decline of AYK stocks?

Description: Theme 2 examines the linkage between the dynamics of Chinook and chum salmon populations and environmental conditions that control growth and survival during the marine (including estuarine) component of their life cycles. During their marine life phase, changes in the physical environment (e.g., temperature) can affect salmon directly via physiological processes, or indirectly through changes in the food web. For example, decreased ocean upwelling can lead to lower primary and secondary production, leading to decreased food availability for juvenile salmon.

Changes in the biological environment, such as food web structure (i.e., prey, competitors (including hatchery fish), predators), can also affect feeding rates, marine carrying capacity and ultimately survival. Additional research is needed to improve our understanding of the role of environmental forcing on salmon population dynamics and, in turn, to develop the capacity to distinguish between freshwater and marine drivers of those dynamics.

Projects addressing Theme 2 could include the following:

- Determine whether food availability, changes in temperature (SST), or other variables appear to have affected marine survival of AYK salmon stocks during their first year at sea.
- Investigate whether competition with pink salmon and hatchery origin chum salmon affect returns of salmon to the AYK region.
- Has the proportion of AYK salmon catch in marine fisheries increased over the past decade and produced detectable changes in stock productivity estimated from inshore returns?

THEME 3 – Management for Sustainability Under Uncertainty:
What management approaches are likely to be most robust in light of uncertainties in our understanding of AYK Chinook and chum salmon populations dynamics?

Description: Scientific understanding of AYK ecosystems will always be incomplete and a mechanistic understanding of the causes of variation in Chinook and chum salmon populations may be sufficiently limited that prescriptive management approaches may not be the most effective. Theme 3 encourages, but is not limited to, retrospective and simulation studies assessing the performance of different management approaches for maintaining productive Chinook and chum salmon populations, and the fisheries they support, under varying levels of uncertainty and environmental change.

Projects addressing Theme 3 could include the following:

- Development and application of modeling approaches that evaluate risk under different management strategies
- Identify and address critical data uncertainties
- Develop alternative schemes for applying adaptive management to AYK Chinook and chum salmon.
- Improve run forecasting methods.
- Refine monitoring strategies to improve stock assessments and forecasting

THEME 4 – Human dimensions of salmon ecosystems
What information can be obtained from indigenous knowledge and recent community based observations to help explain the changes in salmon abundance?

Description: People and communities are integral components of salmon ecosystems. This theme encourages projects related to the human dimensions that characterize the nexus between human communities, research and monitoring, and salmon management (see Figure 1 below).

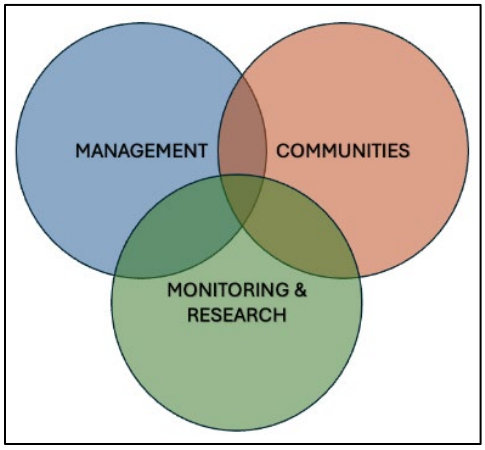


Figure 1: *Human dimensions of salmon ecosystems projects will address the nexus between communities, research and monitorina,*

Research and monitoring projects often benefit from engagement with and knowledge held by salmon-dependent communities. As long term, on-the-ground observers and users of salmon systems, local residents are important partners in documenting environmental history and change while also providing unique perspectives for developing research questions and improving engagement in salmon management processes. Subsistence users have an intimate connection to the landscape and to the food webs they use for fishing, hunting, and gathering activities. As such, special attention should be given to subsistence systems as a lens through which to evaluate the roles of salmon within this larger system.

This research could include documentation of Indigenous Knowledge of the freshwater ecology of salmon, improving harvest monitoring in specific locations and regions, and exploring approaches to adaptive management within larger political and socio-economic contexts. Studies of the feedbacks between the human dimensions of salmon ecosystems, states of the resource, and the management process are also desired. We encourage projects that are organized around motivating questions or hypotheses but acknowledge that much legitimate research studying the human dimensions of salmon ecosystems cannot be easily organized in this manner.

Projects addressing Theme 4 could include the following:

- What are the impacts of changes to harvest and use of chum salmon (e.g., harvest levels, specialization, sharing patterns) resulting from recent or older histories of resource decline and recovery?
- Using community-based harvest monitoring where possible, how can subsistence harvest documentation be improved in Arctic communities and rivers?
- What types of community-based observations provide insight in understanding the changing aspects of Chinook and chum salmon freshwater ecology in various tributaries to major AYK rivers (e.g., presence or spawning activity, heat stress and disease, changes in important habitats)?
- What adaptive management strategies can be identified that increase and improve community engagement through using management strategy evaluation or other participatory approaches to salmon management forums?
- What does Indigenous Knowledge predict will be the impacts of a changing climate on subsistence salmon fisheries, especially chum salmon?

THEME 5 – Assessing Risks to Chinook and Chum Salmon Stock Resilience
What are the viability risks to less productive populations within mixed-stock fisheries and how might they be protected by harvest management strategies?

Description: Chinook and chum salmon stocks in the AYK region are composed of numerous discrete spawning populations, many with varying phenotypes and life histories. This diversity of populations produces a stabilizing effect where unproductive populations are compensated by the more productive populations at any point in time, thereby stabilizing annual returns to the river. However, in these large complex watersheds, highly productive populations are harvested together with low productivity or low abundance stocks, which may cause the low productivity stocks to be at risk of unsustainable exploitation when part of mixed-stock fisheries. Recovering and managing at-risk stocks requires an understanding of the genetic and demographic thresholds for population viability as well as the best approaches for rebuilding and managing at-risk stocks.

Projects addressing Theme 5 could include the following:

- Assessing the population viability of small or currently less productive stocks in the region including the risks of overharvest and extinction.

- Identifying and describing management challenges such as bycatch and intercept fisheries, and management approaches to reduce those and other threats to less productive populations through the implementation of rebuilding actions and risk-averse harvest strategies.
- Developing improved genetic baselines for Chinook and chum populations by screening additional populations or identifying novel genetic markers to improve the accuracy, precision, and scale of stock composition estimates to inform stock assessment for AYK salmon fisheries.
- Testing the application of real-time genetic stock identification to address conservation and management challenges.

THEME 6 – Monitoring of Declined or Vulnerable Chinook and Chum Salmon Stocks
In what way has the abundance and productivity of Chinook and chum salmon changed over time based on traditional monitoring (e.g., weirs) and how do these compare to new monitoring approaches (e.g., drones)?

Description: This theme intends to promote the collection of systematic information to characterize changes in abundance and productivity of Chinook and chum salmon throughout the region as well as monitoring key freshwater or marine environmental conditions. Ideal projects will be those that integrate research with a monitoring project and provide a clear description of plans for long-term archiving of the data, including making them publicly accessible. Additional monitoring data should inform improved in-season management or lead to improved methods for run forecasting. Projects under this theme should focus on addressing monitoring data needs to assess risks to vulnerable Chinook and chum salmon stocks (see Theme 5 above). Monitoring, recovering, and managing at-risk stocks is critical to the overall recovery of salmon populations. This theme is not intended to provide replacement funding for existing long-term projects.

Projects addressing Theme 6 could include the following:

- Develop new or expand existing monitoring projects to assist in understanding and comparing spawner-recruitment dynamics via run reconstruction models and to detect changes in "quality of escapement" measures (age, sex, length) of Chinook or chum salmon populations.
- Develop new or expand existing monitoring projects to produce reliable estimates of Chinook and chum salmon in-season abundance and spawning escapements to strengthen and refine escapement models used to analyze spawner-recruitment dynamics or for forecasting.
- Develop and implement improved methods for providing in-season estimates of genetic stock composition of runs and harvests.
- Monitor impacts of heat-stress on Chinook and chum salmon migration and spawning.
- Monitor the distribution, abundance, condition, and survival of juvenile out-migrating Chinook and chum salmon.
- Use simulation approaches to evaluate alternative monitoring strategies with a goal of determining optimal data collection and spatial coverage protocols

AYK SSI 2025 DEADLINE & SUBMISSION INSTRUCTIONS

Deadline for submission is December 17, 2024, 5:00 PM (Alaska Standard Time).
In the interest of fairness, proposals submitted after the deadline will not be accepted or considered.

ONLINE SUBMISSION:

All investigators should submit their proposal via the AYK SSI Online Submission System (the link to the online system will be live starting December 1, 2024) on our AYK SSI Invitation to Submit Proposals web page and remain live until the proposal deadline at 5:00 PM (Alaska Standard Time) on December 17, 2024.

Prior to uploading proposal materials, investigators create an account in the AYK SSI Online Submission System. Investigator accounts will remain active until the submission deadline or until the full proposal package is finalized and formally submitted. Investigators will be required to use submission forms as well as to upload the proposal file(s). All proposals must be prepared using the format described below. Investigators will have the ability to modify any information provided to the system at any time prior to clicking on the final Submit button or until the proposal deadline.

Once all required fields are filled, a final submission and confirmation page will appear. Once the SUBMIT is clicked, no further changes or additions can be made to the submission; investigators will receive an email confirmation.

EMAIL SUBMISSION:

Email submission may be used in two circumstances:

1. If investigators do not receive an email within two hours after submission at the address provided during account creation in the AYK SSI Online Submission System.
2. If investigators are ultimately unable to use the Online Submission System.

If these circumstances apply, please email all required proposal documents to **Karen Gillis**, karen.gillis@bsfaak.org. Be sure to save a copy of the email confirmation received with this submission.

NOTE: Regardless of the chosen method of submission, **investigators must ensure written confirmation is obtained** for the successful submission of the proposal(s) prior to the deadline.

QUESTIONS ABOUT PROPOSAL CONTENT OR SUBMISSION PROCESS:

For questions regarding this invitation, please contact the AYK SSI Research Coordinator **Dr. Joseph Spaeder,** joespaeder@gmail.com, (907) 299-8635.

GENERAL INSTRUCTIONS:

- Submit proposals through the **AYK SSI Online Submission System**, the link to the online system can be found starting December 1, 2024 on the AYK SSI Invitation to Submit webpage.
- Proposal and Curriculum Vitae (CV) should be prepared and submitted in MS WORD using 11-point font. Include a one-page CV for each project investigator. CVs exceeding one page will not be accepted.
- Total length of the main body of the proposal, (Section II- Objectives and Project Design, excluding proposal summary, introduction, coordination, capacity building, budget pages, references and CVs), **should not exceed 12 pages**.

- Do not change font styles or sizes of the headings and subheadings of the form.
- Delete all investigator instructions (those comments/descriptions contained in brackets listed after each heading/subheading) from the form prior to submittal of the proposal.
- Rename and save the completed MS Word proposal narrative (using the template provided below) with a new file name that includes the last name of the PI (i.e. "2025 AYK SSI Proposal [PI Last Name here].doc"). When completed, upload this (MS Word) file along with the proposal budget and other required documents to the AYK SSI Online Submission System.
- Projects may start no sooner than **May 1, 2025** and end dates no later than **June 30, 2028**. A Final Report will be due within 60 days of project completion.

Investigators are invited to contact AYK SSI staff with questions:

- For questions regarding addressing program priorities, linkages to previously funded works, project collaboration and capacity building please contact the AYK SSI Research Coordinator: Dr. Joseph Spaeder, joespaeder@gmail.com, (907) 299-8635.
- For questions regarding the Excel budget forms, formatting or submission issues, please contact the AYK SSI Program Director: Karen Gillis, karen.gillis@bsfaak.org, (907) 279-6519 ext. 1.

Note to Federal Proposing Agencies: Federal agencies intending to submit proposals must seek prior written certification through AYK SSI as eligible to receive federal funding, if awarded. Please contact Karen Gillis, karen.gillis@bsfaak.org, 907-279-6519.

AYK SSI PROPOSAL TEMPLATE 2025

[NOTE: Delete instructions (i.e., those comments/descriptions contained in brackets after each heading/subheading below) from the form prior to submittal of the proposal. Replace these sections with proposal content.]

Project Title: [Limit title to 50 characters or less.]

Investigator(s): [Names of individuals proposing the project. Include affiliation and all contact information--address, phone, fax, and email. If multiple investigators are listed, indicate which individual will serve as the lead investigator or project manager. Please be aware, email will be the primary method of communication regarding the status of proposals.]

Project Period: [Successful proposals submitted for the 2025 AYK SSI funding cycle will be funded up to three years. Applicants should not request a project start date before **May 1, 2025.** All projects must be completed on or before **June 30, 2028**. Final project reports are due 60 days after the project end date.]

AYK SSI Funding: [Total amount of AYK SSI funding requested.]

Matching Funds: [Encouraged but not required. List the source and amount of funds that are already secured from non-AYK SSI sources, if any, and will be applied to the proposed project, including in-kind contributions and/or donations.]

Study Location: [General geographic area in which field work will be conducted, including the watershed and tributary as appropriate (e.g., Kwethluk River watershed.) If other areas of the state may be impacted by this study, please list these areas as well.]

Abstract: [Provide a brief (300 words or less) summary of the project in language understandable to audiences unfamiliar with the subject area. The abstract may be edited for clarity, brevity, and readability by AYK SSI staff. The abstract should be suitable for reports to Congress, the Alaska State Legislature, and the public. The abstract should include a short synopsis of the following:

a) The issue addressed and why the project is needed
b) Project hypotheses and objectives (see instructions for drafting research and monitoring project objectives below)
c) Overview of research and monitoring methods
d) Anticipated impacts/outcomes, and any measurable benefits.]

[If this information exceeds one page, please set a page break at the end of the additional page(s).]

AYK SSI PROPOSAL FORMAT 2025

I. INTRODUCTION

[Provide the background and overview of the proposed work. What problem is the project designed to address? Describe the background and history of the problem. Review the scientific literature covering the most important works related to the project. The purpose of this overview and literature review is to place the proposed project in the larger context of what work has been done, what is known, and what remains to be known.]

II. PROJECT DESIGN

A. Objectives and Project Design: [Note: Section IIA- Objectives and Project Design (excluding proposal summary, introduction, coordination, capacity building, budget pages, references and CVs), constituting the main body of the proposal, **should not exceed 12 pages**.]

1. **Rationale & Project Research/Monitoring Question:** [Briefly describe the rationale for the project, stating what the project will accomplish and why it is important in helping to restore Chinook and/or chum salmon fisheries, helping to understand the current drivers of decline and/or helping prevent a similar Chinook and/or chum salmon failure in the future. State the central research/monitoring question that will be addressed through the project, along with any related project-specific hypotheses. A good question should be narrow enough to address specific issues, but not so narrow that it can be addressed with a yes or no answer or the gathering of a few statistics. A well-thought-out and focused research/monitoring question leads directly into project hypotheses--about the nature and direction of the relationship between two or more variables. (Example questions are found in Chapter 5 of the AYK SSI Chinook Salmon Research Action Plan (downloadable here.) Once research/monitoring questions and hypotheses are formulated, objectives can be developed (see below).]

   [Note to PIs of active or recently completed AYK SSI funded projects: If investigators are seeking funding for a project that links to, extends, or compliments an active or recently completed (within the last two years) project this section is required. Please provide a clear description of the progress and findings to date and explain how this proposed research / monitoring project will inform and/or advance the existing or recently completed AYK SSI project.]

2. **Project Objectives:** [Numerically list (in the sequence of their completion) research / monitoring objectives. Objectives flow directly from the core question(s) stated above. Many proposals fail to be recommended for funding because of poorly formulated objectives. Objectives are **not** methodological steps or lists of tasks (e.g., collect data, conduct experiments, analyze data, write report.) Objectives identify a pattern or process to be described and can be used to evaluate research progress. Objectives should be worded to reflect the question(s) above to be answered, the hypotheses to be tested, or the processes to be described. Objectives are the fundamental and measurable goals of the proposed work; the project objectives are what AYK SSI uses to evaluate progress and completion of the project. When little information exists to formulate questions and hypotheses then research / monitoring objectives focused on description are appropriate. See **"Guidelines for Drafting Project Objectives"** below.]

3. **Project Responsiveness to AYK SSI 2025 Research & Monitoring Themes:** [Clearly identify which of the AYK SSI 2025 Priority Research /Monitoring Theme(s) will be addressed through the project and briefly describe how, through implementation of the project objectives, your understanding of one or more of the priority themes will be advanced.]

4. **Methods:** [Provide a concise overview of proposed methods, including the approach to achieving project objectives. Then, for each objective listed above, include study design, data collection procedures and analytical methods. Clearly identify the specific set of procedures needed to

accomplish each objective. As appropriate, describe the statistical or conceptual model that is the basis for the work; including the experimental design, assumptions required, sample size and other relevant information. We encourage limiting this section to approximately three pages. However, this section should contain enough detail to allow a reviewer to understand how the study will be conducted, including how data will be collected and analyzed. Note: to improve clarity, the Methods section may be divided into subsections, which represent different objectives of the study.]

5. **Results/Deliverable Products:** [Describe the project results and the products to be provided at the conclusion of the study, as well as their estimated completion date. Depending upon the specific study, deliverables may also include such products as electronic databases, graphics, or meetings. AYK SSI encourages funded investigators to publish the results of their work in peer-reviewed journals. **AYK SSI reporting requirements include**: Semiannual Progress Reports, and a Final Project Report describing fulfillment of objectives including an abstract, introduction, methods, results and discussion. The Final Project Report is due within 60 days of the project end date. Specific details about format, distribution and peer review of final reports can be found on our website (www.aykssi.org) and will be addressed during development of funding contracts for successful proposals.]

6. **Milestones/Project Timeline:**
   a. [Using the example format below specify when each project objective will be completed. Reviewers will use this information along with annual project reports to assess whether PIs are meeting objectives and are eligible for continued funding.]

[**Example:**
Objective 1. Develop sediment-core chronologies in lake-productivity indicators. To be met by October 2025

Objective 2. Compare sediment data corresponding to the past few decades to salmon population statistics. To be met by February 2025.

Objective 3. Reconstruct time-series of lake productivity, input of marine-derived nutrients, and salmon escapement. To be met by May 2026.]

   b. [Estimate the beginning and completion dates for critical segments of the study, including all deliverables, and provide this information in tabular form following the examples below.]

Sample Project Schedule (Example project period 05/01/24 through 04/30/27):

TASKS [Example only; insert tasks & details appropriate to the project.]	**2025**	**2026**	**2027**
Start-up phase	May - June		
Data Collection	June - Sept	June - Sept	
Data Entry & Analysis	Sept - Dec	Sept - Dec	
Grant Report Due (semi-annual)	July	Jan & July	Jan
Report Writing			April - June
Submission of Final Report	Final Report due June 30, 2027		

7. **Performance Ability and Administrative Expertise:** [Briefly summarize the investigators' and/or organization's experience in performing work similar to that proposed here. Past reports or professional journal articles by the investigators relevant to this proposal should be cited, and unpublished work should be briefly described as it relates to the investigators or organization's ability to accomplish the objectives. Describe the field capabilities needed to carry out the study when equipment or technologies are essential components to conducting a study (e.g., sonar equipment, shop facility for weir fabrication, drift gillnet boats). Describe the organizational ability to carry out the administrative aspects of the project. Other evidence of performance ability may be attached as an appendix to the proposal. Investigators' performance ability and administrative expertise will be evaluated on the following:
    a. History of investigators' performance on past AYK SSI projects (if applicable).
    b. Individual qualifications of each investigator (including field capabilities as applicable) and their role in the project.
    c. Technical and administrative expertise of the applicant organization to complete the work.
    d. Summary of experience.
    e. Relevant past reports and articles.]

8. **Coordination and Collaboration with Other Efforts:** [Describe the relationships and links between the proposed project and other relevant projects in progress in the AYK region. Indicate how the proposed project relates to, complements, or includes collaborative efforts with other proposed or existing projects in the same geographic or topical area. Describe any coordination that has taken place, or will take place, and the form of the coordination (e.g., shared field sites, research platforms, sample collection, data management, equipment purchases, etc.). If the proposed project requires collaboration with other agencies, organizations or scientists to accomplish the work, such arrangements should be fully explained. If the relationship with other proposals is unknown, or if the proposal conflicts with another project, note this and explain why.]

B. Capacity Building: [The purpose of this section is to ensure appropriate community awareness of the proposed work, and when possible, opportunities for local or regional, community, and Tribal capacity building have been designed into the project. Projects must include appropriate partners and contribute, to the maximum degree possible, to the capacities of agencies, local communities, and residents of the region to participate in fishery research / monitoring. Prior to submission, principal investigators must have completed appropriate consultation about their project with local Tribes and/or communities in the area where the project is to be conducted (letters of support from local organizations are strongly encouraged and add to the strength of a proposal). As appropriate, investigators and their organizations should be able to demonstrate the ability to create and/or maintain effective relationships with local communities/organizations and a commitment to capacity building.

Please provide, as applicable:

- List the local communities involved at some level with the project and/or projected realized benefits from the project. Projects taking place within the Kawerak region are expected to follow this document: https://kawerak.org/download/kawerak-region-tribal-research-protocols-guidelines-expectations-best-practices/?tmstv=1712337991

- Description of consultations conducted as part of planning the project.
- Present a plan for how this study will develop partnerships and build the capacity of individuals, agencies, and organizations in the region to meaningfully participate in fishery research / monitoring activities. Indicate whether this study would provide opportunities to develop professional capabilities and administrative skills of agencies and organizations in the region.

For additional detail on this topic, see "**Guidelines for Capacity Building in the AYK SSI Program" below.**]

C. Matching Funds/Partner Contributions: [Matching funds are encouraged, not required. Please describe how the matching funds will be used in the project. What other entities, if any, have committed funding or are likely to fund the project being proposed? If the proposal has been submitted to other potential funding sources, please describe to which source(s) the project was submitted, when a funding decision will be made, and - in the event other funding is approved - whether AYK SSI funds will also be needed.]

III. BUDGET

[**NOTE**: Investigators must prepare budgets using the **2025 AYK SSI Budget Forms,** (MS Excel file). Instructions are provided on each budget worksheet. **Keep all worksheets in the same Excel workbook**, rename the Excel workbook with a new file that includes the last name of the PI (e.g. "2025 AYK SSI Budget Forms [PI Last Name here].xls"). When completed, this Excel file will be uploaded along with the proposal narrative and other required documents to the AYK SSI Online Submission System.]

A. Project Costs: [Describe and justify the budget for each organization or agency requesting funding in this proposal using the mandatory budget categories and forms included in the MS Excel document. **NOTE: 10% of the total project funds will be held back pending submission of the Final Project Report**.

Investigators must include in the proposal detailed narrative below text for each category providing a clear and complete explanation and/or process for how the funds will be used and/or allocated. Narrative totals must equal exactly the figures in the Excel budget form.]

- **100 - Personnel (including Fringe Benefits):** [Include the salary detail for all employees assigned to this project. Explain the duties for everyone identified by name and position. State the time commitments in hours and percent of time for each position. List the total charges for each person. Include all fringe benefits in correlation to the employee's hourly wage and the number of hours to be worked in association with the proposed project. Identify what types of fringe benefits are being covered. Describe the total charges for each person listed along with an explanation of how the charges were calculated. Based upon guidance from NOAA, federal salaries are only allowable for nonpermanent positions hired or retained specifically for the project.]

- **200 - Travel:** [These costs include lodging, airfare, per diem, ground transportation and other directly related expenses incurred while traveling for the purpose of the proposed project. Include each traveler's name, dates of travel, purpose of travel, destination, and itemized costs to include lodging, airfare, per diem, ground transportation, etc. Identify why the requested travel is directly relevant to the successful completion of the project. If there are any actual trip details, which remain unknown, please explain the basis for the proposed travel charges. Alcohol purchases are not allowed. Meals or catering expenses are allowable for "working" breakfasts or lunches, provided costs are reasonable. As a guide to determining reasonable costs, please see the federal per diem rates. Meal per diem costs may not be claimed for participants provided breakfasts or lunches (i.e., no double funding of meal costs). **NOTE:** During the final year of the project, applicants must include in their travel budget the costs for at least one representative of the project to attend an annual AYK SSI meeting to present their results. Principal investigator(s) should cooperate with AYK SSI staff in developing materials for interpretation of the project results to the public.]

- **300 - Contractual:** [Include all expenditures associated with contract-related activities that are directly associated with the proposed project. List each contract as a separate item. Describe the applicability to the project for each contract to be acquired. Contracts approved in the statement of work for the purpose of completing one or more specific tasks required by the project are allowable. Entering into contracts with contractors not identified in the statement of work requires prior approval from AYK SSI. Subrecipients are responsible for ensuring their contractors comply with all applicable federal terms and conditions. Subawarding any AYK SSI funds to another entity is typically not allowable (i.e., competitively or non-competitively providing funds to another organization to perform a substantial, programmatic portion of the project).]

- **400 - Supplies:** [Include a description of all equipment that individually costs under $5,000 and miscellaneous supplies and materials required for the purpose of the proposed project. Itemize supplies by type of material or nature of expense. Identify how the proposed supplies are necessary for the successful completion of the project.]

- **500 - Equipment:** [Include items that individually cost more than $5,000. For any items of equipment whose costs exceed $5,000, a description of the item and associated costs is required. List each item of equipment being requested. For each item of equipment, please identify the number of units, cost per unit and total cost specified. Explain why each item of equipment is necessary for the successful completion of the project.]

- **600 - Indirect Costs:** [These are costs incurred by the investigating organization as a result of administering the proposed project but not directly associated with project implementation. Indirect costs generally include space rental, utilities, postage, data processing, training, safety management, affirmative action programs, administrative support, and supervisory oversight. **NOTE:** All proposals which include indirect costs must include copy of the approved negotiated indirect cost rate document or similar verifying indirect rates as part of the proposal package. Our intent is that institutions undertaking research / monitoring apply funds to expenses directly related to the project and could complete the project with low indirect cost rates.]

B. Matching Funds/Funds other than AYK SSI: [Matching funds or cost-sharing is encouraged but not required for this program. However, proposals must reflect the total budget necessary to accomplish the project, including in-kind contributions and/or donations. List the source and amount of funds already secured from non-AYK SSI sources, if any, which will be applied to the proposed project. See additional information/instruction in the budget forms.]

IV. LITERATURE CITED: [Provide complete citations for all references cited in the proposal.]

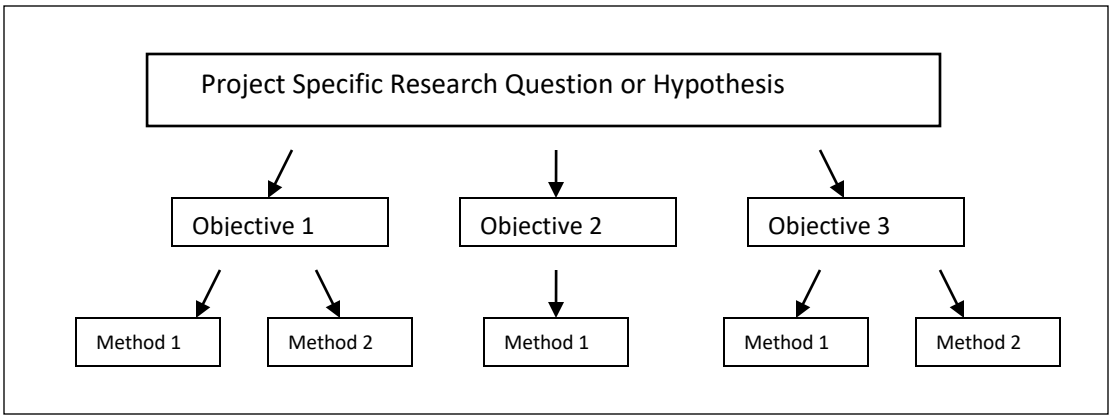
Guidelines for Drafting Research Project Objectives

These guidelines are designed to provide direction and assistance for drafting objectives for fishery research proposals. Clear objectives are fundamental to the project design and provide the framework for evaluating project performance. **Many proposals do not score well due to poorly formulated objectives.**

All research projects begin with either a well-framed research question or hypothesis, from which flows the research objectives. Hypotheses are possible explanations for a phenomenon whereas predictions are what you expect to occur if a hypothesis is true. Hypotheses are not to be interpreted as statements of fact but are propositions about how the salmon system may work – a hypothesis may be true or it may be false. A good hypothesis or research question should be narrow enough to address specific issues but not so narrow it can be addressed with a "yes" or "no" answer or the gathering of a few statistics. Once one or more research questions or hypotheses are formulated, research objectives can be developed.

Objectives identify a pattern among a set of variables or a process to be described and can be used to evaluate research progress. Objectives should be worded to reflect or link to the research questions to be answered, the hypotheses to be tested, and the processes to be described. Good research objectives often begin with the phrase "To determine whether …". A set of objectives are ideally related to each other. Objectives should relate directly to the research question or problem; generally, they address types of information or datasets needed to address the question or problem. They define what will be accomplished by a given point in time. Research objectives should not include descriptions of how they will be accomplished; those objectives are **not** methodological steps (e.g., collect data, analyze data, write report). This information is presented in the methods section. When little information exists to formulate questions and hypotheses then research objectives focused on description of what is to be achieved are appropriate.

In the methods section, describe discrete, specific methods or tasks for accomplishing each objective. The methods should clearly articulate and demonstrate that they will yield the information needed to accomplish the research objectives. The figure and examples below illustrate how the methods and objectives relate to the research question or problem.



HYPOTHETICAL EXAMPLE #1: HYPOTHESIS-OBJECTIVES-METHODS:

Hypothesis or Research Question:

> Marine survival and growth of salmon varies due to density-dependent processes of competition and predation among salmon species and to climate change.

Objectives:

- To determine whether changes in the abundance of pink salmon and climate change are associated with changes in growth and abundance of Norton Sound chum salmon.
- To determine whether changes in the abundance of pink salmon are positively correlated with growth and abundance Unalakleet River and Kuskokwim River coho salmon.

Methods:

1. Reconstruct annual and seasonal growth indices of Takotna River chum salmon, 1975-2006, based on scale pattern analysis.
2. Reconstruct Norton Sound adult chum salmon returns from each brood year using recently assembled age composition data, predictions of age composition from long-term age composition datasets, and available catch and spawning escapement data for each watershed in Norton Sound.
3. Reconstruct annual and seasonal growth indices of Unalakleet River coho salmon, 1983-2006, and Kuskokwim coho salmon, 1967-2006, based on scale pattern analysis.
4. Assemble indices of Bering Sea climate change (e.g., seasonal SST, Nome seasonal air temperature, date of ice breakup in Bering Sea, Arctic Oscillation Index, PDO, and regime shifts).
5. Etc……

HYPOTHETICAL EXAMPLE #2: RESEARCH QUESTION-OBJECTIVES-METHODS:

Hypothesis or Research Question:

How do ecological processes regulate population size and generate annual variability in the abundance of adult Chinook salmon?

Objectives:

- Determine whether density dependent mortality is due to mainly to competition for spawning habitat or to competition between juveniles during summer rearing.
- Determine how seasonal patterns of stream discharge and other environmental variables affect food production and the area and quality of profitable and safe feeding habitat.
- Determine how food abundance and water temperature interact to influence growth rate, energy reserves, and marine survival.

Methods:

1. Survey the longitudinal distribution and density of spawners, fry, and fingerlings to assess and select study reaches.
2. Estimate adult abundance from mark-recapture experiments, plus historic weir and tower counts.
3. Estimate total egg deposition from estimates of adult abundance and redd counts, combined with historical age-sex-length data.
4. Use bioenergetic modeling to investigate the relationship between food intake, water temperature, growth rate, and energy reserves.
5. Assemble existing date, augmented with new data, to assess stream flow, flow history, season, temperature, light intensity, turbidity, and nutrient inputs.
6. Test hypotheses about the way ecological processes generate annual variations in the abundance of Chinook salmon using modeling and retrospective analysis.

AYK SSI PROPOSAL REVIEW PROCESS 2025

Upon receipt, AYK SSI staff will complete an initial review of proposals for missing components and conformance to the formatting requirements below. Applications that do not conform to the requirements may not be considered for further evaluation. We will screen applicants against the federal exclusions database to ensure that proposals from ineligible organizations are not advanced for review.

The AYK SSI Scientific Technical Committee will conduct detailed technical review of proposals supplemented by external peer reviews. The Committee will evaluate proposals using the following evaluation criteria:

Scientific Evaluation Criteria:

1. Project Responsiveness to AYK SSI Research Priorities. Proposals will be evaluated to determine if they clearly respond to the research priorities established by the AYK SSI.

2. Soundness of Project Design and Methods. Strengths and/or weaknesses of study design will be evaluated in relation to achieving productive results.
   - Has the applicant provided sufficient information to evaluate the project technically?
   - Are the proposed methods and experimental design appropriate to accomplishing the objectives?
   - Is the project technically feasible? What is the probability that the objectives will be achieved?

3. Capacity Building. Applicants must demonstrate they have made appropriate consultations with local communities and have planned for capacity development. Projects must include appropriate partners and contribute, to the maximum degree possible, to the capacities of local communities, organizations, and residents of the region to participate in fishery research. A plan outlining how this project will contribute to developing partnerships and building the capacity of individuals, agencies, and organizations in the region should be included. Proposers should have completed consultations with local communities or partnering organizations prior to proposal submission.

4. Coordination/Experience and Qualifications of Personnel. The experience and qualifications of the project's principal investigator and personnel will be evaluated. Applicants must demonstrate they are aware of other past and ongoing research related to the proposed work and discuss how they will coordinate and collaborate with related projects.
   - Are the proposed research personnel and equipment appropriate to achieve the objectives? Are other types of expertise missing?
   - To what degree are the investigators qualified by education, training, and/or experience to conduct the proposed research?
   - Does the proposal demonstrate awareness of similar work being conducted elsewhere?

5. Project Costs/Timeline. The justification and allocation of the budget in terms of the work to be performed will be evaluated. Unreasonably high or low project costs will be taken into account.
   - Is the budget appropriate for the research proposed?
   - What is the probability that objectives will be achieved in the time frame proposed?

Guidelines for Capacity Building in AYK SSI Research Program

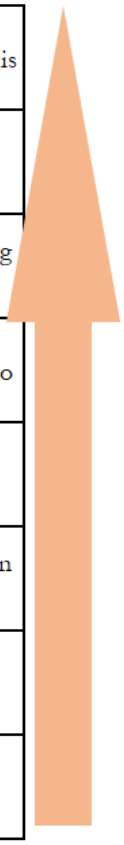
Within the AYK SSI research program capacity building refers to "….*the process by which rural / Tribal groups, organizations, and NGO's expand and develop technical and administrative abilities enabling them to participate in a range of fisheries research activities to the maximum level they desire."* (see https://doi.org/10.5751/ES-12960-270134)

Projects must include appropriate partners and contribute, to the maximum degree possible, to the capacities of Tribes, local communities, organizations, and residents of the region to participate in fishery research. Proposers must list Tribes and communities that are near or adjacent to a project, who express interest in a project, or may be affected by the project in other ways by the project or realize benefits from the project and describe consultations have been conducted as part of planning of the proposed work. A plan should be described for how this project will contribute to developing partnerships and building the capacity of individuals, agencies, and organizations in the region.

The graphic below illustrates a continuum of capacity building as measured by levels of local or regional organizational involvement in research projects and will be used to evaluate the Capacity Building criterion above. Investigators are encouraged to develop the highest level of community and regional involvement that is reasonably practical to their project. Proposals that involve high levels of community involvement will rank high for this component. Not all research methods or projects lend themselves to contributing to regional or local capacity building.

Capacity Building as Measured by Levels of Community Involvement in AYK SSI Projects [1]

8 Community Control	Projects are locally derived, administered and managed, full responsibility for project management is delegated to or assumed by the community
7 Partnerships	Partnership of equals between state and federal agencies and local users; joint decision making institutionalized
6 Collaboration	Community is involved in policy and decision making about project objectives
5 Cooperation	Use of local knowledge and local research assistants; some Research/assessment activities are contracted to local groups
4 Developing Partnerships	Partnerships in project development may start; common objectives sought
3 Communication	Two-way communication begins; research plans begin to include and reflect local concerns
2 Consultation	Communities/organizations are consulted on projects; feedback from research findings go to community
1 Informing	Communities/organizations are informed about projects; communication is one way



1. Cannon, R., A. Craver, M. Rearden, T. Roettiger, C. Schleusner, B. Spangler, P. Wheeler, and D. Wiswar. 2005. Capacity Building in the Fisheries Resources Monitoring Program: A Guiding Document for Project Investigators. U.S. Fish and Wildlife Service, Office of Subsistence Management, Anchorage, Alaska. 6 p.