

FISHERIES RESOURCE MONITORING PROGRAM SOUTHCENTRAL ALASKA REGION OVERVIEW

Since the inception of the Monitoring Program in 2000, a total of 54 projects have been funded in the Southcentral Region at a cost of \$16.9 million (**Figure 1**). Alaska rural organizations and U.S. Department of Interior agencies have had the most projects funded in the region, followed by the State of Alaska, the U.S. Department of Agriculture, and other organizations (**Figure 2**). See **Appendix 1** for more information on Southcentral Alaska Region projects completed since 2000 and a list of all organizations that have received funding through the Monitoring Program.

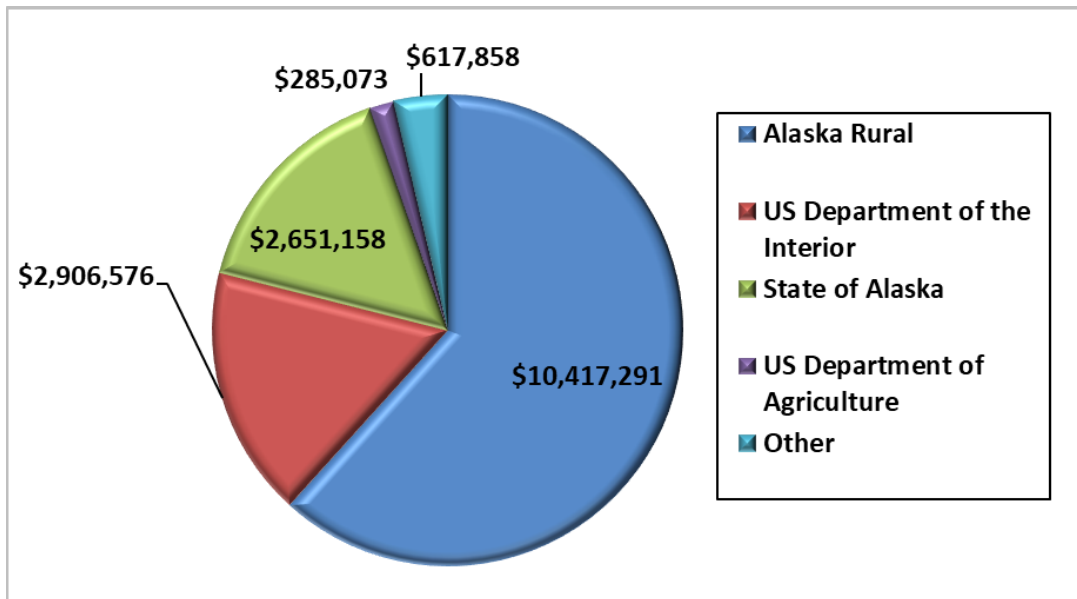


Figure 1. Monitoring Program fund distribution since 2000 in the Southcentral Region.

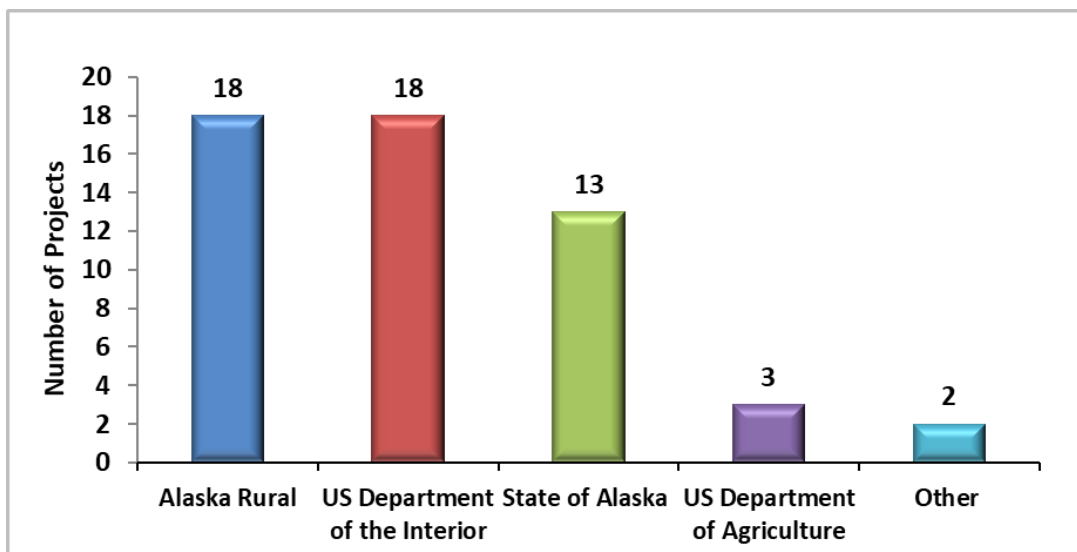


Figure 2. Number of Monitoring Program projects funded since 2000 in the Southcentral Region.

PRIORITY INFORMATION NEEDS

The 2026 Notice of Funding Opportunity for the Southcentral Alaska Region contained the following six priority information needs developed by the Southcentral Regional Advisory Council:

- Estimate Chinook, Coho, and Sockeye salmon escapements into the Copper River drainage and delta systems with a high degree of certainty (for example, projects utilizing weir, sonar, and/or mark-recapture methods).
- Collect baseline information of juvenile Chinook, Coho, and Sockeye salmon outmigration including abundance, and/or timing, condition, and mortality across the unique sub-watersheds of the Copper River and the Kenai Peninsula drainages.
- Understand food web dynamics and factors affecting early marine survival rates of southcentral origin wild Chinook and Coho salmon stocks including variables such as primary food resources and prey availability, competition with hatchery produced salmon, and prey buffering during periods of high/low abundance.
- Understand effects of environmental and/or climate change on stock specific migration timing and abundance of juvenile and adult salmon, as well as the implications for harvest management, in the Copper River and Kenai Peninsula drainages.
- Estimate measures of abundance, and/or run timing, spawning site fidelity, fecundity, age, sex, and length composition for Chinook, Coho, and Sockeye salmon in the Copper River or Kenai Peninsula drainages.
- Identify and understand sources of inriver mortality (e.g. predation) on adult Chinook and Sockeye salmon as they migrate upstream within the Copper River drainage.

2026 MONITORING PLAN DEVELOPMENT FOR THE SOUTHCENTRAL REGION

For the 2026 Monitoring Plan, three proposals were submitted for the Southcentral Region (**Table 1**).

Table 1. Projects submitted for the Southcentral Alaska Region, 2026 Monitoring Plan, including project duration in years and total funds requested.

Project Number	Title	Project Duration (Years)	Total Project Request
26-501	Klutina River Salmon Monitoring Program: Estimating spawning escapement on a major salmon producing drainage of the Copper River	4	\$824,991
26-502	Abundance and Run Timing of Adult Salmon in Tanada Creek	4	\$475,278
26-504	Inriver Abundance of Copper River Chinook Salmon	4	\$940,000

Project Number	Title	Project Duration (Years)	Total Project Request
Total			\$2,240,269

EXECUTIVE SUMMARY AND TECHNICAL REVIEW COMMITTEE JUSTIFICATION

The following executive summaries were written by the principal investigators and submitted to the Office of Subsistence Management as part of a proposal package. It may not reflect the opinions of the Office of Subsistence Management or the Technical Review Committee. The executive summary may have been altered for length.

Technical Review Committee justifications are a general description of the committee's assessment of proposals when examining them for strategic priority, technical and scientific merit, investigator ability and resources, partnership and capacity building, and cost/benefit. More in-depth reviews are provided to investigators following project selection.

Investigator Submitted Executive Summary:

Project Number:	26-501
Title:	Klutina River Salmon Monitoring Program: Estimating spawning escapement on a major salmon producing drainage of the Copper River
Geographic Region:	Southcentral Alaska
Data Types:	Stock Status and Trends
Principal Investigator:	Dan Gorze (AITRC)
Co-investigator:	Matt J. Piché (Native Village of Eyak)
Project Request:	2026: \$215,320 2027: \$211,910 2028: \$197,434 2029: \$200,327
Total Request:	\$824,991

Issue: A decrease in Copper River salmon productivity and altered spawner-recruit relationships are a cause for concern. Sustained low salmon returns, despite achieving in-river goals in most years, and poor performance of forecast models, have resulted in an increasingly precautionary approach to Copper River fishery management.

The authors of this proposal intend to increase the quality and quantity of data available for Copper River fisheries management by assessing annual spawning escapement on one of the six major salmon producing tributaries of the Copper River. The utility of tributary-based salmon monitoring data is dependent upon; 1) the potential productivity and related proportions of system-wide abundance capable returning to the area of study, and 2) the effectiveness of the monitoring effort to provide a reliable

escapement estimate that is comparable across study years. These contingencies can be addressed through careful site selection and study design.

The Investigators' previous Klutina River Sonar Pilot Study (FRMP #20-510) assessed site locations and validated high-resolution multi-beam sonar as a suitable method for monitoring salmon spawning escapement on the Klutina River (Piché and Gorze 2023). Sonar operations occurred in 2022 from 16-June through 11-August and in 2023 from 4-June through 26 August at a location approximately 9.4 river kilometers (rkm) from the confluence with the Copper River. Salmon spawning within the Klutina River occurs above this sonar study site. Sonar downtime was limited to 1.3% of total operating hours in 2022 and 1.2% in 2023. A total of 85,092 salmon were estimated migrating within range of the single ARIS sonar on the north bank of the Klutina River in 2022 and 100,212 in 2023. Large Chinook salmon apportionment of the passage data is ongoing. Expansion of sonar operations are proposed within this funding request to include the addition of a sonar on the south bank of the Klutina River. Feasibility data supports project development beyond the pilot study phase with full-scale high-resolution sonar operations on both banks of the Klutina River to estimate the entirety of the Klutina Sockeye Salmon and Chinook Salmon runs. This project will provide annual spawning escapement and run timing of Klutina River Sockeye Salmon and Chinook Salmon, establishing a tool for stock assessment and management. As the dataset grows, stock-specific spawner-recruit models will be developed, providing additional opportunities to assess variables critical to Copper River salmon productivity that are inherently difficult to assess at the system-wide level due to climate related dampening effects of the system-wide habitat mosaic. Population status of Klutina River salmon will be assessed while tracking changes over time to enhance our understanding of how Copper River salmon will fare in the future, particularly on similar drainage types such as the neighboring Tonsina and Tazlina drainages. Additionally, Klutina River salmon abundance combined with mixed-stock abundance at Miles Lake Sonar and Baird Canyon Mark-recapture projects will provide data on stock contribution to the overall Copper River salmon run. Lastly, this data provides the ability to assess feasibility of tributary specific escapement goals on the Copper River.

Objectives: 1.) To estimate Klutina River spawning escapement of Sockeye Salmon and Chinook Salmon such that the estimate is within 10% of the true value 95% of the time, 2.) determine Sockeye Salmon and Chinook Salmon run timing on the lower Klutina River.

Methods: High-resolution imaging sonars will be placed on opposite banks of the Klutina River pointing toward the thalweg at a location 9.4 river kilometers (rkm) upriver from the Klutina River's confluence with the Copper River. No Klutina River salmon have been documented spawning below this point, therefore the entirety of the Klutina salmon run will be available to count as they migrate past this location. Sonar operations will begin in early June to ensure the start of the salmon run is represented. Run timing will continue to be assessed during pilot project operations in 2023. Sonar operations will continue until passage slows and daily counts represent less than 1% of the total count for at least seven consecutive days. This is a necessary shift in protocol resulting from knowledge gained in the pilot study, when in 2023, 33% of the estimated fish passage occurred after protocols would have dictated ceasing operations as more than *three* (five) consecutive days of less than 1% total count were observed. This roughly 90-day timeframe is expected to cover the duration of the Sockeye Salmon and Chinook Salmon

run. Each sonar transducer lens will be pointing toward the center of the river and angled down to ensure a viewing profile maximizing riverbed contact to ensure all fish that pass will be seen. Sonar software (ARIScope version 2.8) will be used to record data. Each recording will be sampled every hour in 10-minute increments. The 10-minute increments allow for a systematic sampling method for analysis while minimizing the data file size in the event of a corrupt file or data loss. Pilot study data indicated a 10-minute per hour subsample of each non-overlapping recording range will accurately estimate salmon escapement. This assumption will continue to be tested. Computer software (ARISFish version 2.8) will be used to analyze data. The net upriver movement of fish will be tallied during a 10-minute period per hour, and the hour-long total estimated passage will be this number expanded by a factor of six. Daily passage will be an estimate of the totaled 24-hour periods (00:00 – 23:59). Weekly passage (00:00 Sunday through Saturday 23:59) will be the combined daily passage estimates for that week. Net movement is defined as the sum of positive upstream and negative downstream fish movements. Net movement can easily be obtained given the capabilities of the multi-beam sonar. If overall passage rates are lower than anticipated, it may be statistically necessary to expand the hourly passage count from 10-minutes to 20-minutes or more. The proposed study design accounts for this uncertainty in density dependent variability in our expansion estimates. The opportunity to adjust fish passage counts from 10 to 60-minutes per hour can be calculated at any point throughout the study. This will ensure project objectives are met regardless of run strength.

Partnerships/Collaboration: Over the past eighteen years Native Village of Eyak's Department of the Environment and Natural Resources (NVE-DENR) has pioneered a successful capacity building model utilizing consultations and partnerships between Alaska Native Organizations, Tribal Governments, ANCSA Corporations and State and Federal Agencies to conduct high quality research culminating in the development of the joint pilot study proposal between Ahtna Intertribal Resource Commission (AITRC) and NVE. NVE and AITRC have decided together that AITRC has gained the capacity and knowledge necessary for the success of this project through the mentorship of the pilot study, and that AITRC should assume the role of P.I. for this project. Our combined long-term goal is to develop methods to economically monitor spawning escapement on all major Copper River tributaries. This project is an important first step.

Technical Review Justification: The investigation plan requests four years of funding to assess annual salmon spawner escapement on the Klutina River using high-resolution imaging sonars. The Federal linkage is clear, and this project addresses a 2026 Priority Information Need for the Southcentral Region. The data collected for this study will provide annual spawning escapement and run timing of Klutina River Chinook and Sockeye Salmon, establishing a tool for stock assessment and management. The investigators have the necessary experience to complete this project, and the project is technically sound. The project builds meaningful capacity within Ahtna Intertribal Resource Commission and strengthens its partnership with the Native Village of Eyak. The investigation plan includes both a local hire and ANSEP intern. The project received letters of support from the Alaska Department of Fish and Game and Wrangell-St. Elias National Park.

Investigator Submitted Executive Summary:

Project Number:	26-502			
Title:	Abundance and Run Timing of Adult Salmon in Tanada Creek			
Geographic Region:	Southcentral Alaska			
Data Types:	Stock Status and Trends			
Principal Investigator:	Dan Gorze (AITRC)			
Co-investigator:	Dave Sarafin (Wrangell-St. Elias National Park and Preserve)			
Project Request:	2026: \$199,593	2027: \$115,386	2028: \$118,525	2029: \$121,744
Total Request:	\$475,278			

Issue: Sockeye Salmon (*Oncorhynchus nerka*) returning to Tanada Lake provide Federal subsistence harvest opportunity throughout the Upper Copper River District, the Lower Copper River area, and in the vicinity of Batzulnetas along Tanada Creek, a tributary located upriver of the district (Figure 1). These salmon stocks are targeted and exposed to much higher levels of harvest from State commercial fisheries in marine waters near the mouth of the Copper River and additional inriver State fisheries. Sockeye Salmon populations of the uppermost tributaries are of particular importance to the Federally qualified subsistence users who traditionally fish in upper areas of the Upper Copper River District. Tanada Lake stocks are of the uppermost runs of Sockeye Salmon in the Copper River and support additional Federal subsistence harvest in the vicinity of Batzulnetas near the mouth of Tanada Creek.

Recent concerns of inadequate numbers of salmon reaching the spawning grounds for sustaining this fishery resource have been expressed by stake holders to in-season managers. The Ahtna Intertribal Resource Commission (AITRC) in partnership with Wrangell-St. Elias intends to continue the long-term data set of Tanada Creek salmon escapement and run timing to help inform responsible management.

Objectives:

1. Estimate by day, the number of adult Sockeye Salmon and Chinook Salmon migrating past a weir operated in Tanada Creek during the period of mid-June through mid-September; and
2. Incorporate annual monitoring data into a data set that can serve as a basis for evaluating long-term patterns in salmon escapement in relation to long-term data for environmental drivers and downstream fisheries management, and thereby aid in determining whether current management strategies are adequate for ensuring the conservation and continued viability of this important index stock.
3. Explore the viability of the use of artificial intelligence software to accurately identify and quantify salmon passage in a precipitation-driven stream in remote Alaska.

Pending air charter availability, a supplemental objective is to:

1. Estimate the age composition of Tanada Lake Sockeye Salmon escapement through the interpretation of otolith growth characteristics, with a desired sample size capable of providing estimates that are within 10% of the true proportion 90% of the time.

Methods: In late May through June of each year, investigators will install a floating resistance board weir near the mouth of Tanada Creek. An underwater video camera will be installed directly on a fish passage chute connected to the weir. A gate on the chute will be left open to allow fish passage throughout the day and night. The fish passage chute is designed to force fish passing the weir to swim within a few inches of the glass surface of the camera housing. This ensures that, even during periods of moderate turbidity, all fish swimming past the camera are recorded and can be identified. Camera footage will then be reviewed and counts made.

If an air charter service can be secured in September of each year (which is not always the case as pilots are switching from floats in anticipation of winter), then as a means of estimating the age, sex, and length composition of Sockeye Salmon in the spawning escapement, we will collect otoliths, identify sex, and measure length from carcasses collected in spawning areas of Tanada Lake and its outlet area. We will access the lake by air charter for one sampling event annually, once carcasses are observed or reported in the lake. Based on past work at this site, we anticipate having up to four total-age groups and attempt to obtain a total of 121 readable otoliths so that age composition estimates may be within 10% of the actual proportion 90% of the time.

A new component of this study will be to explore the use of the artificial intelligence (AI) software “Salmon Vision” created by the Wild Salmon Center, to identify salmon species and quantify passage. AI counts will be paired against human counts. If statistically accurate, the PI intends to expand the use of this technology to other streams in the Copper River Basin as a low-cost, low-demand alternative to traditional methods. Efforts will begin with Copper Lake outlet, where it has been theorized observed to be the spawning destination for Tanada Creek salmon in times when Tanada Creek stream flows are extremely low or extremely high making it impassable.

Partnerships/Collaboration: The P.I. of this proposal has assisted and learned from the WRST Fisheries Biologist, installation, day to day operations, camera footage review, analysis strategies, and deconstruction since 2023. AITRC now has the capacity to administer and run this program while maintaining the partnership with WRST.

Technical Review Justification: The investigator for this proposal requests funds to operate a resistance board weir at Tanada Creek to estimate Sockeye and Chinook salmon escapement. In addition, otolith age data will be collected, and video technology will be used at the weir to ensure 24-hour escapement enumeration. The project monitors Sockeye and Chinook salmon stocks within the upper Copper River watershed and addresses a Priority Information Need for the region. The project has a history of success with the Monitoring Program and weir counts are used to assess the effectiveness of management decision of early season Sockeye returns. The project has reached a high level of capacity building in that Ahtna Intertribal Resource Commission has assumed the primary role as Principal Investigator and will lead the day-to-day operations of the project. Three seasonal full-time local hire employees will be hired

for the project. The cost of the proposed project is reasonable, and the agency match is equivalent to approximately 33% of the total amount requested from the Monitoring Program.

Investigator Submitted Executive Summary:

Project Number:	26-504			
Title:	Inriver Abundance of Copper River Chinook Salmon			
Geographic Region:	Southcentral Alaska			
Data Types:	Stock Status and Trends			
Principal Investigator:	Matthew Piché (Native Village of Eyak)			
Co-investigator:	None			
Project Request:	2026: \$235,000	2027: \$235,000	2028: \$235,000	2029: \$235,000
Total Request:	\$940,000			

Issue: Since 2003, the Native Village of Eyak’s (NVE) Department of the Environment and Natural Resources (DENR) has used research fishwheels and mark-recapture techniques to estimate the annual inriver abundance of adult Chinook Salmon (*Oncorhynchus tshawytscha*) through Baird Canyon on the lower Copper River, prior to any mainstem emigration. This previously funded FRMP study (2003-2025) qualifies for continued funding because; 1) the inriver abundance estimate is necessary for effective management of the six unique federal and state managed subsistence fisheries of the Copper River, as demonstrated through strong letters of support from the Federally Delegated Fisheries Manager as well as the ADF&G Sport Fish and Commercial Fisheries Division Directors, who are all responsible for ensuring sound fisheries management of the Copper River; 2) this project continues an uninterrupted long-term population stock status and trend monitoring program (1999-2029); 3) it directly address the 2026 Southcentral Alaska Priority Information Need “Reliable estimates of Chinook Salmon escapements into the Copper River drainage and delta systems” and; 4) in addition to a period of low abundance (2008-2024) transitioning into a period of missed escapements (2020, 2021, 2024), researchers continue to observe a trend in age truncation, and a decline in size at age, for Copper River Chinook Salmon (Lewis et al. 2015; Somerville and Hansen 2023; Piche et al. 2024).

Since 2003, Copper River Chinook Salmon run size has been measured by combining the inriver abundance estimate with federal and state harvest from fisheries occurring below the project marking site (Figure 1; Botz et al. 2021; Botz and Somerville 2017, 2021; Somerville and Hansen 2023). Returning run size data allows state and federal fishery managers to establish early-season harvest management strategies by forecasting run strength and potential for harvest (Morella and Olson, 2024). An equally important metric is system-wide spawning escapement. Since 2003, Copper River Chinook Salmon spawning escapement has been measured by subtracting harvest occurring upriver of this project’s recapture site from the inriver abundance estimate (Somerville and Botz 2017; Somerville and Hansen 2023; Botz et al. 2024). Spawning escapement data is used to assess and develop interannual harvest management strategies, monitor population status, and provide data for fisheries regulatory decisions.

Additionally, comparing Chinook Salmon population data with cumulative harvest data provides the public, managers, and regulatory boards with the necessary information to assess user group harvest in

proportion to run size. This is critical for maintaining federal and state-mandated subsistence priority on a Chinook Salmon population that is considered a fully allocated resource (Botz and Somerville 2017, 2024; Somerville and Hansen 2023). Lastly, due to the longevity and consistency of the mark-recapture dataset, it has become an inseason index used by Copper River fisheries managers (Somerville 2021). Inseason data produced by this project represents one of four indices, along with inseason harvest data of the fisheries, Gulkana River tower counts, and aerial index counts. Fishery managers use these to monitor the progression of the run and issue harvest announcements and emergency orders/closures for subsistence, personal use, commercial, and sport fisheries, thus ensuring subsistence allocation preference can be maintained inseason (Somerville and Maclean 2014; Somerville and Hansen 2023).

Objectives: To estimate the annual in-river abundance of adult Chinook Salmon in the Copper River from 2026 to 2029 such that the estimates are within 25% of the true value 95% of the time.

Methods: This study will produce an abundance estimate of Copper River Chinook Salmon at Baird Canyon (rkm 66) using established (Link et al. 2001; Smith 2004; Piche' et al. 2018-2024) and independently verified (Evenson et al. 2002; Savereide 2005) two-sample mark-recapture methods (Ricker 1975; Seber 1982). Similar fishwheel mark-recapture studies have successfully generated system-wide salmon abundance estimates (Meehan 1961; Donaldson and Cramer 1971; Johnson et al. 1992; Link et al. 1996; Cappiello and Bromaghin 1997; Gordon et al. 1998; Link and Nass 1999; Sturhahn and Nagtegaal 1999). A total of four live-capture fishwheels will be operated continuously in the Copper River from May through July each year. Two fishwheels will operate in Baird Canyon, and Chinook Salmon will be tagged (dorsal TBA-PIT tag & right operculum hole punch) and released. Before any emigration or significant harvest, a recapture effort will occur with two fishwheels operated near Canyon Creek (rkm 157), just below the lower boundary of the Upper Copper River District. Chinook Salmon will be inspected for a tag and an operculum hole punch. Inspected fish will receive a left operculum hole punch and be released. Chinook Salmon will be measured for length, and a subset will be sampled for genetics, age, and sex. Sample locations have been consistent since 2003. Standard mark-recapture assumption tests will indicate the presence or absence of bias and stratification needs for analysis. In-season project data is a management tool and will be posted daily to the project website. Fishery managers have full access to the RAW, real-time dataset, inseason and post-season datasets after clearing QC protocols. The public can view RAW inseason summary data online, a final report will be published each year with the Office of Subsistence Management detailing all objectives, methods, analyses, results, and discussion (Piché et al. 2018-2024).

Partnerships/Collaboration: Several concurrent studies benefit greatly from the Chinook Salmon monitoring program, which provides a well-established remote research facility and an in-river, staffed sampling platform for Copper River salmon research. This adds to the program's value and increases the positive impact of NVE's efforts and the Fisheries Resource Monitoring Program. Furthermore, the addition of these studies has provided NVE with experience in new sampling techniques while establishing working relationships with researchers from around the state. NVE and ADF&G are using the mark-recapture platform in an ongoing study to assess stock-specific run timing, distribution, and migratory survival of Sockeye Salmon (*Oncorhynchus nerka*; 2024-2026; AKSSF-56015). The objectives of this side study are also a 2026 Priority Information Need, resulting in the fulfillment of two PINS

during the proposed period of performance. Approximately 1100 Sockeye Salmon are being tagged annually with VHF transmitters and tracked through the watershed to spawning ground via 13 radio towers (seven mainstem, six tributaries) with over 60 hours of aerial telemetry surveys each year. This study provides distribution data across the six major spawning drainages, precise spawning locations, and stock-specific run timing past Baird Canyon. NVE leveraged FRMP funding to execute a similar study on Chinook Salmon from 2019 to 2021 (Schwanke and Piché 2023). In addition, a coded-wire tagging program led by the ADF&G Division of Sportfish utilized the NVE fishwheels and staff (2017-2024) to inspect returning adult Chinook Salmon for coded wire tags, this eight year effort aims to address a third 2026 PIN for Southcentral by producing an estimate of juvenile parr to smolt outmigration survival and smolt to returning adult ocean survival for Copper River Chinook Salmon (Savereide in prep). Since 2018, the Prince William Sound Science Center (PWSSC) has utilized the NVE fishwheel sampling platform for Sockeye Salmon capture and tagging to investigate the presence of pathogens and the impacts of a reduction in body size on migratory success. We are actively continuing this work with the PWSSC through 2026 with funding from AKSSF.

NVE's highly successful and long-term monitoring program has provided the opportunity for NVE to continue an integral role in Copper River salmon research and management data collection, while building capacity through collaboration and partnerships with other researchers to answer critical questions on the salmon our Tribal Members depend upon. The Copper River Chinook Salmon has been utilized by the dAXunhyuu (Eyak people), since time immemorial. Ensuring healthy, robust salmon populations thrive in the Copper River is an honor and a responsibility we share.

Technical Review Committee Justification: Native Village of Eyak requests funding for continuation of project 22-504, which provides the only available statistically valid estimate of Copper River Chinook Salmon and builds upon a 23-year data set of in-river abundance. Chinook Salmon abundance estimates produced from the mark-recapture project provide information that Federal and State managers use to make decisions regarding the fishery. This project addresses the immediate subsistence concern of declining Chinook Salmon returns to the Copper River. The Native Village of Eyak has a strong history of completing Monitoring Program projects. Letters of support were submitted by the Alaska Department of Fish and Game and the Wrangell-St. Elias National Park and Preserve. The total Monitoring Program funding requested is \$940,000, which covers roughly half of the total needed for the project. Multiple sources of funding have been used successfully in the past, and if again successful, would allow the continuation of the project. This is an expensive project to run, and the proponents have cut as many costs as possible while trying to maintain the same level of data quality.

APPENDIX 1
PROJECTS FUNDED IN THE SOUTHWEST ALASKA REGION SINCE 2000

Project Number	Project Title	Investigators
Copper River Salmon Projects		
26-504	Copper River Chinook	NVE
22-504	Copper River Chinook Salmon In-River Abundance	NVE
20-502	Abundance and Run Timing of Salmon in Tanada	NPS
20-501	Klutina River Sonar Pilot Project	NVE, AITRC
18-504	Copper River Chinook Salmon Abundance	NVE
18-501	Gulkana River Sockeye Salmon Harvest Contribution	ADF&G, CRITR
14-505	Copper River Chinook Salmon Fish Wheels	NVE
14-503	Tanada Creek Salmon	NPS
14-501	Long Lake Salmon	NPS
12-550	Upper Copper R. Changing Environments & Subsistence	ECO, ADF&G
12-500	Copper River Chinook Salmon RFID Feasibility	NVE, LGL
10-552	Copper River Subsistence Harvest Validation	HDR, ECO, ADF&G
10-505	Long Lake Salmon Assessment	NPS
10-503	Copper River Chinook Salmon Assessment	NVE, LGL
10-502	Tanada Creek Salmon Assessment	NPS
08-501	Copper River Sockeye Salmon Abundance	NVE, LGL
07-505	Long Lake Salmon Weir	NPS, PWSSC
07-503	Copper River Chinook and Sockeye Salmon Abundance	NVE
07-502	Tanada Creek Salmon Weir	NPS
06-502	Copper River Sockeye Salmon In-river Abundance	NVE, ADF&G
05-501	Copper River Sockeye Salmon Spawning Distribution	NVE, ADF&G
04-553	Copper River Salmon Knowledge of Long-Term Changes	ADF&G, NVE
04-507	Copper River Chinook Salmon Genetics	ADF&G, NVE, NPS
04-506	Lower Copper River In-season Abundance Estimate	NVE, LGL, ADF&G
04-503	Copper River Chinook Salmon Abundance Estimate	NVE, LGL
04-502	Tanada Creek Salmon Escapement	NPS
04-501	Long Lake Sockeye Salmon Escapement	NPS, CRWP
03-010	Upper Copper River C&T Fish Harvests GIS Atlas	CRNA, LGL
02-015	Copper River Chinook Salmon Radio Telemetry	ADF&G, LGL
01-217	Copper River Groups Capacity Building Workshop	CRNA, LGL
01-021	Lower Copper River In-season Abundance Estimate	NVE, LGL, ADF&G
01-020	Copper River Chinook Feasibility of Abundance Estimate	NVE, LGL
00-040	Copper River Salmon Subsistence Fishery Evaluations	ADF&G, CRNA

Project Number	Project Title	Investigators
00-034	Miles Lake Sonar Improvements	USFS, ADF&G
00-013	Tanada Creek Salmon Escapement	NPS
Copper River Steelhead Projects		
05-502	Copper River Steelhead Abundance	ADF&G, NVE
03-001	Copper River Steelhead Population Biology	ADF&G
01-148	Copper River Steelhead Stock Status	ADF&G, CRNA, USFWS
01-035	Copper River Steelhead Harvest Monitoring	NPS, CRNA
Copper River Freshwater Species Projects		
07-501	Tanada and Copper Lakes Burbot Abundance	NPS, ADF&G, MTC
02-077	Upper Copper River Increasing GIS Capabilities	CRNA
01-110	Copper River Non-Salmon Species Harvest and Use	CRNA, ADF&G, CHVC, CNTC, MTC
Copper River Eulachon Projects		
02-075	Eulachon Subsistence Harvest Opportunities	NVE, USFS, ADF&G
Prince William Sound Salmon Projects		
03-033	Billy's Hole, PWS Salmon Stock Assessment	ADF&G, CRRC, USFS
02-028	Chugach Region TEK Mapping	CRRC
00-035	Coghill Coho Salmon Weir	ADF&G, USFS
Cook Inlet Area Projects		
08-504	Crooked and Nikoli Creeks Steelhead Weirs	USFWS
08-503	Kasilof River Steelhead Radio Telemetry	USFWS
08-502	Tustumena Lake Coho Salmon Assessment	USFWS
07-509	Kasilof Watershed Steelhead Trout Radio Telemetry	USFWS
07-507	Kasilof Watershed Coho Salmon Radio Telemetry	USFWS
07-506	Tustumena Lake Coho Salmon Spawning Assessment	USFWS
03-045	Cook Inlet Subsistence Fisheries Harvest Assessment	ADF&G
00-041	Turnagain Arm Eulachon Subsistence Use and Assessment	USFS
00-038	Cooper Creek Dolly Varden Assessment	ADF&G

Abbreviations used for investigators are: **ADF&G** =Alaska Department of Fish and Game, **AITRC** = Ahtna Intertribal Resource Commission, **CHVC** = Chitina Village Council, **CNTC** = Cheesh'na Tribal Council, **CRITR** = Copper River Intertribal Resource Commission; **CRNA** = Copper River Native Association, **CRRC** = Chugach Regional Resources Commission, **CRWP** = Copper River Watershed Project, **ECO** = Ecotrust, **Karie** = Dr. James Karie, **LGL** = LGL Ltd, **MTC** = Mentasta Tribal Council, **NPS** = National Park Service, **NVE** = Native Village of Eyak, **PWSSC** = Prince William Sound Science Center, **USFS** = U.S. Forest Service, and **USFWS** = U.S. Fish and Wildlife Service.

Introduction

This document provides a list of Priority Information Needs created by the Southcentral Subsistence Regional Advisory Council for the Fisheries Resource Monitoring Program in 2020, 2022, 2024, and 2026. Some items on the list are highlighted to show which needs have been addressed in funded projects and which were included in proposals but not funded. Green highlights show needs that were met through funded work, and yellow highlights show needs that were identified but not selected for funding. These highlights can help volunteers revisit older needs that may still be important today.

Southcentral Region 2026 FRMP PINs

A green highlighted field indicates a PIN that was identified by a FRMP project funded in 2026. Yellow highlight indicates included in a submitted proposal, but one not selected for funding in 2026

YEAR	REGION	PRIORITY INFORMATION NEED
2026	Southcentral	Estimate Chinook, Coho, and Sockeye salmon escapements into the Copper River drainage and delta systems with a high degree of certainty (for example, projects utilizing weir, sonar, and/or mark-recapture methods).
2026	Southcentral	Collect baseline information of juvenile Chinook, Coho, and Sockeye salmon outmigration including abundance, and/or timing, condition, and mortality across the unique sub-watersheds of the Copper River and the Kenai Peninsula drainages.
2026	Southcentral	Understand food web dynamics and factors affecting early marine survival rates of southcentral origin wild Chinook and Coho salmon stocks including variables such as primary food resources and prey availability, competition with hatchery produced salmon, and prey buffering during periods of high/low abundance.
2026	Southcentral	Understand effects of environmental and/or climate change on stock specific migration timing and abundance of juvenile and adult salmon, as well as the implications for harvest management, in the Copper River and Kenai Peninsula drainages.
2026	Southcentral	Estimate measures of abundance, and/or run timing, spawning site fidelity, fecundity, age, sex, and length composition for Chinook, Coho, and Sockeye salmon in the Copper River or Kenai Peninsula drainages
2026	Southcentral	Identify and understand sources of inriver mortality (e.g. predation) on adult Chinook and Sockeye salmon as they migrate upstream within the Copper River drainage

Southcentral Region 2024 FRMP PINs

A highlighted field indicates a PIN that was identified by a FRMP project submitted in 2024. **NO PROJECTS WERE FUNDED AS PART OF THE 2024 FRMP CYCLE**

YEAR	REGION	PRIORITY INFORMATION NEED
2024	Southcentral	Estimate abundance, run timing, spawning site fidelity, and age, sex, and length composition for Chinook and Coho salmon that stage or spawn in waters of Kenai Peninsula drainages under Federal subsistence fishery jurisdiction.
2024	Southcentral	Estimate Chinook, Coho, and Sockeye salmon escapements into the Copper River drainage and delta systems with a high degree of certainty (for example projects utilizing weir, sonar, and/or mark-recapture methods).
2024	Southcentral	Develop, test, and implement methods for monitoring escapement and/or mortality of Sockeye Salmon in the Copper River drainage and delta systems, including assessment of predation.
2024	Southcentral	Estimate “quality of escapement” measures such as fecundity, age, sex, and size to help inform salmon management in the Copper River and Kenai Peninsula drainages.
2024	Southcentral	Understand effects of environmental and/or climate change on stock specific migration timing and abundance of adult salmon, as well as the implications for harvest management, in the Copper River and Kenai Peninsula drainages using sonars and tagging.
2024	Southcentral	Collect baseline information on juvenile Sockeye Salmon outmigration, timing, abundance, condition, and mortality across the unique sub-watersheds of the Copper River and the Kenai Peninsula drainages.

Southcentral Region 2022 FRMP PINs.

A green highlighted field indicates a PIN that was identified by a FRMP project funded in 2022. Yellow highlight indicates included in a submitted proposal, but one not selected for funding in 2022

YEAR	REGION	PRIORITY INFORMATION NEED
2022	Southcentral	Reliable estimates of abundance, run timing, spawning site fidelity, timing, and age, sex, and length composition for Chinook Salmon that stage or spawn in waters of Kenai Peninsula drainages under Federal subsistence fishery jurisdiction
2022	Southcentral	Reliable estimates of Chinook, Coho, and Sockeye salmon escapements (for example projects utilizing weir, sonar, and/or mark-recapture methods) into the Copper River drainage and delta systems.

YEAR	REGION	PRIORITY INFORMATION NEED
2022	Southcentral	Develop, test, and implement methodologies for monitoring escapement and/or mortality of Sockeye Salmon in the Copper River drainage and delta systems, including assessment of predation (for example by seals, bears, and eels/lampreys).
2022	Southcentral	In-season estimates of salmon harvest in the Copper River drainage through a harvest reporting/collection system.
2022	Southcentral	Estimates of Copper River Sockeye Salmon smolt out migration and ocean survival.

Southcentral Region 2020 FRMP PINs

A green highlighted field indicates a PIN that was identified by a FRMP project funded in 2020. Yellow highlight indicates included in a submitted proposal, but one not selected for funding in 2020.

YEAR	REGION	PRIORITY INFORMATION NEED
2020	Southcentral	Abundance, run timing, spawning site fidelity and timing, and age, sex, and length composition for Chinook Salmon that stage or spawn in waters of the Kasilof River and its tributaries under Federal subsistence fishery jurisdiction
2020	Southcentral	Obtain reliable estimates of Chinook, Coho, and Sockeye salmon escapement into the Copper River drainage and Copper River delta systems (for example, projects utilizing weir, sonar, and/or mark-recapture methods).
2020	Southcentral	Develop, test, and implement methodologies for monitoring salmon spawning escapement in the Copper River drainage.
2020	Southcentral	Implement the collection of real-time harvest data of salmon in the Copper River drainage.

Here are five draft Priority Information Needs (PINs) composed from themes raised by Angela Totemoff, Kirk Wilson, and Edward Graybeard and interpreted by OSM staff in the 8/25/2026 meeting. In the first section of the list, five broad themes that emerged from the group discussion are identified in bold font. Italicized font that follows represents a draft priority information need to address the broad issue.

1. Wild salmon stock status in small and headwater tributaries of the Copper River drainage

Draft PIN #1: Estimate run size, strength, origins, and distribution of adult, wild Chinook and Sockeye salmon in small headwater tributaries and clearwater streams of main tributaries to the Copper River drainage, including the Klutina, Tonsina, and Gulkana watersheds, using methods such as eDNA sampling, juvenile outmigration counts, other emerging technologies, and in conjunction with Traditional Ecological Knowledge of salmon in these tributaries.

2. Baseline salmon stock characteristics in Prince William Sound

Draft PIN #2: Collect baseline information on salmon stock status, productivity, and run timing for salmon stocks in Prince William Sound, with particular attention to smaller, non-hatchery-associated stocks and systems that are important to local subsistence users that have not been comprehensively studied to date.

3. Traditional Ecological Knowledge and Indigenous Knowledge of salmon abundance, distribution, and harvest opportunity in the Prince William Sound and Copper River regions.

Draft PIN #3: Document Traditional/Local Ecological Knowledge and Indigenous Knowledge regarding changes in salmon abundance, distribution, run timing, size, harvest opportunity, and environmental conditions affecting subsistence salmon fisheries. Investigators should use key respondent interviews, ethnographic fieldwork, and other qualitative methods developed in partnership with Tribal entities, with particular attention to building trust and data-sharing agreements that respect community concerns about data ownership and sensitive locations.

4. Subsistence salmon needs assessment for Southcentral communities

Draft PIN #4: Document subsistence salmon harvest levels relative to household and community subsistence needs in the Southcentral Region, including identification of unmet needs and factors limiting the ability of families

to meet subsistence needs (e.g., reduced access to other subsistence resources).

5. Age and size structure of returning Chinook salmon in the Copper River drainage

Draft PIN #5: Investigate factors contributing to the increasing occurrence of small, sexually mature Chinook salmon ("jacks") in the Copper River drainage, including whether this reflects changes in age at maturity, growth rates, or marine survival conditions.

The group identified the following PINs of the 2024 and 2026 FRMP remained relevant although some language was modified to target a larger geographic area than initially intended. PINs in the list below are identified as either "Kept in for 2028" or "Modified from 2026".

Carried Forward #1: (Modified from 2028)

6. Understand food web dynamics and factors affecting early marine survival rates of southcentral origin wild Chinook and Coho salmon stocks, including variables such as primary food resources and prey availability, competition with hatchery produced salmon, and prey buffering during periods of high/low abundance.

Carried Forward #2: (Modified from 2028)

7. Estimate measures of abundance, and/or run timing, spawning site fidelity, fecundity, age, sex, and length composition for Chinook, Coho, and Sockeye salmon in the Southcentral Region.

Carried Forward #3: (Modified from 2028)

8. Identify and understand sources of inriver mortality on adult Chinook and Sockeye salmon as they migrate upstream within the Southcentral drainage, including predation, physiological stress and/or injury, and other mortality factors in southcentral river drainages.

Carried Forward #4: (Modified from 2026)

9. Collect and improve baseline and long-term information of juvenile Chinook, Coho, and Sockeye salmon outmigration, including abundance, and/or timing, condition, and mortality across the unique sub-watersheds of the Southcentral region.

Carried Forward #5: (Modified from 2026)

10. Understand effects of environmental and/or climate change on stock specific migration timing and abundance of juvenile (for example, egg development or fry survivability) and adult salmon, as well as the implications for harvest management, in the Southcentral Region.

Carried Forward #6: (Modified from 2026)

- 11.** Estimate Chinook, Coho, and Sockeye salmon escapements into the Copper River and other Southcentral drainages and delta systems with a high degree of certainty (for example, projects utilizing weir, sonar, and/or mark-recapture methods, and new emerging technologies).