

**Yukon River Panel Restoration and Enhancement Fund
Detailed Proposals submitted for 2016**

Conservation

#1. Development of a Genetic Baseline for Canadian-Origin Yukon River Chinook and Chum

Fisheries and Oceans Canada

A genetics-based analysis can be used to identify to what river system, drainage, or sub-drainage a salmon is returning, long before the salmon actually reaches its spawning grounds. For instance, a fish caught in the lower Yukon River could be returning to any one of a large number of rivers within this watershed. A non-lethal tissue sample taken from the fish is all that is required to carry out a genetic analysis that can identify where this fish is likely from and to where it is returning (e.g., the Tanana River or the Teslin River). This type of analysis is generally referred to as genetic stock identification (GSI) and is used in both research and management. In the Yukon River, it is used to identify the stock of origin of salmon caught in test fisheries (e.g., Pilot Station or Eagle Sonar), commercial fisheries, and subsistence fisheries (Templin et al., 2006).

A great advantage of GSI is that, with sufficient sampling of fish, it can provide information on the proportional returns to different parts of the river system. Questions like these can be answered:

Of all the fish that pass by Pilot Station, what proportion are Canadian?

Of all the fish that go back to Canada, what proportion will spawn in the Stewart River?

In many cases, a genetic approach is the only practicable way to get this information.

This information on stock composition is used by fisheries managers to make in-season decisions and to reconstruct the run at the end of the season. It can also be used to understand where a juvenile salmon is from; this is particularly useful given that many juvenile salmon do not rear in their natal streams. All of this analysis and its resultant information hinges on having a representative genetic baseline. This project aims to ensure that the genetic baseline used by researchers and managers is representative of Canadian-origin salmon. A good portion of the genetic baseline already exists thanks to the work on this project that has already taken place. The aim of this project is to gather genetic baseline samples from those areas and stocks that are currently un-represented or under-represented and, in this way, improve the accuracy of all the estimates developed using GSI. Canadian sampling efforts are focused on filling the baseline gaps by collecting tissues from poorly represented Canadian tributaries.

#2. Development of a high-resolution SNP baseline for stock identification of Yukon River Chinook Salmon

Fisheries and Oceans Canada

Genotyping by sequencing (GBS) is a new type of DNA sequencing technology that allows the genotype of an individual to be determined by direct DNA sequencing. This new direct method of genotyping individuals will radically change the techniques used to genotype individual fish in stock identification applications. The initial step is to assemble a set of primers that amplify specific fragments of DNA containing single nucleotide polymorphisms (SNPs). These specific segments of DNA, called amplicons, are then directly sequenced, the nucleotides present at the SNP sites observed, and the genotype of the individual recorded. The technique can be applied most cost effectively when the primers for the

amplicons are assembled into a single panel, so that the amplicons are produced via a single polymerase chain reaction (PCR). The benefits of this technique are that several hundred markers per individual can be routinely screened for genotyping, and at a cost equivalent to or lower than that currently prevailing in stock identification applications. Screening more markers provides increased resolution for stock identification applications.

The project proposes to survey variation of SNPs in 20 populations of Chinook Salmon in the Canadian portion of the Yukon River drainage with the aforementioned amplicon panel of primers, and evaluate the utility of the SNPs for applied stock identification. Should the project be supported, I anticipate that the MGL will be transitioning from a microsatellite-based to a GBS SNP-based method of stock identification for Chinook Salmon to exploit the potential of the new GBS technology. I expect that this transition in the MGL should occur over a two-year period. The GBS technology will allow new applications in stock identification, as it may be possible to identify individual Chinook Salmon to specific populations if the baseline is adequate for the problem.

#3. Genetic stock identification of fall Chum Salmon in subsistence harvest from the Tanana Area, Yukon River, 2016. Year 3

Alaska Department of Fish and Game and Spearfish Research

The purpose of this 3-year project is to estimate the proportions of Canadian- and US-origin fall chum salmon caught in the Tanana subsistence fishery through the season. The community of Tanana harvests between 40% and 50% of the Yukon Area District 5 harvest (on average 20,000 fall chum salmon). Households in District 5 harvest on average 60% of the fall chum salmon taken for subsistence in the Yukon River. The other large harvesters in District 5 include Fort Yukon and Eagle, both of which are located upstream of the Porcupine River and would consist of primarily Canadian-origin fish. In this study, genetic tissue samples will be collected and analyzed for stock composition from fish caught in the Yukon River near the community of Tanana on the right bank upstream to the Rampart-Rapids area. Using genetic mixed stock analysis (MSA), sample sizes of 200 fish per stratum would be required to determine U.S. versus Canada for each of 3 strata between August 15 and September 30. Knowing the stock composition of Canadian-origin fall chum salmon in this large and concentrated fishery in Tanana may provide more informed management decisions. This proposal is for the third year of a three-year project. In order to provide some measure of inter-annual variation, ADF&G requires at least three years of estimates prior to releasing the results of new genetic stock identification applications to the public.

#4. Yukon River Chinook Subsistence Harvest Genetic Stock Identification, 2016. Year 5

Alaska Department of Fish and Game and Spearfish Research

An understanding of the total harvest of both U.S.- and Canadian-origin Yukon River Chinook salmon is necessary in order to address harvest sharing objectives outlined in the Pacific Salmon Treaty (PST). Important subsistence fisheries occur in Alaska across six distinct fishery management districts on the Yukon River, and stock composition of the subsistence harvest varies among these districts because of differences in harvest timing, location, and gear used. Complete information on these harvests is critical for creating Canadian-origin Chinook salmon brood year tables and run reconstruction, which form the basis of the spawner-recruit models used to estimate past and future run productivity and help establish escapement goals for Canadian-origin Chinook salmon. These data also help managers understand the effects of management actions and fishing gear on harvest composition. The objective of this proposal is to collect representative genetic stock identification (GSI) information, coupled with age, sex, length

(ASL) data, from the Chinook salmon subsistence harvest in Districts 1 through 5 (Figure 1). As in previous similar programs, sampling will be done by local community members under the supervision of Spearfish Research biologists and in accordance with ADF&G sampling protocols (Eaton 2015). Participants will be paid for the samples they collect in order to encourage participation in the program. The Co PI's with ADF&G will receive the raw data and will estimate ASL and stock composition of the subsistence Chinook salmon harvests from Districts 1-5. A brood table will be published in the annual JTC and a separate report will be provided that documents the data collection, harvest composition, and comparisons to historical patterns.

#5. Genetic Stock Identification of Canadian-Origin Yukon River Chinook and Chum Salmon.

Fisheries and Oceans Canada

Each year, tens of thousands of Chinook and chum salmon return to the upper Yukon River in Canada. The question arises: *Of all these fish that return, where do they go and what stock do they belong to?* Though physical and behavioural characteristics (e.g., timing of migration and fat content) can tell an observer some things about the identity of a salmon that is caught, the specific stock identity cannot be determined through these characteristics. They can, however, be determined by examining identifying characteristics of the fish's DNA or genetics.

This project describes the stock composition of salmon returning up the Yukon River to Canada. It estimates what proportion of these fish return to each of the genetically-identifiable stocks (see Table below). Though monitoring of the aggregate is practical and the basis for much of the management (e.g., how many Chinook in total returned to the Yukon River this year, and how many Chinook in total returned to Canada), it is equally important to understand status and trends at the population level. Given the size of the Yukon River watershed and the climatic variation found within it, salmon populations within the watershed may experience significant differences.

The effectiveness of this project is closely tied to the development and refinement of the genetic baseline and the number of samples obtained from Eagle Sonar. As more samples are added to the genetic baseline, the accuracy and resolution of the stock composition estimate increases. As more genetic samples are collected and analyzed from Eagle, the sampling error decreases and the estimates of stock compositions are made more reliable.

#6. Genetic Stock Identification of Pilot Station Chinook Salmon, 2016

Alaska Department of Fish and Game

To effectively manage Yukon River Chinook (*Oncorhynchus tshawytscha*) salmon stocks originating from Canada, fishery managers require an understanding of the stock composition of the run as it enters the river. Canadian-origin Chinook salmon migrate through approximately 1,200 miles of fisheries in the Alaska portion of the drainage. An estimate of the Canadian-origin Chinook salmon run strength and migration timing is vital to ensuring appropriate management actions are taken to meet border escapement objectives. This project helps in the management of Yukon River Chinook salmon by providing estimates of stock composition of Chinook salmon migrating past the mainstem sonar project near Pilot Station in the lower portion of the Yukon River. The ADF&G Gene Conservation Laboratory (GCL) creates inseason stock composition estimates by genotyping samples from the sonar project test fishery, and using the resulting genotypes to perform mixed stock analysis (MSA). Of particular importance to fishery managers is identification of the Canadian-origin component of the Chinook salmon run.

Stock-composition estimates from this project will be used in-season by fishery managers to project the Canadian-origin run strength (based on the percentile method) and also provide information on the relative strength of Canadian-origin Chinook salmon in each of the major pulses of fish entering the river.

#7. No submission.

#8. Porcupine River Chinook Salmon Sonar Program. Year 3

Vuntut Gwitch'in Government

In 2016, the Vuntut Gwitch'in Government (VGG) is proposing to conduct a third year of operation of sonar based stock assessment of Chinook salmon at the Old Crow sonar site, on the Porcupine River. While the previous two years of Chinook sonar operations have provided valuable insights into the size and migration timing of the Porcupine Chinook salmon stock, having a minimum of three years of continuous data is crucial to gaining an effective understanding of this stock. Having three years of data will allow for the calculation of summary statistics (mean, minimum and maximum data values) and will allow for reasonable insights to be drawn in regards to the magnitude of escapement, as well as spatial and temporal migration patterns. This project will use multi-beam ARIS imaging sonars to enumerate passing Chinook over a period of six weeks, and will utilize the same test netting methods employed in 2015, in order to collect the necessary data to apportion the sonar counts.

The first goal of this project is develop an accurate, in-season stock assessment tool to estimate the annual passage rates and run timing for Chinook salmon into the upper Porcupine River (upstream of Old Crow). The second goal of this project is to continue to build local capacity, including technical training and full time employment for local Vuntut Gwitch'ni First Nation (VGFN) citizens.

#9. Porcupine River Chum Salmon Telemetry. Year 4

Vuntut Gwitch'in Government

Originally proposed as a three year project, the chum telemetry project has provided very valuable data on spawning destinations of Porcupine River chum. The past few years have been a time of uncertainty for this salmon run and 2015 returns to the Fishing Branch have been extremely low, especially compared to the Porcupine River counts near Old Crow. Given this time of uncertainty, there would be notable value to continuing this study for an additional year thereby complimenting other efforts in the watershed to explain the reasons for the decline (i.e. Fishing Branch Habitat Study, etc.).

The Fishing Branch weir was used for numerous years to document the annual escapement of Porcupine River chum salmon; however, weir operations were discontinued after 2012, in favour of a sonar station near Old Crow. Although the weir was once again operational during 2015, it is unclear if this project will continue in the future. To compare future run estimates from the Porcupine River sonar program to historical counts from the Fishing Branch River weir, a thorough understanding of the destination of chum passing Old Crow is required. The weir and sonar programs operated concurrently in 2011 and 2012, and during this time, chum salmon were floy-tagged at the sonar site and the portion of these tags were recovered at the weir, which provided rough estimates of the proportion of Porcupine chum passing the Fishing Branch weir location. The main goal of this project is to facilitate the transition the stock assessment and escapement goals for chum salmon in the upper Porcupine River from the Fishing River

weir to the Old Crow sonar site and to support restoration efforts for the Porcupine River chum stock through the identification of spawning areas which may aid in the identification of future restoration efforts.

#10. Main-stem Teslin River sonar project - 2016. Year 6

Metla Environmental Inc.

Quantifying Chinook escapement into certain upper Yukon River index streams allows for independent (from Eagle sonar and First Nation catch estimates) assessment of total above-border Chinook escapements. Accurate Chinook escapement enumeration of selected tributaries combined with GSI sampling information collected at the Eagle sonar project increases the accuracy of the post-season upper Yukon River Chinook run re-construction.

The objectives of the 2016 main-stem Teslin River sonar project are:

1. To obtain an accurate estimate of the total Chinook salmon escapement entering the Teslin River watershed in 2016 using 2 multiple beam ARIS sonar units. Proposed period of sonar operation is from July 15 through September 3, 2016.
2. Conduct a carcass pitch on the main-stem Teslin River to obtain biological information (ASL) on the main-stem Teslin River Chinook population. The proposed carcass pitch component is from September 3 through September 14, 2016.

#11. Blind Creek Chinook Salmon Enumeration Weir. Year 14

Jane Wilson & Associates

The purpose of the proposed project is to install and operate a weir in Blind Creek to enumerate the 2016 Chinook salmon escapement and conduct live sampling to obtain biological information from the stock. The weir project will also provide a salmon viewing opportunity and on-site interpretation of the salmon resource and management programs. The goals of the project are: a) to provide a long term data set of information on a Chinook spawning population in the proposed Pelly River Conservation Unit and b) to increase public awareness of salmon management programs and conservation. This project will build on the information obtained from the 2003 to 2015 Blind Creek weir projects.

#12. Chinook Salmon Sonar Enumeration on the Big Salmon River. Year 12

Jane Wilson & Associates

The purpose of the proposed project is to operate a sonar station on the Big Salmon River using a long range dual frequency identification sonar (DIDSON) to enumerate the Chinook salmon escapement in 2016 and conduct spawning ground sampling to obtain biological information on the stock. The goal of the project is to provide a long term dataset for inter-annual stock strength, run timing, ASL composition, and annual escapement estimates (of the Big Salmon and the Yukon River) in addition to verifying the accuracy of the genetic proportions from Eagle.

The specific objectives of the 2016 project are to:

- 1) Obtain an accurate count of the 2016 Chinook escapement in the Big Salmon River.

- 2) Obtain age-sex-length (ASL) data from as many post-spawn Chinook as possible with a target goal of 5% of the total run.
- 3) Support the proposed 2016 Big Salmon River Juvenile Chinook Out-migrant Assessment Study.

#13. Stewart River Chinook Salmon Sonar Pilot Program. Year 2

First Nation of the Na-Cho Nyäk Dun

This project proposes to operate a sonar enumeration program on the lower Stewart River (downstream of the confluence of the McQuesten River) for the purpose of enumerating Chinook salmon that spawn in the main-stem Stewart River and all of its tributaries. The Stewart River supports the Na-Cho Nyäk Dun First Nation (NND) Chinook salmon fishery, and is an important contributor of Canadian origin Yukon River Chinook salmon. Based on Chinook stock identification using microsatellite DNA loci at the Eagle Sonar site near the Canada/U.S. border, an average of 8.6% of the border escapement count from 2007 to 2013 was destined for spawning grounds in the Stewart River, with a maximum of 14.2% (JTC 2015).

Though the Chinook that spawn in the Stewart River are an important contribution to the overall Yukon River Chinook run and the Stewart River is a major tributary to the Yukon River, there is no stock assessment program for Chinook salmon on the Stewart River. The genetic stock identification data collected at the Eagle sonar site only provides a post-season estimate of the number of Chinook that entered the Stewart River; a sonar program would provide an in-season count that is accurate, and one which the NND could actively use to manage its fishery.

#14. Yukon River Border Sonar Operations. Year 6

Alaska Department of Fish and Game

The Alaska Department of Fish and Game and Canadian Department of Fisheries and Oceans actively manage Chinook and fall chum salmon fisheries in the Yukon River drainage, and the Canadian component of these stocks is an area of concern for both countries. This project employs split-beam and imaging sonar equipment on the Yukon River to generate timely, in-season passage estimates of Chinook and chum salmon bound for Canadian waters. The project is located approximately 13 km downstream from the U.S. – Canada Border and is scheduled to operate continuously in the field from approximately July 1 through October 10.

As a part of routine project operations, drift gillnetting is conducted daily to monitor species composition and to collect age, sex, and length (ASL) data and genetic samples representative of the Chinook and fall chum salmon runs.

The 2016 season will mark the twelfth year of operation for this project. There has been productive bi-lateral cooperation and consultation throughout the development of this project, leading to increased confidence in, and agreement upon, salmon border passage estimates. The primary goal of this project is to provide a long-term dataset of daily Chinook and fall chum passage estimates with age and sex composition to manage the in-season fisheries and allow the creation and maintenance of brood tables for developing escapement goals.

#15. McQuesten River Chinook Sonar

Fisheries and Oceans Canada

The McQuesten River is a tributary of the Stewart River. Between 8% and 12% of Canadian-origin Chinook return to spawn in the Stewart River. The McQuesten River is by far the largest spawning tributary in this drainage.

A variety of assessment projects on Chinook salmon have been carried out on the McQuesten River over the years, but none have provided full counts of Chinook returning to this system. In 2010, the First Nation of the Na-Cho Nyak Dun (NND) and a consultancy, Environmental Dynamics Inc., located a site that would be suitable for operating a sonar-based enumeration of Chinook salmon in the McQuesten River (Snow 2010). The site is located approximately 2 km upstream from the mouth of the confluence of the McQuesten and Stewart rivers. During the pilot operations in 2010, an estimated 198 Chinook passed the site in just under a week.

This intention of this project is to provide several years of high quality data on the number of Chinook returning to the McQuesten watershed. These data are important to understanding the productivity of Canadian-origin Chinook on a stock level and can be used to ground truth genetic estimates of the return of spawning salmon. Data such as these provide a baseline on which to make decisions on stock restoration and against which success of stock restoration projects can be measured. On a rotational basis, enumeration projects of Yukon River Chinook salmon stocks across their range in Canada provide reliable and useful data that can be used to understand changes to returns and productivity of all Canadian-origin Chinook over the long term.

#16. Pelly River Chinook Salmon Sonar Pilot Program

Selkirk First Nation

This project proposes to operate a sonar enumeration program on the lower Pelly River (downstream of the community of Pelly Crossing) for the purpose of enumerating Chinook salmon that spawn in the mainstem Pelly River and all of its tributaries. The Pelly River supports Selkirk First Nation's (SFN) Chinook salmon fishery and is one of the largest contributors of Canadian origin Yukon River Chinook salmon, based on stock identification using microsatellite DNA loci at the Eagle Sonar site near the Canada/U.S. border (average of 15.1%, from 2007 to 2013; JTC 2015). There is currently no index of Chinook salmon escapement for the mainstem of the Pelly River and SFN is keen on developing a more localized means to manage this important Chinook stock.

It is understood that the Blind Creek weir provides an index of escapement on an important spawning tributary to the upper Pelly River; however, the weir is located over 350 km upstream of the community of Pelly Crossing and does not provide an in-season count of Chinook in the lower Pelly River in the vicinity of Pelly Crossing. The genetic stock identification data collected at the Eagle sonar site only provides a post-season estimate of the number of Chinook that entered the Pelly River. A sonar program on the lower Pelly River would provide a count that is local to Pelly Crossing, available in-season and accurate. Such a count could be used by SFN to actively manage its fishery.

#17. Enhancing the information value of Coded Wire Tags applied to Canadian-origin Chinook salmon.

Fisheries and Oceans Canada

All Chinook salmon raised in the Whitehorse Rapids Fish Hatchery are tagged with a coded wire tag before they are released. On average, this is about 150,000 juvenile fish per year. Though the coded wire tag itself is very small, these fish can be identified as having a coded wire tag because their adipose fin is also removed when the tag is put in. This allows a fish to be identified in the field to facilitate the submission of its head to agencies such that the coded wire tag can be read and the fish can be identified. The recovery of tagged fish provides highly useful data for understanding where fish spend time (e.g., ocean habitat use), when they go there (e.g., timing of migration), survival at different life stages, and contribution to fisheries. In the case of the fish released from the Whitehorse Rapids Fish Hatchery, about 50% of the fish that return to spawn each year are hatchery raised fish (approximately 600 fish on average).

The application of coded wire tags to these fish has been going on since the early 1980s and represents a rich and consistent source of data to understand movement, survival, and the proportion of a stock that is caught in fisheries. However, to get robust estimates of these important variables, recoveries of tagged fish need to be co-ordinated, encouraged and analyzed. This is a multi-faceted project to address some of the gaps and to make better use of this potentially rich data source. In the current context of interest in stock restoration, it is important to consider how to measure the success of such projects. Using CWT on all fish released is a potential rich data source from which to examine restoration impacts. This project will provide an overview of what kinds of information can be derived from CWTs. This will help set expectations about how CWTs can be used as part of restoration activities.

#18. Chinook Salmon Drone Survey Pilot Project

EDI Environmental Dynamics Inc.

The goal of the Chinook Salmon Drone Survey Pilot Project is to evaluate the use of unmanned aerial vehicle (UAVs) or drones to conduct aerial surveys of spawning Chinook salmon and their redds, and compare this method to the more conventional aerial survey method (i.e. helicopter or fixed-wing surveys). Drones can provide advantages over aerial surveys, as the imagery collected is very high resolution, it is spatially referenced, can be reviewed at any time (permanent record), can be used to map habitat and identify restoration or enhancement opportunities, and provides a safer, potentially more cost effective method.

The expected deliverables for this project will include an interim letter report with preliminary results as soon as possible after the field work and data review, followed by a final report which will detail the methods, results, and conclusions. After the project is complete, we will have the knowledge of whether the drone survey method is preferable and advantageous over traditional aerial flights to count salmon redds and spawners, and whether it is recommended for use on other projects.

#19. Yukon River Canadian-Origin Juvenile Chinook Out-migrant Assessment. Year 2

Fisheries and Oceans Canada

This is the second year of a project to assess juvenile Chinook salmon outmigration in the Big Salmon River. The project addresses a number of objectives. A primary goal is to understand the abundance of juvenile Chinook salmon that are produced in this system and link this back to the number of spawners that produced these juveniles. This is not a simple task and is expected to take some time to develop and establish methods that will provide this information. The challenge here is finding a method that allows full estimation of the number of juveniles produced by this system; this is made more difficult by the timing of the out migration and the low density of out migrants. The trial and assessment of different capture methods and approaches is therefore a key component of this project. Additional goals are to understand the timing and growth of out-migrating Chinook salmon. Developing an understanding of the relationship between juvenile production and the spawning escapement that produces them informs our larger understanding of Chinook salmon production and limits to production, and helps plan for stock and habitat restoration activities.

#20. Porcupine River Chinook Salmon Telemetry. Year 3

Vuntut Gwitch'in Government

The goal of this project is to apply radio tags to Porcupine River Chinook salmon at a tagging location near the Canada/U.S. border, and thereafter to track them to their final spawning destinations throughout the Canadian portion of the Porcupine River watershed. The monitoring of escapement of Canadian origin Chinook salmon into the upper Porcupine River watershed is of high priority to the community of Old Crow and the Vuntut Gwitch'in Government (VGG), as Chinook salmon provide the primary salmon food fishery for community members. A more thorough understanding of Porcupine River Chinook spawning locations is required for the future conservation of this run. The telemetry project is intended to provide information on the geographic distribution of Porcupine Chinook while the concurrent sonar program provides an in-season escapement for the run.

During the 2015 telemetry program, a total of 50 Chinook were successfully tagged with esophageal implant tags at Caribou Bar Creek between Old Crow and the Alaska border. The tags were applied over a 20 day period in July and two stationary towers were used to quantify tag dropouts and provide a cross check of the aerial tracking events by having a tower installed in the lower reaches of a primary spawning tributary (Miner River). The primary goal of the proposed project in 2016 is to radio tag 80 Chinook salmon in the Porcupine River (downstream of Old Crow) and track the tags throughout the Porcupine River watershed, thereby increasing the level of understanding of spawning areas in the watershed and identifying potential areas for Chinook stock restoration projects.

#21. Upper Teslin River Watershed Chinook Radio Telemetry

Teslin Tlingit Council

This project involves the application of radio tags to Chinook salmon in the Teslin River (upstream of main-stem spawning areas) to obtain a more comprehensive understanding of the distribution of Chinook spawning in the upper portion of the Teslin River watershed. Understanding the extent and relative

importance of tributaries used for spawning will guide monitoring efforts and future restoration activities to places where they are appropriate and will have the greatest potential for contributing to the restoration of Chinook salmon stocks. The total tags which migrated to this portion of the watershed during the 2002 and 2003 drainage-wide telemetry projects (9 in 2002; 17 in 2003) is too small of a sample size to draw conclusions upon the relative importance of each of the tributaries in the watershed. The primary goal of the project is to tag 60 Chinook in the very upper portion of the Teslin River near Johnson's Crossing.

#22. Fishing Branch River Chum Habitat Assessment - Year 3

Vuntut Gwitch'in Government

In 2016, VGG is proposing to conduct a third year of chum habitat assessments on the Fishing Branch River, upstream of the former weir site. VGG initiated this project with baseline habitat assessments in 2013/2014, and is currently preparing to conduct field work associated with the 2015/2016 program. The results of the 2015/2016 assessments will not be available prior to the deadline for the submission of 2016 Yukon River panel project proposals (October 1, 2015) due to the timing of chum salmon spawning; however, VGG anticipates that there are grounds for additional chum salmon habitat assessments in the 2016/2017 project year. For clarity, Year 2 of this program (currently underway) includes project activities up to and including data logger/instrumentation retrieval in the summer of 2016. The Year 3 project proposal is intended for project activities that will commence in the fall of 2016, and continue through the winter, spring and summer of 2017. The precise nature of these activities will not be known until the 2015/2016 habitat assessments are completed later this year, but will include additional redd surveys, and area likely to include additional hydrological and water quality investigations, renewed focus on side-channel areas and new work to map out small scale groundwater discharge areas.

#23. Michie Creek Salmon and Habitat Monitoring Project 2016. Year 18

Kwanlin Dun First Nation

As in previous years, the primary focus of this project continues to be providing access of migrating Chinook to the primary spawning location at the outlet of Michie Lake in upper Michie Creek. This project has been ongoing for well over a decade. Over the years barriers such as beaver dams and logjams have been breached to maintain the access for migrating Chinook to their primary spawning location. The Michie Creek spawning population is important to maintain as it represents one of the longest migrations of Chinook salmon in the Yukon Drainage Basin (3,200 km) and is upstream of the Whitehorse Rapids Dam. It is also a stock that receives the greatest harvest potential due to the fact that they migrate through fisheries in both Alaska and the Yukon jurisdictions.

#24. Yukon River Mid-Mainstem Salmon Assessment Program

Little Salmon Carmacks First Nation (LSCFN)

In the "Salmon Knowledge Study" (CRE-141N-10) LSCFN compiled existing knowledge from previous reports and identified information gaps in the eight major tributaries to the Yukon River mid-mainstem within the traditional territory of LSCFN. This project seeks to fill in the gaps by following the main recommendations within the previous report including improving on the current LSCFN salmon database. This project is relevant to management planning and monitoring of salmon and salmon habitat.

It is important for LSCFN to identify what habitats are important for juvenile fish and the extent of adult Chinook utilization in order to protect them, and ultimately conserve the Chinook population as a whole. Improvements in LSCFN's current database will assist in better restoration and enhancement project planning as well as provide the information necessary to respond to land development and mining activities assessments.

#25. Temperature monitoring of Yukon River Chinook Salmon spawning and migration habitats in Canada. Year 3

AvF R&D, independent consultant

The goal of this project is to develop a publically accessible baseline of the thermal regimes of Yukon River Chinook Salmon spawning and migration habitats in Canada. The objectives of the project are:

- To continue collection of high resolution, high quality water temperature data that are representative of the waters monitored, comparable to other streams and rivers, and allow measurements to be repeated in the near and more distant future.
- To distribute data collected and the results of preliminary analysis (daily mean/maximum/minimum temperatures) to FN/State/Territory/Federal agencies, institutes and NGOs and others, encouraging a wide knowledge of water temperatures.
- To prepare an annual Project Report, resulting in dissemination of information and provision of network and environmental context to managers and interested parties.

#26. Assessing the Limits to Production of Juvenile Canadian-Origin Yukon River.

Fisheries and Oceans Canada

The productivity of Chinook salmon in the Yukon River has decreased from as many as 5 recruits per spawner in the 1980s to 1 or fewer less recruit per spawner today. This decrease has severely impacted the size of salmon runs and the people who depend on salmon for sustenance, cultural identity, and making ends meet. As managers, scientists, tribes, governments, and communities look at what can be done to improve the runs of Chinook salmon in the Yukon River, it will be important to understand the limits to production in freshwater so that restoration activities are as impactful as possible.

This project aims to describe limits to production in freshwater with the aim of informing both stock and habitat restoration activities. The work involves the assessment of over-wintering habitat of juvenile Canadian-origin Chinook salmon in the Yukon River first through the delineation of over-wintering populations of Chinook salmon and second through the characterization of this habitat. Though carried out in a particular geographic area, the results of this project can help guide the quantification of over-wintering habitat across a larger geographic scale and can help evaluate the role of over-wintering habitat in limiting productivity. Finally, the identification of key over-wintering habitat characteristics will inform the design and implementation of stock and habitat restoration projects for Yukon Chinook salmon.

Restoration

#27. Ta'an Kwäch'än Council - Fox Creek Salmon Restoration Project. Year 4

Ta'an Kwäch'än Council

The Fox Creek Salmon Restoration Project (formally known as the Community Stewardship Project) was designed in 2006 and field work on the project started in the spring of 2007. The Chinook Salmon Stock Restoration Plan (CSSRP) was completed in 2008 and was based on Traditional Ecological Knowledge (TEK) and technical expertise from the Department of Fisheries and Oceans (DFO). The first broodstock were released in Fox Creek in 2009. Since then, TKC has worked closely with DFO, Environmental Dynamics Inc. (EDI), Yukon Electric Whitehorse Rapids Hatchery and the McIntyre Creek Incubation Facility–Yukon College to restore salmon habitat and fisheries stocks in Fox Creek.

In 2015 we increased our survey frequency on Fox Creek to ensure any returning salmon were documented and spawning locations were identified. The added effort this season allowed us to confirm sightings of 20 returning salmon and were able to document four Redds, with more potential Redds identified. We were able to recover 3salmon (heads), which will help to document the success of the hatchery program. After 10 years of data collection and 7 years of fry releases in Fox Creek we have reached the midway point of the CSSRP and are obligated to review the plan to ensure it incorporates new knowledge. From the positive results collected during the 2015 season, an increase in water quality and monitoring around Redds will be a top priority in 2016. A complete 2015 Fox Creek Restoration annual report will be available December 31, 2015, as well as an updated CSSRP.

#28. Deadman Creek Chinook Salmon Restoration Pilot Project and In-Stream Egg Incubation

Teslin Tlingit Council

This is a pilot project to reintroduce a spawning Chinook salmon stock to Deadman Creek and conduct a trial of two in-stream egg incubation methods. This project is intended to be step two of a project initiated by the Teslin Tlingit Council (TTC) in 2015 to identify a potential restoration project in the Teslin River watershed. The first year of this project was funded by the R&E Fund and is currently in progress. The primary goal is to conduct a trial to restore a spawning population of Chinook to Deadman Creek using in-stream egg incubation methods. For this first year of the project (pilot), a target of 5,000 to 10,000 eggs will be deployed into the creek using two methods. The first method (Jordan-Scotty egg incubators) involve the use of commercially available egg incubators designed for the in-stream incubation of fertilized Chinook eggs in streams. The second method involves the creation of an artificial redd by injecting high pressure water into the stream bed to remove fine particles and the subsequent placement of fertilized eggs into the substrate. In addition to the deployment of eggs into Deadman Creek using these methods, a small trial will also be conducted as a 'control' at a known spawning area on Morely River, also in the Teslin River watershed.

#29. Yukon River Canadian-Origin Chinook Salmon Hatchery Augmentation Pilot

Fisheries and Oceans Canada

Significant declines in Canadian-origin Yukon River Chinook salmon over the past 15 years have prompted recent focused discussions exploring stock restoration as a means to support Canadian basin-wide Chinook salmon recovery. A key salmon restoration element proposed includes the use of conservation hatchery technology to improve survival in the early life history stages (egg to fry/smolt) to potentially speed recovery efforts. Conservation hatcheries release artificially propagated fish into natural spawning and rearing habitat. As adults, these fish will return to spawn naturally to contribute to the wild population.

A feasibility assessment project funded by the Yukon Panel's R&E Fund is being conducted in 2015 to review existing facilities and develop recommendations for facility and enhancement operations in support of stock restoration activities. The results of that assessment will guide decisions about facility and infrastructure requirements and capacity, brood size, gamete collection, transportation, rearing strategy, and release strategy.

This pilot stock restoration project is intended to run for 2 years initially to raise Chinook salmon to the smolt release stage. If results are positive and it continues to fit within near-term priorities, further longer term projects to build on the success may be proposed. This proposal is anticipated to achieve a solid foundation for collaborative community-based stock restoration projects in subsequent years with potential staged increases in rearing capacity to support stock restoration projects, as determined through the proposed feasibility assessment.

#30. Coded Wire Tagging of Hatchery Origin Canadian-Origin Chinook Salmon Fry.

Fisheries and Oceans Canada

Coded Wire Tags (CWTs) have been used as a tool in the management of Pacific salmon fisheries since the 1960s. The recovery and analysis of CWTs in Canada and the US is the most important tool in research and management of salmonids, and is an integral part of the Canada/US Pacific Salmon Treaty.

Within the Fisheries and Oceans Canada Salmonid Enhancement Program (SEP) the information provided by CWTs is used to estimate hatchery contribution to catch and river returns, and survival rates for differential restoration strategies. Groups of Upper Yukon River Chinook salmon have been tagged annually in Yukon since 1985, when hatchery fry were first released from the new Whitehorse Rapids Hatchery. Over 80% of all Whitehorse Rapids Hatchery fish have been tagged by Fisheries and Oceans Canada or by the Yukon Fish and Game Association (JTC, 2007). The long term goal of the project is to ensure on-going tagging of all hatchery contributions for management, assessment and monitoring purposes as per the current Pacific salmon CWT program outlined above. The short term goal (3 years) is to implement a coordinated tagging program to support anticipated stock recovery efforts as identified through focused Yukon River Panel restoration priorities between 2016 and 2019. Overall the objective is to ensure that all Chinook salmon reared in a hatchery facility are marked via CWT (and adipose clip) in order to differentiate individual fish from wild-reared fish.

#31. Porcupine River Chum Salmon Restoration Incubation and Rearing Pilot Project

Vuntut Gwitch'in Government & Fisheries and Oceans Canada

In consideration of the cultural importance – both as a food source and as a component of a traditional lifestyle – of chum salmon to Vuntut Gwitch'in citizens, and in light of current Yukon River Panel Near Term Restoration Priorities, Fisheries and Oceans Canada and VGG are partnering to build on the Fishing Branch River assessment work to date in furthering investigations to identify limits to productivity while also exploring potential stock restoration strategies.

The short term goal is to implement a trial egg take /incubation/rearing program to raise and mark 20,000 Porcupine chum salmon fry for outplant and subsequent monitoring and assessment.

The long term goal of the project is to contribute to the growing body of work on Porcupine River origin chum salmon through a mark/recovery program to better understand factors contributing to the downward trend in stock abundance while maintaining a wild spawning population in the Fishing Branch River - an area generally well suited for spawning, successful incubation/overwintering, alevin development and /fry rearing.

#32. Rock River Chinook and Chum Habitat Assessment and Restoration Investigation

Vuntut Gwitch'in Government

As part of VGG's ongoing works to support Chinook and chum salmon conversation in the Porcupine River watershed, the goal of this project is to collect baseline data on Chinook and chum spawning in Rock River, in support of a potential restoration pilot project in the river in 2017 (Year 2). VGG recent telemetry work has indicated the Rock River is a spawning area for both chum and Chinook salmon, one which potentially contributes substantially to the overall upper Porcupine River stock.

The primary goal of the proposed project in 2016 is to investigate the potential for Chinook and/or chum restoration projects in the watershed. This may include the identification of limitations to productivity and options for stock or habitat restoration efforts. This will be accomplished by conducting aerial counts of both Chinook and chum salmon during the respective spawning periods and by sampling Chinook juveniles during the summer months. Juvenile sampling will also include the collection of baseline habitat information for Chinook and chum (water temperature, habitat quality, etc.). A secondary goal of the project is to collect baseline genetic information for both Chinook and chum salmon in the watershed to provide to DFO as an aid in determining if the Rock River population is genetically distinct from other spawning populations in the Canadian portion of the Porcupine River watershed.

#33. McIntyre Creek Salmon Incubation Facility Water Warming Investigation.

EDI Environmental Dynamics Inc & Yukon College

Currently the McIntyre Creek Salmon Incubation Project (MCSIP) uses 100% groundwater for incubating Chinook salmon eggs and rearing fry for release to systems throughout the Yukon River Watershed. The groundwater source provides clean and disease-free water at a consistent water temperature of ~3 to 5°C throughout the year. While these water temperatures are highly beneficial during the fall and winter

period for egg development (being warmer than natural spawning stream conditions during these times of year), the temperatures during the late-spring and summer at MCSIP may create a disadvantage for rearing fry as groundwater temperatures are lower than natural stream conditions. This could mean that when fry are released to natural streams for restoration and enhancement purposes, they are at a slight size disadvantage when compared to their naturally-raised counterparts and there could be consequences to fry survival rates during rearing, overwintering and migration. The ultimate goal of the proposed McIntyre Creek Salmon Incubation Facility Water Warming Project is to ensure that MCSIP is able to produce salmon fry that are in a condition as close to naturally raised fry as possible (i.e. not smaller or bigger) in order for them to have a similar chance of survival.

#34. Porcupine Drainage Engagement: Gathering, Mapping and Integrating Local and Traditional Knowledge (LTK) for Community-Based Stock Restoration Planning.

Yukon Salmon Sub-Committee and Vuntut Gwitch'in Government

While scientific and technical research are integral components in determining pre-season outlooks, in-season management strategies, linear modeling and providing powerful predictability in natural principals, salmon management and stock restoration could be further benefitted by incorporating Local and Traditional Knowledge (LTK). The Porcupine Drainage can serve as a prime example of the integration of meaningful LTK into the western scientific approach.

This project proposes to organize two-day LTK gathering workshop in Old Crow in April/May, 2016. Approximately one and a half days will be utilized to gather LTK and the remaining time will be used to strategize around community-based management and potential stock restoration options.

The project will involve the communities of Old Crow (Yukon) and Fort Yukon (Alaska), agencies and other stakeholders in the collection of LTK regarding the Fall Chum run (and to some extent Chinook salmon) in the Porcupine drainage.

Stewardship

#35. Salmon Stewardship Coordinators for Yukon Schools. Year 5

Can-nic-a-nick Environmental Sciences

This is a new program that was formally funded by the YRP and managed by DFO. The project as proposed will now be led by a local Whitehorse consultant. The consultant will serve as the Salmon Stewardship Coordinator (SSC) and the program will place Salmon Stewards in Yukon communities to assist teachers with the delivery of DFO's Stream to Sea program to all interested Yukon Schools and learning centers. The SSC will work closely with the Salmon Stewards to provide support to teachers in Yukon River salmon education activities, including aquarium incubation set-up, operation and maintenance; salmon ecology and biology; and/or participate in egg takes that can be facilitated near community schools. These hands on activities with youth have been identified as key near term Stewardship priority by the JTC. Over the duration of the project, the coordinators will be responsible for continuing to build capacity within the schools and seek support from key community members to allow for the continuation of the Stream to Sea program.

#36. Yukon River North Mainstem Stewardship. Year 11

Dawson District Renewable Resource Council

Our goal is the development and maintenance of community capacity in the Dawson City region to protect, maintain and restore salmon stocks and habitats. Our intent is to hire two local high school students who have not participated in the project in past years as Student Stewards. They will work under the field supervision of an experienced elder and the technical guidance of a retired DFO biologist. The Student Stewards will be provided with a wide range of hands-on training through participation in a variety of salmon and salmon habitat management and research activities. The context of any activities undertaken will be explained to the Student Stewards so that they are given an opportunity not only to understand *what* they are doing, but *why* they are doing it. At the end of the funded field work component of the project, the Student Stewards will demonstrate their acquired skills and knowledge to children and community members in a Public Involvement Day. Field monitoring and evaluation will take place in early spring and mid-September as an in-kind contribution by the Technical Advisor. The existing “Record of Activities” will be updated. Opportunities will be sought to increase the exposure of the project through the local media and in presentations to the public.

#37. Tr’ondëk Hwëch’in First Fish Youth Culture Camp. Year 16

Tr’ondëk Hwëch’in First Nation

Tr’ondëk Hwëch’in First Fish Youth Culture Camp goals and objectives include teaching youth about harvesting, processing, conservation and stewardship of Yukon River salmon. During the camp, the youth are taught about the many aspects associated with subsistence salmon fishing on the Yukon River including where to set nets and fish wheels, how to pull a net or check a fish wheel, how to mend the nets, how to prepare the fish for processing, cutting the fish into strips and how to smoke and dry the fish. The youth are also taught important lessons consistent with Tr’ondëk Hwëch’in culture and values; these include stories about respecting the salmon, only harvesting what you need as well as the importance of distributing the harvest to community members. First Fish also includes teachings on the biology of salmon, salmon conservation and salmon habitat. Other important teachings include receiving instructions and directions in boat safety, bear safety, fry life cycles, spawning and rearing habitats and current global issues that are affecting salmon stocks.

#38. McIntyre Creek Salmon Incubation Project -MCSIP. Year 14

Yukon College

McIntyre Creek Salmon Incubation Project (MCSIP) is a groundwater sourced, gravity-fed salmon incubation facility capable of rearing fish from egg-take through to tagged and release-ready stage. The facility has functioned for nearly 20 years in the provision of Yukon River Chinook salmon in the upper Canadian portion of the River. Project operational capacity includes the collection of salmon broodstock from the wild, egg fertilization and incubation, rearing and feeding through the juvenile stage, as well as adipose fin clipping and insertion of coded-wire tags in preparation for release into the wild. In previous years MCSIP has focused on enhancement and fostering stewardship through the rearing and release of Yukon River chinook salmon juveniles back into natal streams, as well as stock restoration of depopulated streams undergoing stock restoration. Additionally, hatchery broodstock have been collected from Tatchun Creek, Takhini River and Whitehorse Rapids Fishway. Tatchun Creek and Takhini River

salmon were eventually released back into their respective natal streams in an effort to enhance stocks, while the Whitehorse Rapids Fishway eggs have primarily been used to re-stock Fox Creek as part of Ta'an Kwäch'an First Nation's (TKFN) Fox Creek Salmon Stock Restoration Project. MCSIP provides facilities for the initial incubation of small numbers of other salmon eggs which are destined for classroom incubation projects as part of the Stream to Sea Program. In addition, MCSIP has served as a test site to refine hatchery incubator use and thermal marking units, which have been developed at the site. It is expected that the techniques used to rear, mark and release brood stock at McIntyre will benefit future Yukon River salmon stock restoration and enhancement projects. Past and continued interest in the site by the TKFN and other First Nations as well as students, Fisheries and Oceans, Canada and others is indicative of the value of this project and resource to the community.

#39. Yukon River Chinook Salmon Stock Restoration Community Technical Team - Year 2

Yukon Salmon Sub-Committee

Interest in salmon stock and habitat restoration within the Yukon Territory has increased amid significant declines in Canadian-origin Yukon River Chinook over the past 15 years. The Yukon River Panel has also made Stock Restoration a priority with an expanded focus between 2016 and 2019.

Yukon First Nations and Canadian stakeholders are both leaders and potential partners that could support efforts to actively engage in the restoration of Yukon River Chinook salmon stocks in Canada. However, it is recognized that in order to undertake effective and appropriate stock restoration initiatives, there must be community support and the willingness and ability for salmon stakeholders to understand and play a role in the implementation of the stock restoration initiative. It is also essential that any proposed restoration action must be based on a plan that encompasses sound biological, technical and local/traditional knowledge parameters.

Although much progress has been achieved in developing knowledge and capacity among Yukon governments and stakeholders, there has been limited opportunity for exposure to the complex principles and specialized scientific expertise in the field of salmon stock restoration. There is also very little coordination of stock restoration activities and planning at a higher, drainage-wide level. Individual First Nations and communities implement projects with their traditional territories and on their specific creeks and rivers. The Yukon River Chinook Salmon Stock Restoration Community Technical Team – Year 2 will provide this higher-level, drainage wide direction while working towards the implementation of strategic and specific stock restoration initiatives.

#40. Tr'ondëk Hwëch'in Conservation Hatchery Training Institution Coordinator

Tr'ondëk Hwëch'in First Nation

In 2010, Tr'ondëk Hwëch'in First Nation government commissioned a report from Environmental Dynamics Inc. (EDI) in order to assess the feasibility of beginning a '*Conservation Hatchery Training Institution*' facility for rearing Chinook salmon, originating from the Klondike River, within Tr'ondëk Hwëch'in Traditional Territory. This report evaluated candidate streams, carrying capacity, water requirements, hatchery locations, permitting requirements, training components, potential partners and project costs. Furthermore, the report was intended to build and expand upon existing knowledge and experience, specific to the Dawson City region, which had been accrued during previous hatchery development projects.

Tr'ondëk Hwëch'in envisions that a conservation hatchery training institution would foster social and economic development in the Klondike. Through the creation of accredited post-secondary fisheries and aquatic programming in partnership with Yukon College, Tr'ondëk Hwëch'in will, with technical assistance from Department of Fisheries and Oceans Canada (DFO), work towards empowering prospective students by providing a means through which they may obtain the requisite knowledge and skills needed to pursue a fisheries-oriented career. We would also be helping to rebuild depressed Yukon River Chinook salmon stocks.

#41. Yukon Fisheries Field Assistant Program

Yukon College

Yukon Fisheries Field Assistant Program ("Fish Tech") has been developed by Yukon College from 2005 to meet Territorial needs for certified, skilled fisheries field workers. The Yukon River Panel's Restoration and Enhancement Fund make monies available for community-initiated fisheries projects within the Yukon River drainage. However, there is often a shortage of qualified individuals to work on these projects. There is also an increasing need for technical capacity, specifically technical skills related to conservation concerns of Yukon River salmon, and for First Nations to participate directly in data collection. This project directly addresses these needs by providing training opportunities that meet these needs and by making the training more readily available to rural residents.

By making as much of the Program as possible available in an online format, students are able to complete a significant portion of their coursework from their respective communities. Also, this can occur outside the open-water season with less impact on fisheries-related employment opportunities. This also means minimal interruption for those who have full-time jobs, as they are able to complete the online modules during evenings and weekends. Once the online portion of the course is completed, they need only attend a two-week (10 successive days) field camp and they will have fulfilled all the requirements for certification.

Communications

#42. Yukon River In-Season Salmon Management Teleconferences. Year 13

Yukon River Drainage Fisheries Association

The goal of this program is to improve public awareness of fishing conditions and to foster community support for the management of Yukon River salmon. This is done on a weekly basis through the hosting of in-season salmon management teleconferences during the fishing season. The program has run consistently for the past 12 years, funded by the Yukon River Panel and the Fisheries Resource Monitoring Program. Participants on the call include Yukon River fishermen, community harvest surveyors, Tribal councils, First Nations, policy makers, non-governmental organizations and state and federal resource managers. The content of the call includes updates and reports from villages on fishing activities and environmental conditions as well as management reports on their fisheries assessments and strategies. Open discussion and question and answer periods take place following the reports. The calls are focused on in-season management and there are numerous questions posed from the fishermen to the managers. In recent years, with low Chinook salmon runs, it is critical to have this open dialogue that enables management to share weekly data on run counts, timing, gear restrictions etc. and for

managers to hear from fishermen on their reports of what they are harvesting and seeing in the river. Management is complex and new fishing gear and many openings and closings in the different fishing districts have become common. This dialogue helps build community support because it is an open forum where the public gets to interact directly with resource managers and hear rationale for management decision-making. While not everyone agrees on fisheries management strategies this open forum helps to build an open dialogue and working relationship. It is also a place for fishermen to share their concerns directly with managers and they can ask for changes in fishing gear or hours of time allowed to fish. Outcomes from this program have included the development of a cadre of people from the Yukon River that communicate on a weekly basis about the Yukon River salmon runs, in-season, many of which are different than those that participate in other annual forums. The calls are a reliable, affordable and effective in-season communication that should continue in order to offer an opportunity for people from the Yukon River to participate in fisheries management discussions about the conservative management actions taking place in recent years. People who participate on the call are local leaders in various ways and they share the information on the calls with other community members. They also share their community concerns on the call thus acting as community liaisons during the fishing season. This is extremely helpful as the management agencies are only based in two locations during the fishing season and have limited time and ability to travel out to each and every community to meet firsthand with fishing families.

#43. Yukon River Education Exchange Program. Year 13

Yukon River Drainage Fisheries Association

The education exchange (the exchange) trip was developed by YRDFA and funded by the Yukon River Panel for the past 12 years after the Yukon River Salmon Agreement was signed. This exchange trip is for people from Alaska and Canada that reside in Yukon River villages or who work with Yukon River salmon fisheries to learn from each other and fisheries management agencies about issues pertaining to Canadian origin Chinook and fall chum salmon fisheries. Some key topics for sharing are management approaches and goals, Yukon River cultures and people who rely on salmon and the Yukon River Salmon Agreement. A group of five people travels across the border to the neighboring country each summer and state and federal agency personnel, Yukon River Panel members, Elders, youth, fish processors and guides augment the group along their trip at various stops. The goal of the exchange is to foster cross border collaboration and acts as a bridge to greater understanding, dialogue and cooperation along the Yukon River. The program fosters community relationships focused on Yukon River salmon, with the outcome of a more aware public that will maintain and protect salmon stocks, habitat and culture. By the end of the project we expect to have more people who are aware of the importance of the Yukon River Salmon Agreement. Our participant “ambassadors” have shown they are interested in learning about Yukon River communities and their relationship with salmon. The exchange fosters a sense of pride in people who demonstrate they want to learn about others. Hosts feel valued by having visitors who express interest in learning about them and their situation and way of life. There is much commonality, many challenges and meaningful lessons to share among people from both sides of the Alaska/Yukon border. We create value, visibility and excitement by working with agencies, tribal leadership and partners ensuring that the public knows we are visiting and why we are in the host country, which is to build relationships that lead to conservation actions for sustaining the salmon resource for future generations.

#44. Yukon River Summer Pre-Season Preparation Meeting. Year 7

Yukon River Drainage Fisheries Association

The project goal is to conduct public outreach to an adult audience of active Yukon River fishers to build a more aware public constituency that is motivated to maintain and protect salmon stocks. Over the past five years the Yukon River Drainage Fisheries Association (YRDFA) has hosted a one-day meeting to discuss pre-season planning for the management of declining Canadian origin Chinook salmon. Meeting attendees included Tribal council representatives and consortia, state and federal agencies and other Yukon River fishery stakeholders. The meetings were an accomplishment; a majority of stakeholders along the Alaskan portion of the Yukon River met together to discuss how to protect Canadian origin Chinook salmon. An additional past accomplishment included an agreed upon outcome from the meetings to close the first and possibly second Chinook salmon pulses. While difficult to agree to, Alaskan fishermen understood they were working in partnership with fisheries managers to try to achieve border passage. The most recent meeting was held in Anchorage in April 2015 and was a successful meeting with many participants from all along the Yukon River that actively participated in discussions about the salmon fisheries. The meeting prior was planned in coordination with the international summit, also funded by the Yukon River Panel. In the spring 2013 YRDFA did not conduct the pre-season planning meeting. After a challenging summer of closures and gear restrictions to protect Canadian origin Chinook salmon, it was apparent that a pre-season summer planning meeting would have greatly benefitted the Alaskan portion of the Yukon River in aiding public awareness of the declining Canadian origin Chinook salmon stocks and could have bolstered motivation before the fishing season to maintain and protect the salmon stocks. Based on past successes and the continued forecast for poor Canadian origin Chinook salmon runs, the 2016 meeting is needed to continue to prepare people for the upcoming fishing season, continue the unprecedented Chinook salmon conservation success of the past two years and demonstrate to Alaskan fishers the appreciation of Alaskan Yukon fishery managers. This project has previously demonstrated that outreach through face-to-face meetings with the Yukon River public has led to increased community partnership with fisheries managers in their management efforts to conserve Canadian origin Chinook salmon.