YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: URE-04-10

PROJECT TITLE: Ruby Salmon Data Collection Project

PROJECT PROPONENT: Tanana Chiefs Conference

CONTACT: Brandy Berkbigler, 122 First Ave, Suite 600, Fairbanks, Alaska 99701, (907) 452 8251 ext. 3489, brandy.berkbigler@tananachiefs.org

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS: Ed Sarten, Ruby Tribal Council (RTC), (907) 468-4479, esarten@yahoo.com

PROJECT LOCATION: Ruby, Alaska, Yukon River

PROJECT OBJECTIVES: 1.) To collect age, sex, length, weight, and girth data as well a genetic tissue samples from subsistence Chinook salmon caught with fishwheels and set nets, the two types of gear used in this area. 2.) To better understand stock biology and composition of the Ruby harvest throughout subsistence windows.

Budget Priority Framework 2006:

- Improve information on stock ID and biological composition of run;
- In-season stock specific harvest estimates
- Assess fishing techniques re: their impact on harvest and stock genetics
- Involve and educate users and non-users in communities to increase their desire to maintain and protect salmon stocks and habitat.

US and Canada Yukon River Salmon Committee Joint Technical Committee Plan:

- Estimate the stock biological or other composition of escapements – 1.1.2;
- Build and maintain community capacity – 3.2.3.

2010 Near Term Priorities:

3. Determine the quality of stock escapement
5. Community Education and Stewardship

PROJECT SUMMARY: Management of the Chinook salmon fishery is difficult due to the mixed stocks of salmon, commercial and subsistence fishing, the many tributaries and the vast distance that the Yukon River flows. As a result, several controversies have arisen over time. First are concerns over allocation of the fishery based on the size of salmon runs year to year. Second, concerns have been raised about the genetic variability of Chinook salmon, particularly about the potential decreasing size of this species over time in the Yukon River. Data on the Ruby subsistence fishery are sparse. The biological sampling objectives of this proposed research are a direct attempt to address these concerns by producing a locally specific data set to be included with other geographical data sets to evaluate run size and genetic stock identification river-

wide. In the previous years of funding for this project 572 samples have been collected from Chinook salmon harvested in the Ruby subsistence fishery. Information such as ASL, genetics, run timing, and harvest data are very useful to state and federal managers to reconstruct the salmon runs, assess trends over time and implement management decisions to maintain the resource and meet treaty obligations with Canada. Ruby Tribal Council will monitor Chinook salmon harvest with trained technicians to collect scales for aging, axillary process fin clip, length, weight, girth, and gear type. Tanana Chiefs Conference will provide training and data analysis.

LIFE OF PROJECT: Ongoing

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	
Operation & Maintenance	$3,350
Admin/Indirect/Overhead	$973.40
Personnel	$5,040
Total Request	$9,363.40
Total In-kind/other	$6,600

ABSTRACT OR PROJECT SUMMARY: Ruby Tribal Council hired two technicians to assist in the data collection from subsistence harvested Chinook salmon. Technicians were trained on the data collection methodologies by Larry DuBois and Brandy Berkbigler in Ruby. ASL, axillary processes, and related information were collected from 144 Chinook salmon. Fishermen harvested Chinook salmon with set nets, drift nets, and fishwheels. Gear types were located on both the North and South banks of the Yukon River. Most of the harvest for the 2009 season was collected on the South bank. The small sample size reflects the more restrictive subsistence fishing schedule in the U.S portion of the Yukon Drainage. Scale cards and genetic tissues have been sent to ADF&G in Anchorage for analysis.

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: URE-08-10

PROJECT TITLE: Technical Assistance, Development, and Support to the Yukon River Fish Wheel Salmon Monitoring Project at Rampart Rapids using Remote Video Technology

PROJECT PROPONENT: U.S. Fish and Wildlife Service, Fairbanks FWFO

CONTACT: David Daum, 101 12th Ave, Rm 110, Fairbanks, AK 99701. (907) 456-0290. david_daum@fws.gov

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS: Stan Zuray, P.O. Box 172, Tanana, AK 99777. (907) 366-7114. stanzuray@gmail.com

PROJECT LOCATION: Project is located on the main-stem Yukon River, 1,176 km upstream from the Yukon River mouth and 58 km above the confluence of the Tanana River. The village of Tanana is located 60 km downriver from the site.

PROJECT OBJECTIVES: Video systems (originally developed by USFWS in 2000) are now an integral part of many fish wheel related projects throughout the Yukon River drainage. Video projects include catch monitoring projects on the Yukon and Tanana rivers, totalling over $100,000 in annual project costs. The advantages of utilizing the video monitoring system over traditional fish wheels with live-boxes are reduced handling and holding time for captured fish; improved counting accuracy; unattended operation; and lower labor costs. The video enumeration project at Rampart Rapids began in 2000 and targets main-stem Yukon River salmon, primarily Canadian-origin Chinook and fall chum salmon. The site has been used throughout the years for development and testing of new video components. This project is a great success story, building local biological capacity within a rural community. Because of the technical nature of video technology and the data analysis required, there is a continued need for technical assistance and support throughout the annual video enumeration project. This proposal would provide funding for this support. Also, as old equipment becomes outdated, new equipment needs to be tested and incorporated into the video system.

Project objectives include:

- provide technical assistance during the summer/fall field season to the Rampart Rapids video monitoring project;
- support remote website development; and
- assist in post-season data analysis and annual report review for the Rampart Rapids video monitoring project.

The proposal meets specific objectives identified in the Yukon River Panel's Budget Priority Framework 2006, the U.S. and Canada Yukon River Salmon Joint Technical Committee Plan, and the Panel's R&E Fund Priorities for 2010. Specifically:

Yukon River Panel's Budget Priority Framework 2006 - improve in-season run-size assessment methodology; analysis of spatial and temporal aspects of salmon migration; develop and test non-invasive, non-lethal methods of sampling and handling fish; involve and educate users and non-users in communities to increase their desire to maintain and protect salmon stocks and habitat; support technical capacity building in communities; and manage data storage, retrieval capabilities and data sharing.
US/Canada Joint Technical Committee Plan - estimate or index escapement, 1.1.1; estimate characteristics of run timing, 1.2.3; investigate new technology, methods and models, 1.4.3; utilize capabilities of communities, 3.2.1; and increase capabilities of communities, 3.2.3.
Panel's R&E Fund Priorities for 2010 – enable more effective community participation in the management of Yukon River salmon stocks and habitats; and increase salmon users and non-users desire to maintain and protect salmon stocks and habitat.

PROJECT SUMMARY: This project will involve the following steps:

- in-season (June – September) assistance in video system troubleshooting, repair, and operations for the Rampart Rapids video monitoring project;
- integrate additional information into the on-site remote website; and
- post-season data analysis, data checking, annual report editing, and proposal development for the Rampart Rapids video monitoring project.

David Daum, USFWS, developed the video system for fish wheels and has provided support for the project since its inception in 2000. The operator, Stan Zuray, has fished the site for over 25 years and has operated the video system since 2000.

LIFE OF PROJECT: This project is ongoing and has been funded by various sources since 2000.

ESTIMATED BUDGET: (US dollars)

Project Budget

	Amount $
Capital	600
Operation & Maintenance	800
Admin/Indirect/Overhead	1000
Personnel	3150
Total Request	5550
Total In-kind/other	1000

ON-GOING PROJECTS: This project supported the Rampart Rapids video monitoring project URE-09-08, therefore, an additional formal report with abstract was not submitted in 2008. A 3-page summary of work accomplishments was submitted to the Yukon River Panel, Executive Secretary, and is available upon request. The current year's data, 2009, are presently being analyzed with the 2009 report for the Rampart Rapids video monitoring project, URE-09-09, due in Dec., 2009.

YUKON RIVER SALMON RESTORATION & ENHANCEMENT FUND
2010 Conceptual Proposal

NUMBER: URE-09-10

Project Title: Rampart Rapids All Season Video Monitoring, 2010.

Project Proponent/Contact: Stan Zuray, Box 172, Tanana, Alaska, 99777, Telephone – 907 366 7114, Email – stanzuray@gmail.com, Website – RapidsResearch.com

Project Partners / Additional Participants: Dave Daum, U.S. Fish and Wildlife Service Fairbanks Field Office, david_daum@fws.gov, 907 456 0290,
Kathleen Peters Zuray, Tanana Tribal Council, kpzuray@yahoo.com, 907 366-7170

Project Location: Rampart Rapids, Yukon River mile 731.

Project Objectives:
1. To provide daily fish wheel/video catch-per-unit-effort (CPUE) data on Chinook, summer chum, and fall chum salmon, and migratory whitefish.
2. To continue improving fish-friendly fish wheel capture techniques and equipment.
3. To continue developing our present methods for adjusting raw catch data that takes into account factors such as river discharge, fish wheel catch efficiency and small versus large size Chinook yearly variations.

Yukon River Panel 2006 Budget Priorities:
Improve information on biological composition of run;
Involve and educate users and non-users in communities to increase their desire to maintain and protect salmon stocks and habitat. Short-term goal of community education and hands-on projects, with emphasis on youth-oriented projects (youth up to 18 years).

YR JTC Plan Goals and Objectives:
Estimate or index escapements – 1.1.1;
Investigate new technology, methods and models – 1.4.3

Budget Priorities for 2009 & Near Term Priorities:
3. Determine the quality of stock escapement
4. Development of live release fish gear
5. Community Education and Stewardship

Project Summary: Long-term monitoring of major salmon stocks is a necessary component of successful fisheries management on the Yukon River. This project provides the only U.S. main stem Yukon River assessment database of run strength and relative abundance of Chinook and chum salmon in 1000 miles of river. Many of these stocks are

bound for spawning grounds in Canada and contribute to international treaty obligations. Since 2000, the Rapids video fish wheel project has provided daily catch data of salmon and migratory whitefish species to fisheries managers throughout the Yukon drainage. The project's fish wheel design and construction incorporates features that reduce injury to fish. The installed video system allows fish to be immediately released back into the water, eliminating stress from live box holding and handling. Fish wheel operation and location is maintained in a consistent manner from year to year using a list of standards, so more meaningful comparisons and interpretations can be made. The video technology allows precise and reliable collection of catch-per-unit-effort data as demonstrated by the successful R&E Fund pilot project in 1999 and operational projects from 2000 to 2009. Daily in-season project CPUE numbers are sent to ADF&G. Project proponent, Stan Zuray, has been running fish wheels under USFWS contract or with R&E funding since 1996.

Life of Project: This is an ongoing project.

Estimated Budget:

Project Budget

	Amount $
Capital	
Operation & Maintenance	21,950
Admin/Indirect/Overhead	
Personnel	24,150
Total Request	46,100
Total In-kind/other	~10,000

Summary: The Rapids video monitoring project was designed to collect run timing and assessment information for salmon and other migratory fish species through the use of a video capture system that meets the project objectives and minimizes the handling stress to the fish sampled. The video camera capture system was developed for application in the remote field site at the Rampart Rapids fish camp and collects run timing, and CPUE data on Chinook (Oncorhynchus tshawytscha) and chum salmon (O. keta), sheefish (Stenodus leucichthys), humpback whitefish (Coregonus pidschian), broad whitefish (C. nasus), and cisco spp (C. laurettae and C. sardinella). In 2009, the project started counting on June 14 and will continue to the declining days of the last major chum pulse, usually around Sept. 20. The 2009 project has a cumulative CPUE of 2937 Chinook which is the second highest compared to the past 2000 to 2008 projects. Video sizing showed a significant increase in size over other monitored years (2004 to 2008) which was backed up by the more accurate AYK SSI data collection project. Detailed results can be viewed at http://rapidsresearch.com/. The fall chum run is currently in progress and has the lowest CPUE cumulative in the projects history now.

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: URE-13-10

PROJECT TITLE: *Ichthyophonus* in Chinook salmon – Continuation of a baseline in Emmonak and Eagle, Alaska and potential links to fecundity and blood chemistry

PROJECT PROPONENT: Larissa Dehn

CONTACT: *School of Fisheries and Ocean Sciences, University of Alaska Fairbanks, Fairbanks, Alaska 99775-7220, Phone: 907-474-7724, FAX: 907-474-7824; email: dehn@sfos.uaf.edu*

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS: *Krista Nichols, Purdue University, IN 47992; Christopher Whipps, SUNY College of Environmental Science and Forestry, Syracuse, NY 13210; Paige Drobny, Tanana Chiefs Conference, Fairbanks, AK 99701; Bonnie Borba, Roger Dunbar, Ann Crane, Alaska Department of Fish and Game, Fairbanks, AK 99701; Larry DuBois, Alaska Department of Fish and Game, Anchorage, AK 99518;*

PROJECT LOCATION: *Yukon River near Emmonak and Eagle, Alaska.*

PROJECT OBJECTIVES: 1) Maintain the temporal baseline of *Ichthyophonus* prevalence at Emmonak and at border passage (i.e., Eagle) in Yukon Chinook salmon;
2) Determine fecundity in female Chinook salmon harvested in Eagle and analyze eggs for water, total lipid, and nitrogen content to evaluate if infected Chinook salmon produce a similar number of eggs and allocate the same energy stores to ova as healthy fish;
3) Investigate biomarkers of disease in blood/plasma (e.g., tissue damage enzymes) to aid in the development of non-lethal *Ichthyophonus* testing
4) Establish prevalence of sea lice (*Lepeophtheirus salmonis* / *Caligus clemensi*), score severity of lesions, and compare lesion severity to infection with *Ichthyophonus*; and,
5) Provide opportunity for Alaska's fisheries students to be actively involved in research and resource management projects

Budget Priorities: Improve information on stock ID and biological composition of the run; Examine harvest trends over time in subsistence fisheries; Quality of escapements (i.e., age/size/sex; health); Document factors affecting survival, health and mortality at all life stages, including diseases; Develop and test non-invasive, non-lethal methods of sampling and handling fish; Examine linkage of disease, parasites and contaminants to freshwater habitats; Involve and educate users and non-users in communities to increase their desire to maintain and protect salmon stocks and habitat; Support technical capacity building in communities
R&E Priorities for 2010: Determine the quality of stock escapement; Community Education and Stewardship
JTC Plan: Estimate the stock, biological or other composition of escapements; Build and maintain community capacity; Promote understanding and participation in the development of management plans, methods, and strategies; Evaluate impacts of disease and parasites

PROJECT SUMMARY: *Ichthyophonus hoferi* is a protozoan parasite infecting various fish species, including Chinook salmon. Prior evidence suggests that infection with *Ichthyophonus* leads to reduced endurance, increased pre-spawning mortality, and potentially low fecundity. Continued poor returns of Chinook salmon from adequate spawning escapements raise questions about the involvement of disease in these declines. For three consecutive years average summer and winter water temperatures in the Eastern Bering Sea have been cold and coincide with a noticeable drop in *Ichthyophonus* prevalence over this time period. It is therefore crucial to continue the *Ichthyophonus* time series (1999-2009) at the Yukon River mouth near Emmonak to understand the potential linkage of disease prevalence and changing ocean conditions. Similarly, samples collected in Eagle (at border passage) provide not only information on escapement quality, but also advance our knowledge of physiological impacts of disease and spawning success. Yukon River Chinook are acquiring large lipid stores (making them a prized fish

for subsistence and commercial use), but deplete these considerable energy reserves while undertaking one of the longest salmon migrations in the world. However, energy demands are higher in diseased fish due to physiological stress and costs associated with immune response. Lipids may therefore be re-routed from gonads of *Ichthyophonus*-positive fish to complete the spawning migration and then they either produce less or lower quality eggs. In addition, blood metabolites (such as hormones and enzymes) can be significantly altered between healthy and infected fish, and may therefore have application as a non-lethal analytical tool to identify diseased fish. As in previous years, samples in Emmonak will be collected as part of the Big Eddy test fishery, operated by ADF&G, over the course of the Chinook salmon run (n=150). In Eagle, samples will be collected in collaboration with subsistence fishermen (n=200). At both locations, samples will be paired with morphometric data (i.e., ASL, girth, and weight). Presence of *Ichthyophonus* 18S rDNA will be evaluated using polymerase chain reaction (PCR) with DNA extracted from cardiac muscle and following established procedures. Fecundity and egg quality measurements will follow protocols implemented in previous years. Blood/plasma samples will be collected post mortem by caudal vein puncture and concentrations of selected catabolic enzymes will be measured using available ELISA assay kits and measured colorimetrically using a microplate spectrophotometer. The School of Fisheries and Ocean Sciences is developing a "fisheries-in-practice" undergraduate program to give students the opportunity to be actively involved in research and resource management projects. Up to three students will take part in various aspects of sample collection and analysis for this project, but will also participate in some of ADF&Gs in-season sampling and assessment projects in Emmonak and Eagle. Early exposure to research, management, and the human dimension yields highly trained young professionals to help maintain the future of an important resource.

LIFE OF PROJECT: Proposed for a single year, but has the potential to be run multiple years

ESTIMATED BUDGET:

Capital	$0
Operation & Maintenance (incl. Analysis, supplies, travel, etc.)	$32,214
Admin/Indirect/Overhead (15%)	$6,573
Personnel	$11,604
Total Request* *Cost increase due to request for student support during fall semester	**$50,391**
Total In-kind/other This project is supported by the existing infrastructure of test fisheries in Emmonak and Eagle. Time commitments of the PIs to train, sample, supervise, and complete this project are in-kind contributions.	

ABSTRACT OR PROJECT SUMMARY: Samples of Chinook salmon have been collected from the test fishery in Emmonak (n=150) and from subsistence fishermen in Eagle (n=201) over the course of the run in 2009. Even though Eagle was severely affected by the spring flooding of the Yukon (including destruction and loss of fishing gear) and the subsistence fishery was closed for 10 days during the run, fishermen were extraordinarily supportive of the sampling effort and the sampling target was reached. Samples have been shipped to the laboratories and all analyses are currently in progress. Clinically visible signs of infection with *Ichthyophonus* were noted in 5.3% of sampled fish in Emmonak (9.5% in 2008) and 11% in Eagle (12% in 2008). Samples have further been collected to determine fecundity and egg quality of subsistence-harvested Chinook and analyses are currently underway. Blood has been collected from all fish to evaluate feasibility of plasma sampling for blood chemistry analyses that could aid in development of non-lethal disease testing. Preliminary tests to validate enzyme assays for Chinook salmon blood are currently underway. ASL, weight, and girth have been collected at both locations and have been submitted to ADF&G, while genetic fin clips were sampled from the Eagle subsistence harvest and were shared with DFO.

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: URE-16-10

PROJECT TITLE: Yukon River Border Sonar Operations

PROJECT PROPONENT: Alaska Dept. of Fish and Game – Commercial Fisheries Division

CONTACT: Bruce McIntosh - ADF&G
1300 College Rd., Fairbanks, AK 99701
(907) 459-7286 bruce.mcintosh@alaska.gov

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS: DFO, YRDFA

PROJECT LOCATION: Yukon River Mainstem; vicinity of Eagle, AK

PROJECT OBJECTIVES: ADF&G and DFO actively manage Chinook and chum salmon fisheries in the Yukon River drainage, and the Canadian contribution to these stocks is an area of concern for both countries. In 2007 ADF&G and DFO began sharing joint responsibility for funding the day to day operations, which includes employment of DFO technicians during the field portion of the project. The primary objectives of this project going forward are to:

1. Provide fishery managers with inseason daily estimates of Canadian-origin Chinook and chum salmon passage using riverine sonar.
2. To estimate age, sex, and length composition of Canadian bound Chinook and chum salmon at the Eagle Sonar test fishery.
3. Increase bi-lateral confidence in, and agreement upon, the annual contribution of Canadian-origin salmon stocks.

Budget Priority Framework 2006: Continue in-season border passage estimates, improve information on stock ID and biological composition of run, and analysis of spatial and temporal aspects of salmon migration. Improve information on biological composition of run and long-term priority of completing run reconstruction for management/conservation units and constructing brood year tables.

US and Canada Yukon River Salmon Committee Joint Technical Committee Plan:
1.2.1 Estimate or index abundance.
1.1.2 Estimate the stock biological or other composition of escapements.

2010 Near Term Priorities:
3 - determine the quality of stock escapement; collect ASL data for Chinook salmon.
8 - JTC Research Priorities.

PROJECT SUMMARY: This project employs split-beam and imaging sonar equipment on the Yukon River to generate timely, inseason passage estimates of Chinook and chum salmon bound for Canadian waters. The project is located approximately 19 miles downstream from the U.S. – Canada Border and is scheduled to operate continuously from approximately July 5 through October 6. As a part of routine project operations, drift gillnetting is conducted daily to apportion hydroacoustic estimates to species and to collect ASL data and other biological samples representative of the Chinook and chum salmon runs. Additional test fishing, funded as a separate R&E proposal in 2008 and 2009, has been conducted at Eagle in conjunction with the originally established fishing schedule. This has been to assure adequate sample sizes were obtained to characterize the runs. Recognizing that the test fishing will continue to be a necessary component of project operations, this year a single proposal is being submitted which combines both the operations and the additional test fishing component.

LIFE OF PROJECT: Ongoing

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	0.0
Operation & Maintenance	37,000.00
Admin/Indirect/Overhead	17,200.00
Personnel*	85,700.00
Total Request	**139,900.00**
Total In-kind/other	149,600.00

**assumes funding for 2 DFO technicians*

ON-GOING PROJECTS:

ABSTRACT:

Dual-Frequency Identification Sonar (DIDSON™) and split-beam sonar equipment were used to estimate Chinook salmon *Oncorhynchus tshawytscha* and fall chum salmon *O. keta* passage in the Yukon River near Eagle, Alaska from July 5 to October 6, 2009. A total of 69,957 Chinook were estimated to have passed the sonar site between July 5 and August 20. As of this date the count of chum salmon is not complete. A drift gillnet test fishery was conducted to collect age, sex, length (ASL), genetic information, and to help determine when the Chinook run ended and the fall chum run began. Both sonar systems functioned well with minimal interruptions to operation. Range of ensonification was considered adequate for most fish which migrated upstream. A continued long-term hydroacoustic enumeration project for Chinook and chum salmon near the border will help fishery managers meet conservation and management commitments made by the U.S. and Canada under the Yukon River Salmon Agreement.

YUKON RIVER SALMON RESTORATION AND ENHANCEMENT FUND
2010 CONCEPTUAL PROPOSAL

PROJECT NUMBER: URE-19-10

PROJECT TITLE: Inseason genetic stock identification of Chinook salmon harvests on the Yukon River, 2010.

PROJECT PROPONENT: Nick DeCovich, Alaska Department of Fish & Game, 333 Raspberry Rd., Anchorage, AK 99518; (907) 267-2239; nick.decovich@Alaska.gov

PROJECT PARTNERS: William Templin, Larry DuBois and Katie Howard, Alaska Department of Fish & Game.

PROJECT LOCATION: Yukon River Management District Y-1

PROJECT OBJECTIVES: 1) To analyze Chinook salmon tissue samples from three commercial periods in the Lower Yukon River in 2010, to estimate the stock composition of those harvests inseason, and to test the potential application of stock proportion data to management decision making and 2) To analyze Chinook salmon tissue samples from all District Y-1 commercial periods in 2010 with results reported post-season. If no directed Chinook salmon commercial fishery occurs, samples from Lower Yukon River test fishery will be analyzed.

Budget Priority Framework 2010:
Improve information on biological composition of run;

US and Canada Yukon River Salmon Committee Joint Technical Committee Plan:
Estimate the stock biological or other composition of escapements – 1.1.2;
Improve run assessment capability; develop inseason stock ID – 1.4.1.

Budget Priorities for 2010 & Near Term Priorities:
2. Stock identification and inseason management;
3. Determine the quality of stock escapement

PROJECT SUMMARY: Successful management of mixed stock fisheries depends in large part on reliable indices of abundance and run timing, and estimates of stock composition in the run and harvest (Larkin 1981; Allendorf et al. 1987). While significant resources are expended towards estimating Chinook salmon run size inseason on the Yukon River, prior to 2008 managers have had no inseason information on the stock composition of the Chinook salmon run or harvest. Because a primary objective for managers is to allow a target number of Canadian-origin Chinook salmon to pass the international border due to a bilateral international agreement, knowing the abundance of Canadian-origin Chinook salmon in the commercial catch may inform management decisions made during the fishing season. Yukon River fisheries managers consider commercial catch numbers an important indicator of Chinook salmon run size for inseason

management, and post-season genetic analyses have been very effective at distinguishing major stock components in the commercial catch since 2004. Past studies on stock compositions of the Y-1 commercial harvest have shown that the proportion of Canadian fish may vary significantly over five or six fishing periods, with a contribution ranging from 25% to 54% (Templin et al. 2007). This project will collect and analyze genetic samples from all commercial periods in the Y-1 commercial Chinook salmon fishery for post-season reporting. In addition, we will analyze samples from three of these commercial fishing periods within a 48-hour period as a test of the utility of inseason stock composition estimates for making management decisions. In the event that there is no commercial fishery for Chinook salmon in District Y-1, samples from the LYTF will be analyzed to fulfill the inseason component of this study. Stock compositions will be estimated using the available baseline of single nucleotide polymorphisms (SNPs). The resolution of stock contribution estimates will be the same provided for post-season estimates (Templin et al. 2006). During this pilot project phase, inseason information will only be available to U.S. and Canadian fishery managers. Funding of this project does not imply that tissues collected from commercial periods will be shared among genetics laboratories.

LIFE OF PROJECT: 1 year

ESTIMATED BUDGET:

Project Budget

	Amount $	
Capital	$	11,148
Operation & Maintenance	$	2,796
Admin/Indirect/Overhead	$	4,163
Personnel	$	16,893
Total Request	$	35,000
Total In-kind/other	$	8,000

ABSTRACT/SUMMARY: We propose to continue a study to evaluate the feasibility of in-season mixed stock analysis of Chinook salmon (Oncorhynchus tshawytscha) harvested in commercial and test fisheries of the Lower Yukon River. In 2008, there was no Chinook salmon commercial fishery and 900 fish representing three major pulses in the Lower Yukon Test Fishery (LYTF) were analyzed. We estimated stock composition in each pulse, including at least three broad-scale reporting regions. The proportion of Canadian-origin Chinook salmon in each pulse ranged from a high of 53% during the first pulse to a low of 43% during the second pulse. In 2009, again there was no Chinook salmon commercial fishery and it was difficult to detect pulses in the LYTF. Four strata representing 1221 fish from the LYTF and Pilot Station Test Fishery were analyzed. The estimated proportion of Canadian-origin Chinook salmon in each stratum ranged from a high of 70% in the first stratum to a low of 43% in the fourth stratum. In each year, the low overall run strength combined with in-season genetic information on the Canadian-bound proportion of the run highlighted concerns regarding the run's capacity to meet the escapement goal at the Canadian border and subsistence harvests. Subsequently, fishery managers implemented reductions in the subsistence fishery and delayed the summer chum salmon commercial fishery.

YUKON RIVER RESTORATION AND ENHANCMENT FUND
COMMUNITY BASED STREAM STEWARDSHIP PROJECTS
2010 CONCEPTUAL PROPOSAL

NUMBER: URE-21N-10

PROJECT TITLE: Experimental Test Fishery Using Tangle Net Gear

PROJECT PROPONENT: Yukon River commercial fishers/processors, fisheries managers

CONTACT:
Glenn Haight, Lead Project Investigator
Alaska Sea Grant Marine Advisory Program
1108 F Street, Suite 215
Juneau, Alaska 99801
907-796-6046
Glenn.haight@uaf.edu

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:

Jack Schultheis Kwik'Pak Fisheries 1016 West Sixth Avenue Suite 301 Anchorage, AK 99501 907.644.0326	Fred and Linda Hawkshaw 4623 Graham Terrace, British Columbia Canada V8G 1A6 Ph - 250-635-3741 linfred@telus.net

PROJECT LOCATION: *Funding permitted, t*he project would occur three portions on the Alaska side of the river. This would include likely include sites near Emmonak, Galena, and Circle. There would be a priority on the Lower and Mid portions of the Yukon.

PROJECT SUMMARY: The project will test the effectiveness of tangle nets in reducing mortality for Chinook salmon while targeting chum salmon. Tangle nets are fishing gear that employs a loose and much smaller mesh size that promotes capture by the jaw bone as opposed to behind the gill plate. Tangle nets have been found effective in capturing the fish without killing the fish, thereby allowing for greater escapement of non-targeted species. In this study, tangle nets (test gear) and regular set net gear (control gear calibrated to harvest the target species) will work in close proximity. Both capture operations will employ revival tanks to assist captured fish in recovery. Detailed records will be kept on catching efficiency, mortality rates at capture, and survivability once harvested. The use of coded tags may also be employed.

Fred and Linda Hawkshaw, drift gill netters from British Columbia, have successfully used tangle nets in their operation for years. Along with an efficient revival tank system, the Hawkshaws are able to live capture gillnet species. In the early spring, the Hawkshaw's will travel to the study locations and train local Yukon River residents in how to use the tangle net gear and revival equipment. There will also be training for one observer for each operation. The observer will be in charge of on-site project management and carrying out the project methodology.

One of the harvesting individuals will be a youth under 18 if there is interest. It is possible the project will utilize local residents pursuing a fisheries degree with the School of Fisheries & Ocean Sciences, and hire a youth from the area who is interested in pursuing a biology degree. The project study will be overseen by Glenn Haight, with the Alaska Sea Grant Marine Advisory Program.

Jack Schulties with Kwikpak has offered to assist in the project with housing, boats, fishermen and equipment.

The study will be conducted for at least two weeks of fishing season when historical data indicates the mix of Chinook and chum salmon is highest.

LIFE OF PROJECT: The research is intended for the summer of 2010. Final results and analysis will be complete by December 2010.

ESTIMATED BUDGET:

Project Budget	
Training – includes airfare, consulting fees and per diem for three	$15,000 ($5,000 per training event)
Operations & maintenance – gear and nets, and transportation	$3,000 ($1,000 per site)
Personnel – Haight (2.0 months)	$19,000
Overhead	$13,300
Budget range	Up to $50,300

(It is anticipated in-kind labor and other funding will be available if the project is funded.)

ABSTRACT OR PROJECT SUMMARY: This is a new project. Other studies using tangle nets are available upon request.

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: URE-22N-10

PROJECT TITLE: Mountain Village Cooperative Chinook Salmon Drift Test Fishery Project

PROJECT PROPONENT: Yukon Delta Fisheries Development Association (YDFDA)

CONTACT: Gene J. Sandone, G.Sandone Consulting, LLC, 4950 W. Clayton Ave., Wasilla, AK 99654. 907-631-6033, gjsandone@gci.net

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS: Asacarsarmiut Tribal Council (ATC): Katherine Moses, (907) 591-2814 atcyouth@gci.net; and Alaska Department of Fish and Game (ADF&G), Steve Hayes, (907) 267-2383, steve.hayes@alaska.gov Bering Sea Fishermen's Association (BSFA) karen.gillis@bsfaak.org

PROJECT LOCATION:
Nearest Community: Mountain Village
Watershed: Mainstem Yukon River at approximately River Mile 87

PROJECT OBJECTIVES: The specific objectives of this project are to:

1) estimate the relative abundance and run timing of the Yukon River Chinook salmon run at Mountain Village (test net CPUE);
2) describe the ASL composition of the Chinook salmon caught in test drift nets;
3) provide additional genetic samples of the Chinook salmon for inseason analysis; and
4) provide a conservation and stewardship experience for rural local residents and/or local students.

PROJECT SUMMARY: YDFDA in cooperation with ATC and ADF&G will conduct a test fishery project near the community of Mountain Village on the mainstem Yukon River. The project will commence in early June and continue through mid-July. Specific test fishery sites will be established based upon knowledgeable local fishermen. Test fishing will be conducted twice each day with 7.5 inch stretch mesh gillnets. Two drifts will be conducted during each daily drift period for a total of 4 drifts per day.

Although project emphasis will be on Chinook salmon, catch data from all species caught will be recorded for each drift. Additionally, the fishing time for each drift will be noted and recorded so that catch-per-unit-effort (CPUE) statistics can be determined. Three scale samples will be collected from each Chinook salmon for subsequent age determination. Sex will be determined and recorded based on external characteristics. Length (mid-eye to fork of tail) of each Chinook salmon caught will be measured (nearest mm) and recorded. A genetic tissue sample will be collected from all Chinook salmon captured to bolster the sample numbers taken at the Pilot Station sonar site. All fish caught that were not mortally injured will be released. Mortally injured fish will be euthanized, transported to the community, and distributed to residents for

subsistence uses. All recorded test fishery data and the number of fish released and harvested by species will be reported to the ADF&G Emmonak office on a daily basis.

This project is strategically located between two ADF&G assessment projects that are separated by over 100 river miles and 3 fish travel days. Data from this project, in conjunction with the Lower River test fishery CPUE and the Pilot Station sonar counts, will allow a comparative assessment of Chinook salmon run strength and run timing among these three projects. This project will also provide additional insight into the expected Chinook salmon run strength at the Pilot Station sonar site.

Budget Priority Framework 2007:
Level 1 Conservation – Stocks – Management Needs: Run Assessment, Improve information on biological composition of run (ranked 1);

Level 1 Stewardship Management Needs: Stewardship, Involve and educate users and non-users in communities to increase their desire to maintain and protect salmon stocks and habitat (ranked 1).

US and Canada Yukon River Salmon Committee Joint Technical Committee Plan:
Estimate the stock biological or other composition of escapements – 1.1.2;

Build and maintain community capacity – 3.2.3.

Budget Priorities for 2010 & Near Term Priorities:
2. Stock Identification and In-Season Management

5. Community Education and Stewardship

LIFE OF PROJECT: Ongoing .
ESTIMATED BUDGET:

Operation & Maintenance	0
Admin/Indirect/Overhead	2,813
Personnel	11,250
Total Request	17,063
Total In-kind/other	11,090
Total Project cost	28,153

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: URE-23N-10

PROJECT TITLE: Stock composition of age-0 Chinook salmon rearing in non-natal U.S. tributary streams of the Yukon River

PROJECT PROPONENT: U.S. Fish and Wildlife Service (USFWS), Fairbanks FWFO

CONTACT: David Daum, USFWS, 101 12th Ave., Rm. 110, Fairbanks, AK 99701. (907) 456-0290. david_daum@fws.gov

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS: Blair Flannery, USFWS, Conservation Genetics Laboratory, 1011 E. Tudor Rd., Anchorage, AK 99503. blair_flannery@fws.gov

PROJECT LOCATION: The study area includes clear-water Yukon River tributaries between Circle and the USA/Canada border (260 km) and between Tanana and Stevens Village (250 km).

PROJECT OBJECTIVES: Rearing Canadian-origin Chinook salmon have been recently documented in downstream U.S. tributary streams of the Yukon River. A geographically limited study was conducted by USFWS in 2006 and 2007 to document non-natal rearing and genetic-origin of age-0 Chinook salmon captured in eight Yukon River tributary streams below the U.S.-Canada border (http://alaska.fws.gov/fisheries/fish/Technical_Reports/t_2008_102.pdf). Stock composition analysis indicated that populations from the Carmacks region contributed 91% to the mixtures in 2006 and 82% in 2007. Individual assignment analysis indicated that 100% of the assigned samples were of Canadian origin. The study also demonstrated that stock composition and individual assignment estimates derived from the existing genetic baseline were accurate and precise. Because of the importance of these findings, a comprehensive three-year distribution study was funded by the Alaska Sustainable Salmon Fund (AKSSF) in 2008 to describe the extent of colonization in U.S. tributary streams of the Yukon River above the Tanana River confluence. Along with distributional, biological, and aquatic habitat information, fin-clips of sampled fish are being collected and archived for future genetic stock analysis. By the study's completion in summer 2010, it is expected that over 40 non-natal streams will be documented to contain rearing, age-0 Chinook salmon and over 500 individual genetic samples collected. This 2010 R&E study proposal will provide funding to analyze this three-year genetic collection of non-natal reared, age-0 Chinook salmon for country and stock of origin. By knowing stock-specific stream use patterns for age-0 Canadian-origin Chinook salmon rearing in U.S. tributary streams, the relative importance of such streams can be determined and future research into freshwater requirements for specific stocks can be pursued.

Project objectives include:

- genotype collection of age-0 Chinook salmon from sampled streams; and
- estimate stock composition of samples for regional genetic groups and country of origin by year and collection area.

The proposal meets specific objectives identified in the Yukon River Panel's Budget Priority Framework 2006, the U.S. and Canada Yukon River Salmon Joint Technical Committee Plan, and the Panel's R&E Fund Priorities for 2010. Specifically,
Yukon River Panel's Budget Priority Framework 2006 – analysis of spatial and temporal aspects of salmon migration; assess out-migrants; locate and describe productive spawning and rearing habitat; provide salmon and salmon habitat information to integrate resource management processes.
US/Canada Joint Technical Committee Plan – identify important features of habitat 2.1.1; define boundaries of use over time 2.1.3; develop models of habitat suitability and use 2.1.4.
Panel's R&E Fund Priorities for 2010 – assess and document salmon spawning and rearing habitat to determine and conduct restoration activities; JTC research priorities outlined in US/Canada Joint Technical Committee Plan.

PROJECT SUMMARY: This project will involve the following steps:

- catalog stream-specific genetic collections from the three sample years;
- genotype all individual genetic samples;
- confirm each collected tissue to species (Chinook salmon) using diagnostic loci;
- use genetic stock composition analysis (cBAYES) to apportion mixtures to country of origin and regional genetic stock group;
- apply individual assignment genetic techniques to assign each stream collection to source region and country; and
- Compile all analysis results and present in report to the Panel.

All genetic analyses methods are described in detail in (http://alaska.fws.gov/fisheries/fish/Technical_Reports/t_2008_102.pdf)

David Daum, is a fishery biologist with USFWS, Fairbanks Fish and Wildlife Field Office. Mr. Daum has worked as a biologist in Alaska for over 30 years, with the majority of his experience studying many aspects of Yukon River salmon biology. He has published numerous scientific papers related to fisheries biology and techniques, both in peer-reviewed and government publications. He has been working on specific projects addressing use of non-natal streams by age-0 Chinook salmon in Yukon River tributaries since 2006.

LIFE OF PROJECT: This project is expected to last one year.

ESTIMATED BUDGET: (US dollars)

Project Budget

	Amount $
Capital	0
Operation & Maintenance	5,000
Admin/Indirect/Overhead	5,500
Personnel	20,000
Total Request	30,500
	(see note below)
Total In-kind/other	99,000

note: The in-kind amount of $99,000 was provided by the AKSSF to collect the genetic samples over three summer/fall field seasons (2008-2010).

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: URE-24N-10

PROJECT TITLE: Genetic Analysis of Chinook salmon from the subsistence harvest on the Yukon River

PROJECT PROPONENT: Tanana Chiefs Conference

CONTACT: Paige Drobny, 122 First Street, Suite 600, Fairbanks, AK 99701, (907)452-8251 ext 3488, paige.drobny@tananachiefs.org

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:
Terry Beacham, Fisheries and Oceans Canada**,** (250) 756-7149, Terry.Beacham@dfo-mpo.gc.ca

PROJECT LOCATION:
Communities throughout the mainstem of the U.S.Yukon River.

PROJECT OBJECTIVES:
This project provide estimates of stock compositions on a tributary, regional, and national basis for samples collected from the Chinook salmon subsistence fishery in Alaska. This analysis is important to understand the impact that the subsistence fishery is having various wild Chinook stocks in U.S. and Canada. Once the samples are collected, microsatellites will be used to provide estimates of stock composition for the fishery samples.

Budget Priority Framework 2006
Improve information on stock ID and biological composition of run

US and Canada Yukon River Salmon Committee Joint Technical Committee Plan
1.4.1 Improving run assessment capability

Panel's R&E 2010 Near Term Priorities:
2. Stock Identification and In-Season Management

PROJECT SUMMARY: Funding is requested to conduct microsatellite analysis of genetic samples from the Yukon River Chinook subsistence fishery. Axillary processes will be collected during the subsistence harvest using funds from a separate grant (AYKSSI). Samples will be collected in Nulato, Galena, mainstem Yukon River just below the Yukon River Bridge, Fort Yukon and Eagle. Standard sampling methods will be used in collection of the axillary processes. Samples will be collected throughout the fishing season from harvesters. Paige Drobny collected these samples during the 2009 fishing season and will be doing so again in the 2010 season. Terry Beacham is a research scientist who has previously preformed genetic analysis on Chinook salmon on the Yukon River, and will use techniques very similar to those

employed in the analysis of Chinook salmon samples in other areas in the Yukon River drainage. Microsatellites have been demonstrated previously to provide high resolution in estimates of stock composition. It is anticipated that 1500 Chinook salmon will be sampled, with a microsatellite analysis cost of $20/fish.

LIFE OF PROJECT: The collection of the genetic samples is funded through the 2010 fishing season. We anticipate future funding to continue this project so this will likely be an ongoing proposal.

ESTIMATED BUDGET:

	Amount $
Capital	
Operation & Maintenance	3,000
Admin/Indirect/Overhead	
Personnel	27,000
Total Request	30,000
Total In-kind/other	120,000

In kind money comes from AYKSSI grant that is used to fund sample collection.

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: URE-25N-10

PROJECT TITLE: Temperature Monitoring on Select Yukon River Tributaries

PROJECT PROPONENT: Heather Leba, Alaska Department of Fish and Game, Commercial Fisheries Division, 333 Raspberry Road, Anchorage, AK 99518; 907-267-2385; heather.leba@alaska.gov

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS: Al von Finster, Department of Fisheries and Oceans; Dani Evenson, Alaska Department of Fish and Game

PROJECT LOCATION: Yukon River Watershed

PROJECT OBJECTIVES:

1) Inventory available temperature data
2) Assess gaps in temperature data at escapement monitoring projects
3) Deploy temperature data loggers (Hobo) at project sites where none exist
4) Develop a standardized protocol for installation of loggers at each site (i.e., placement in river)
5) Develop database of existing data to set the stage for future analyses assessing relationships between river temperature from parent years and number of return spawners
6) Network with other agencies and users groups and recommend other temperature monitoring sites

Budget Priority Framework 2006:

Document factors affecting survival, health and mortality at all life stages, including diseases (develop predictive models), ranked 2
Environmental monitoring, particularly of key index streams, ranked 2
Provide salmon and salmon habitat information to integrated resource management processes, ranked 3

Joint Technical Committee Plan:

4.1.1 Assess the influence of environment on productivity
2.1.1 Identify important features of habitat

Budget Priorities for 2010 & Near Term Priorities:

8. JTC Research Priorities

PROJECT SUMMARY: It is well known that climate change is having an impact on Arctic environments, including thinning sea ice, increase in sea and air temperature and defrosting tundra. The Yukon River watershed has not been exempt from these effects, and has experienced highly variable environmental conditions including flooding, elevated water temperatures and extremely low water throughout the drainage in recent years. These environmental changes are likely affecting salmon productivity. Run sizes of Yukon River salmon, particularly for Chinook salmon and fall chum, were extremely below average in 2009, despite high parent year escapement (2003 and 2004 for Chinook and 2004 and 2005 for fall chum). It is likely that changing oceanic conditions and in-river conditions, affect the numbers of return spawners. Much of the available temperature data are spread among agencies, time series do not overlap, and data are absent for several escapement monitoring sites. In 2008, the Office of Subsistence Management (OSM) initiated a collaborative effort with ADF&G, USFWS, TCC and the Aquatic Restoration and Research Institute to conduct long-term temperature monitoring at 30 salmon escapement sites within Alaska. This proposed project will coordinate between agencies currently monitoring temperature at escapement sites and standardize data logger installation at those projects, in addition to data collection at the culmination of the field season. Further, other sites may be selected that are not currently monitored but are known to be important escapement tributaries. Finally, a database of temperature data will be constructed to facilitate future analyses including relationships between in-river temperature during parent years and the number of return spawners.

LIFE OF PROJECT: *single year*

ESTIMATED BUDGET: *Provide the following information for the proposed fiscal year.*

Project Budget

	Amount $
Capital	5000
Operation & Maintenance	
Admin/Indirect/Overhead	
Personnel	
Total Request	5000

Total In-kind/other

YUKON RIVER RESTORATION AND ENHANCMENT FUND
COMMUNITY BASED STREAM STEWARDSHIP PROJECTS
2010 CONCEPTUAL PROPOSAL

Number: CRE-06-10

PROJECT TITLE:
Yukon River North Mainstem Salmon Stewardship Project

PROJECT PROPONENT:
Dawson District Renewable Resources Council

CONTACT:
Liz Fraser
Executive Secretariat
PO Box 1380
Dawson City YT Y0B 1G0
(867) 993-6976
dawsonrrc@northwestel.net

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:

Tr'ondëk Hwëch'in
Fish & Wildlife Department
(867) 993-7145

PROJECT LOCATION:
Community: Dawson City

Rivers/streams:
Yukon River Mid-mainstream: Clinton Creek, Mickey Creek, Klondike River watershed

PROJECT SUMMARY:

Staff
Field supervisor – hired for a total period of 6 weeks (including time for hiring students, required training and preparation of project)

Field staff – Two high school aged youth (between 14-17) – total of 10 weeks of employment including (2x) 3 day for bear safety training, first aid course, and several days training with DFO staff. The first week of employment for students will be training.

Supervision and management
Field supervisor will manage field work, including supervision of staff. The Executive Secretariat of the DDRRC will manage the project (including organising training). Project assistance will be provided by Al von Finster (DFO).

Summary
Staff will spend approximately 6 weeks, with 5 weeks in the field and one week in house assisting with hiring two students and preparing for project start date, during July-Aug 2008. The work will include:

- Participate in hiring two students from the local high school
- Expand on 2006 - 2009 project by identifying further affected habitat due to non-permanent barriers such as beaver dams, log jams and isolated pools
- Use local and traditional knowledge in site identifications
- Gauge relative population density of juvenile salmon in study streams
- Collect juvenile salmon below dams and relocate upstream of the dams
- Rescue stranded fry from transient pools in the Klondike River and return them to the mainstream
- Assure community involvement, by way of local youth, elders, and qualified technical support
- Evaluate and report the effects and success of restoration efforts

ESTIMATED BUDGET:
On-going

	Amount $
Operation & Maintenance	9115
Admin/Indirect/Overhead	3671
Personnel	15358
Total Request	28144
Total In-kind/other	1280

DRAFT ABSTRACT FROM 2010 PREVIOUS YEAR PROJECT

This project aimed to relocate Chinook salmon to rearing habitats and salvage juvenile Chinook from isolated habitats. Planning was conducted in consultation with DFO. Two local high school students were hired and worked in the field under a field supervisor. Both students remained with the project throughout, learned a lot from the season and they performed well. DFO staff provided invaluable technical support to the team. The project started on July 13 and ended on Aug 14, 2009. A total of 1393 juvenile salmon were captured and transported to upstream habitats or from isolated pools to open waters. New areas were investigated. The DDRRC recommends that the project continues by assisting the juvenile Chinook to make it to rearing areas.

YUKON RIVER RESTORATION AND ENHANCEMENT FUND
COMMUNITY BASED STREAM STEWARDSHIP PROJECTS
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-07-10

PROJECT TITLE: Tr'ondëk Hwëch'in First Fish Culture Camp

PROJECT PROPONENT: Tr'ondëk Hwëch'in

CONTACT:

Lee Whalen
Heritage Program Coordinator
Department, Heritage
Tr'ondëk Hwëch'in
Box 599
Dawson City, YT Y0B 1G0

Tel: 867.993.7113
Fax: 867.993.6553
E: lee.whalen@gov.trondek.com

PROJECT LOCATION: The Town of Dawson City, Yukon: Yukon north mainstem watershed

PROJECT OBJECTIVES: This project seeks to access the conservation and stewardship envelopes of the Yukon River Panel's Budget Priorities Framework. Through the conservation envelope, we will impart to local youth the principles of conservation by expounding on the value (both cultural and biological) of salmon and their habitat. Through the stewardship envelope, we will help to educate both users and non-users (as the case may be) on the importance of maintaining healthy salmon stocks now and into the future. It is our expectation that these principles will be carried forward for, as the youth grow into young adults, they will carry with them an appreciation for salmon.

PROJECT SUMMARY: Tr'ondëk Hwëch'in has been providing this fish camp to local youth for many years now. Over the years, we've observed the knowledge that the youth have gained and we continue to feel the need to provide opportunities for youth to learn more about conservation and stewardship of salmon. Through this project, local children have grown to know the value of salmon and the importance of their habitat and conservation. By continuing to educate as many youth as possible, we believe we are helping to instill within them the value of stewardship and are thereby helping to ensure the future health of our salmon resources.

Early in July, camp personnel will be identified and all workshops will be coordinated with the respective participants. The camp is a joint effort of the various TH governmental departments (Heritage and Culture, Youth Enhancement), with much valued input from TH elders, who provide not only traditional handling methods but also oral history and Hän language. This intergenerational approach is one way by which we are able to maintain a link to past practice while crafting modern means of salmon harvesting. In this way, we are able to help frame our children's understanding of our social world according to the beliefs passed down to us.

LIFE OF PROJECT: Ongoing

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	
Operation & Maintenance	10,000
Admin/Indirect/Overhead	
Personnel	
Total Request	10000
Total In-kind/other	13,000

ON-GOING PROJECTS: (Introduction from the Detailed Project Proposal of CRE-07-07) In the management of our salmon resources, rarely do we manage fish; rather we manage their harvest. By teaching our youth the importance of salmon and the habitats on which they depend, we instill within them conservation and stewardship ethics. By imparting these ethics, the next generation will work to ensure the future health of our salmon resources.

In the summer of 2000, 2002, 2003, 2005, 2006,2007 and again in 2008, very successful fish camps geared towards salmon conservation and stewardship were hosted by Tr'ondëk Hwëch'in for local Dawson City youth. During this time, children were exposed to many issues and practices, such as: First Nation and commercial fishing values; First Nation and commercial fishing methods, which included cleaning, smoking and drying methods; educational talks and field trips on life histories, fry habitat, habitat management, stock assessment, conservation and protection techniques; and, boat/river safety techniques. The youth then participated in a very large public gathering where they, customarily and respectfully, gave their first fish away to Elders. The children left the camp having learned a great deal of respect for the river and all the salmon it affords our community. It is our intent that the youth, now young adults, will look to the river and the salmon with the same affinity as we do and as did our ancestors.

YUKON RIVER RESTORATION AND ENHANCMENT FUND
COMMUNITY BASED STREAM STEWARDSHIP PROJECTS
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-09-10

PROJECT TITLE: Tr'ondëk Hwëch'in Student Steward

PROJECT PROPONENT: Tr'ondëk Hwëch'in (TH)

CONTACT:

Roberta Joseph
Coordinator
Fish and Wildlife Branch
Tr'ondëk Hwëch'in
Box 599
Dawson City, YT Y0B 1G0

Tel: 867.993.7107
Fax: 867.993.6553
E: roberta.joseph@gov.trondek.com

PROJECT LOCATION: The Town of Dawson City, Yukon: Yukon north mainstem watershed

PROJECT OBJECTIVES: This project seeks to access the stewardship envelope of the Yukon River Panel Budget Priorities Framework. Through the stewardship envelope, this project will involve and educate a local youth to increase his or her desire to maintain and protect salmon stocks and habitat. Moreover, the incumbent will be expected to participate in existing restoration and enhancement projects and, gradually and where appropriate, lead such projects in the future.

PROJECT SUMMARY: A local youth will be hired for a 9 week period during the peak salmon season for an estimated employment rate of $12/hour to work on specific restoration and enhancement projects. This would entail helping to carry out the First Fish camp and observing the Klondike River Sonar and similar project undertaken by the Dawson District Renewable Resources Council (DDRRC). It is planned that this position would work with the project coordinator of the DDRRC projects from time to time, when projects are based on Settlement Land. The Youth will also assist with any other TH communal projects which support the cultural and traditional requirements of TH.

LIFE OF PROJECT: Ongoing

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	
Operation & Maintenance	
Admin/Indirect/Overhead	690
Personnel	4,600
Total Request	5290

Total In-kind/other

ON-GOING PROJECTS: (Abstract from CRE-09-09 Final Report) Tr'ondëk Hwëch'in (TH) believes that our children are our future, that we must address the needs of our citizens, that we must devise ways and means to improve opportunities, capacities and skills of our youth, and that we must help to empower our people. To that end, the initial CRE-09-08 Student Steward project was designed to involve a local youth by familiarizing him or her with the activities of the TH Fish and Wildlife branch and encouraging him or her towards a career in renewable resources (stewardship).

Over the course of the summer of 2009, beginning on June 15 and ending August 7, 2008, the incumbent, Tyler Taylor, worked with Fish and Wildlife personnel on a daily basis and Marshal Jonas worked in the absence of Tyler Taylor. The objective was to provide them with experience in working in our field, which included their participation in other restoration and enhancement projects, while encouraging their interest in pursuing an education/career with renewable resources. As a result, they were exposed to a variety of other existing Yukon River Panel Restoration and Enhancement projects presently underway in the Dawson City region. This was done in a collaborative fashion, working with the TH Heritage Department on First Fish, and the TH Fish and Wildlife branch on the constructing the Blast Freezer and assisting with TH communal Fisheries.

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-16-10

PROJECT TITLE: Klondike River Sonar Project

PROJECT PROPONENT: B. Mercer & Associates Ltd.

CONTACT: Brian Mercer. Box 20046, Whitehorse Yukon, Y1A 7A2.
bmercer@northwestel.net

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:
Additional Participant – Tr'ondëk Hwëch'in First Nation James MacDonald, 867-993-7145, *James.MacDonald@gov.trondek.com*

PROJECT LOCATION: Dawson City, Klondike River Watershed.

PROJECT OBJECTIVES: 1. Enumerate the total Chinook salmon escapement entering the Klondike River watershed in 2010 using a DIDSON sonar.
This objective is compatible with the Budget priority framework under the conservation – stock -run assessment category. This objective directly relates to the 2010 near term budget priority as it will directly provide information on stock assessment/escapement.

PROJECT SUMMARY: In July and August 2009 a successful Chinook sonar enumeration project was conducted on the Klondike River watershed. The project commenced on July 2 with transport and construction of weir materials and other equipment to the site. A site 4.5 km upstream of the mouth of the Klondike River was selected during a feasibility study in 2008. The location has a total wetted river width of approximately 53 m with a maximum depth of approximately 2 meters. The cross section profile at this location is conducive to providing complete ensonification of the water column with no shadows or blind spots. Two short weir structures were constructed on each side of the river to reduce the effective migration width to 38 m. The maximum ensonification range of a standard DIDSON sonar unit is 40 m. Temporary living and operation quarters were established on the south side of the river using a wall tent. Electricity to operate the sonar and related computer equipment was purchased from a nearby resident. The sonar was operational from July 6 through August 14.

A LR DIDSON sonar from the Big Salmon River sonar project was used for the initial 12 days of the 2008 Klondike project, after which a rental unit was used for the remainder of the project. The operation of the sonar was continuous, 24 hours per day over the

project period, with at least one person on site at all times. The sonar was inoperative for approximately 36 hours due to technical problems with the rental unit. Methods employed were the same as those used on the Big Salmon River Chinook enumeration project which has successfully operated for the past 5 years. Approximately 4600 Chinook salmon were counted entering the Klondike watershed in 2009.

It is anticipated the proposed 2010 Klondike sonar project will be conducted in the same manner as the 2009 project at this site. However it is proposed to conduct a carcass pitch survey on the upper Klondike River as a component of the 2010 project. This would involve use of a jet boat to access the principal spawning areas on the North and South Klondike rivers. Chinook carcasses would be sampled for age, length, and sex. DNA samples could be collected if required.

An additional 3 weir tripods and the required weir panels should be purchased and constructed for the 2010 project. In addition, it would be advantageous to have a remote controlled motorized aiming/tilting apparatus for the sonar unit. It is proposed to purchase one for the 2010 project.

Biologists and senior technicians with the past Big Salmon River project and the 2009 Klondike project would again be involved with the initial deployment and ongoing operation of the sonar project. A Fish and Wildlife technician from the Tr'ondëk Hwëch'in First Nation may be employed on the project in 2010.

LIFE OF PROJECT: This proposed project is for one year with the anticipation that it will be ongoing on an annual basis. It is probable the contractor will purchase a new standard DIDSON sonar and rent it to the project at the current 2009 rental rates. Avoiding the rental and transport of a used DIDSON rental unit from the only available supplier should contribute to a greater probability the project will be successful without an increase in operational costs.

ESTIMATED BUDGET:

Operation & Maintenance	34,500
Admin/Indirect/Overhead	6200
Personnel	31295
Total Request	73995
Total In-kind/other	6000

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-27-10

PROJECT TITLE: Porcupine River Chum Mark/Recapture Program

PROJECT PROPONENT: Vuntut Gwitchin Government

CONTACT:

- Dick Mahoney, Fish and Wildlife Coordinator, Vuntut Gwitchin Government
  Box 94, Old Crow, YT, Y0B 1N0
  Phone: (867) 966-3261
  dmahoney@vgfn.net

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:

- Fisheries and Oceans Canada, Contact Patrick Milligan, phone: (867) 393-6720, milliganp@pac.dfo-mpo.gc.ca
- EDI Environmental Dynamics Inc., Contact Ben Snow, Phone: (867) 393-4882, bsnow@edynamics.com

PROJECT LOCATION:

Old Crow, Yukon Territory, Canada. Porcupine River watershed.

PROJECT OBJECTIVES:

This table lists project objectives while relating them to applicable Panel and JTC documents.

Project Objective	R&E Budget Priorities Framework	JTC Plan	2010 R&E Budget Priorities
Provide in-season border passage estimates of chum salmon in the Porcupine River	Conservation ▪ Stocks ▪ Run Assessment	1.2 Assess abundance inseason	n/a
Provide improved in-season management capacity through improved estimates of abundance and timing of chum returns to the Porcupine River	Conservation ▪ Stocks ▪ Run Assessment	1.2 Assess abundance inseason	n/a
Provide information on the proportion of Porcupine River chum stocks spawning in the Fishing Branch River or in other locations, thereby contributing further to the monitoring of stock escapement in Canadian tributaries	Conservation ▪ Stocks ▪ Escapement Studies	1.1 Monitor or project escapements by Conservation Management Unit	1. Stock Escapement Monitoring of the Canadian Tributaries
Ongoing development of an escapement index using data obtained from the mark/recapture program and the Fishing Branch weir.	Conservation ▪ Stocks ▪ Escapement Studies	1.1 Monitor or project escapements by Conservation Management Unit	1. Stock Escapement Monitoring of the Canadian Tributaries
Continue development of local capacity to conduct fieldwork independently.	Stewardship ▪ Technical capacity building in communities	3.2 Build and Maintain Community Capacity	4. Community Education and Stewardship

PROJECT SUMMARY:

The Porcupine River chum mark/recapture program has been operated locally since 2003. Over several years of operations, successful methodology suitable to local conditions has been developed. In 2009, the program was transitioned form a mark/recapture to an index program (CRE-27-09).

As more years of netting data (over a wide variety of water levels) are collected, a more refined index will be developed and more refined estimates will be produced. The program will continue to provide fisheries managers with valuable data to compliment the data collected at the Fishing Branch River Enumeration Weir. Such data is crucial for the long term management of Porcupine River chum salmon stocks.

A qualified biologist will be contracted to oversee project operations and report preparation.

This project will involve the following activities (see past reports, CRE-27-08—etc., for more info.):

- Two or three crew members will enumerate and tag chum salmon on the Porcupine River at a location downstream from Old Crow:
  - nets used to capture the fish will be constantly monitored, and once caught, fish will be promptly tagged and released to minimize stress; and,
  - tagging will take place 5 days per week for 5-6 weeks, beginning in mid to late August.
- If operational, further recapture data will be gathered by the local Community Steward from the Old Crow aboriginal fishery.
- Resulting estimations of chum populations will be used by local managers to ensure adequate escapement of chum salmon.
- Chum salmon tagged in this program that pass through the Fishing Branch enumeration weir will be counted to estimate the proportion of Porcupine stocks that return to the Fishing Branch River, while also indicating the proportion spawning elsewhere.
- Samples for DNA analysis will be taken and provided to DFO if requested.

LIFE OF PROJECT:
This project is ongoing.

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	0
Operation & Maintenance	7,420
Admin/Indirect/Overhead	5,360
Personnel	28,315
Total Request	41,095
Total In-kind/other	1,800

ON-GOING PROJECTS:
2009 Project Update:
The 2009 project was the first year of the index program. This index was logistically successful, however; abnormally high water levels throughout much of September complicated netting efforts and may have resulted in lower estimate of chum salmon numbers.

Abstract (paraphrased) From 2008 Project Report:

A chum salmon (Oncorhynchus keta) mark-recapture program was conducted on the Porcupine River near the community of Old Crow, YT, during the autumn of 2008. Through the use of data collected in the mark-recapture program, an estimated 52,962 (+/-13,798) chum salmon passed Old Crow between August 26th and September 28th, 2008. The project was extremely helpful to fisheries managers early in the run, when the results from the mark recapture program provided support to aid in the avoidance of a closure of the fishery.

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-29-10

PROJECT TITLE: Chinook and Chum Spawning Ground Enumeration – Tatchun to Minto 2010

PROJECT PROPONENT: Selkirk District Renewable Resource Council

CONTACT:

Brenda Bosley *Selkirk Renewable Resource Council* *Box 32, Pelly Crossing, Yukon* *Canada Y0B 1P0* *Ph: 867 537 3937* *Email: SRRC@northwestel.net*	*Nicholas de Graff* *Can-nic-a-nick Environmental Sciences* *Box 10106, Whitehorse, Yukon* *Canada Y1A 7A1* *Ph: 867 668 4682* *Email: trout@northwestel.net*

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS: Little Salmon Carmacks First Nation and the Carmacks Renewable Resource Council.

PROJECT LOCATION: Pelly Crossing is the closest community but all field word will occur on the Yukon River mid-mainstem sub-basin between Tatchun and Fort Selkirk.

PROJECT OBJECTIVES: This project is intended to compliment the stock escapement monitoring priorities that were established with the 2010 R&E fund budget. This is one of only a few escapement monitoring projects on the upper Yukon River mainstem. The project occurs in the Canadian mainstem portion of the Yukon River between the community of Carmacks and Pelly Crossing. A rebuilding program that was established in the late 1990's for Canadian origin chum and more recently chinook salmon continues. The objectives of this project include: 1) Estimate relative escapement strength in the Tatchun-Minto Index area for 2010; 2) characterize spawning areas and locations that are ecologically important to bear salmon interaction and 3) Involve and train local people and build an interest in the community of ongoing fisheries management activities in the LSCFN and SFN Traditional Territory.

PROJECT SUMMARY: This project will involve the following steps: 1) Visual inspection of key spawning areas during the salmon spawning season in August and October to: 1) Enumerate both chinook and chum salmon carcasses and spawning aggregations at geo-referenced sites between Tatchun and Fort Selkirk; 2) Characterize and document unique avifauna and wildlife congregations at spawning sites 4) and 3) Collection of biological, DNA or other data as required for DFO.

Qualifications: The executive secretary of the Selkirk Renewable Resource Council (SRRC) has been administrating and managing this project successfully in the community since the late 1990's. There is unanimous support by SRRC Council members for these types of projects in the community that build capacity and interest among youth. CAN-NIC-A-NICK Environmental Sciences is a company that specializes in environmental consulting, particularly projects that relate specifically to fish and fish habitat. Nicholas de Graff is the sole proprietor and has worked in the fisheries management and the aquatic science field for over 25 years in northern Canada.

LIFE OF PROJECT: Multi-year project and ongoing.

ESTIMATED BUDGET: Provide the following information for the proposed fiscal year.

Project Budget

	Amount $
Capital	500
Operation & Maintenance	2,500
Admin/Indirect/Overhead	2,000
Personnel	7,000
Total Request	$12,000

Total In-kind/other

ON-GOING PROJECTS:

The Department of Fisheries and Oceans Canada has conducted tagging programs on migratory Pacific salmon populations in the upper Yukon River drainage since 1982. Yearly spawning migration estimates are used to monitor the relative long term spawning intensity and locations in the upper Yukon River mainstem.

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-37-10

PROJECT TITLE: Blind Creek Chinook Salmon Enumeration Weir

PROJECT PROPONENT: J. Wilson & Associates

CONTACT: Jane Wilson, 31 Donjek Road, Whitehorse, Yukon,Y1A 3P8, (867) 668-6225, janewilson@northwestel.net

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS: no other partners/participants.

PROJECT LOCATION: Nearest communities: Faro, Ross River. Pelly River Watershed.

PROJECT OBJECTIVES:
1) Install and operate a weir in Blind Creek to enumerate the Chinook salmon escapement.
2) Conduct a sampling program to obtain age-sex-length data from live Chinook salmon at the weir.

The above two objectives fall within the stated YRP budget priority Framework 2007 goals of Conservation – Stocks – Run Assessment/Escapement studies. The R&E Fund Budget Priorities Subcommittee recommends the following as a 2009 near term priority for use of the R&E Fund in 2009: "stock escapement monitoring of the Canadian tributaries" and implementation of "stock escapement monitoring projects for selected Canadian tributaries." The above objectives are also concordant with the JTC research plan for scientific research to obtain information for the management of Yukon River Chinook stocks.

3) Promote salmon viewing and increase awareness of the weir project and the salmon resource.
4) Provide training and employment for community residents.

The above two objectives fall within the R&E Fund Budget Priorities for use of the R&E Fund in 2009: "Communications – Outreach & Information Sharing."

PROJECT SUMMARY: This project will involve the installation of a weir in Blind Creek to enumerate the Chinook salmon escapement and obtain biological samples. The weir will be placed in the same general location as in previous operations, approximately 1 km upstream of the creek mouth. Construction of the weir will begin on or around July 16 using existing weir materials stored on site. The weir will be operated over the course of the run, ending on or around August 19. Personnel will be on site 24 hours a day and the weir checked each day on an hourly basis from first light until dark. Fish will be sampled randomly each day with the objective of sampling as many live Chinook as possible with a minimum goal of 25% of the total run. Sampling will consist of collecting five scales per fish placed in prescribed scale cards, recording sex and fork length as well as 50 paired FL and mid-eye fork (MEF) lengths (to the

nearest 0.5cm). Updated copies of the salmon brochure, produced in 2005, which describes the weir operation and pertinent information on Chinook salmon, will be made available to the Town of Faro Interpretive Centre. The proponent (Jane Wilson) will administer, co-ordinate and oversee operations as in all previous weir operations in Blind Creek since 2003. Training and employment opportunities will be provided for residents of Faro and Ross River as in previous years.

LIFE OF PROJECT: Ongoing

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	
Operation & Maintenance	11,728.00
Admin/Indirect/Overhead	4,363.00
Personnel	31,909.00
Total Request	48,000.00
Total In-kind/other	0

ON-GOING PROJECTS:

BLIND CREEK CHINOOK SALMON ENUMERATION WEIR, 2009
CRE-37-09

ABSTRACT

A weir was operated in Blind Creek to enumerate the 2009 Chinook salmon escapement and obtain information on stock characteristics. This is an ongoing program funded by the Yukon River Panel, Restoration & Enhancement Fund, since 2003. The weir site was located in the same general area as in previous years, approximately 1 km upstream of the confluence with the Pelly River. Operation of the weir began on July 20 and continued until August 19. The first fish passed through the weir on July 27. In total, 716 Chinook salmon were counted. Fifty percent of the run had passed through the weir by August 6 and 90% by August 10. Chinook spawners were sampled randomly throughout the weir operation to obtain information on the age-sex-length structure of the run. A total of 245 Chinook salmon (34% of the run) was sampled of which 106 (43%) were female and 139 (57%) were male. Jacks (males with a fork length $\leq$ 630 mm) comprised 23% of the males sampled. The mean fork length of females and males sampled was 860 mm and 753 mm, respectively. Scale samples are currently undergoing age analysis by DFO. As in the past three years, a salmon brochure containing information about the salmon resource and weir operations was produced for distribution to visitors of the Town of Faro Interpretive Centre. At least 40 people visited the weir over the course of operations this year.

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-41-10

PROJECT TITLE: Sonar Enumeration of Chinook Salmon on the Big Salmon River

PROJECT PROPONENT: J. Wilson & Associates

CONTACT: Jane Wilson, 31 Donjek Road, Whitehorse, Y1A 3P8, (867) 668-6225, janewilson@northwestel.net

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS: B. Mercer & Associates Ltd., Brian Mercer, (867) 633-2795, bmercer@northwestel.net

PROJECT LOCATION: Nearest community: Little Salmon Carmacks; Big Salmon Watershed

PROJECT OBJECTIVES:
1) Operate a sonar station on the Big Salmon River to enumerate the Chinook salmon escapement.
2) Conduct spawning ground sampling for age-sex-length data from post-spawn fish.

The above objectives fall within the stated YRP budget priority Framework 2007 goals of Conservation – Stocks – Run Assessment/Escapement studies. The R&E Fund Budget Priorities Subcommittee recommends the following as a 2009 near term priority for use of the R&E Fund in 2009: "stock escapement monitoring of the Canadian tributaries" and implementation of "stock escapement monitoring projects for selected Canadian tributaries." The above objectives are also concordant with the JTC research plan for scientific research to obtain information for the management of Yukon River Chinook stocks.

PROJECT SUMMARY: This project will involve the installation and operation of a DIDSON sonar device to enumerate Chinook salmon entering the Big Salmon River system. As demonstrated in previous sonar operations since 2005, sonar enumeration provides a low impact, non-intrusive method of determining the Big Salmon River Chinook escapement, run timing, and diel migration patterns. In addition to enumeration, Chinook carcass sampling will be conducted to obtain information on the age and sex structure of the population. This project will provide a Chinook escapement index on the upper Yukon River system; increase the precision of basin wide population estimates and allow for a more accurate post season 2010 Chinook run re-construction. The goal of the project is to provide additional stock assessment information that will enhance the ability of the relevant salmon management agencies to manage Yukon River Chinook salmon.

In the 2010 season, it is proposed that better facilities be constructed in anticipation of the longevity of the sonar program. This will include construction of a small cabin to house the computer station and provide over-wintering storage space for some camp gear. In addition, freighting efficiency will be improved by reducing the number of boat trips required to set up camp.

Also proposed in 2010 is the purchase of a sonar aiming device which accurately adjusts the sonar unit to varying water levels.

The proposed project will be administered and co-ordinated by Jane Wilson (J. Wilson & Associates). Ms. Wilson is a fisheries biologist with extensive experience working with a variety of agencies and First Nations in Yukon and Northern B.C. She has successfully administered and co-ordinated the Big Salmon sonar enumeration project each year since 2005. Brian Mercer will be responsible for the set up and operation of the sonar project. Mr. Mercer is a registered professional biologist with 28 years experience in fisheries related projects in northern B.C. and the Yukon. He initiated the Big Salmon sonar enumeration project in 2005 and was responsible for the set up and successful operation of the sonar project during each year of operation. Jim Mercer will supervise daily operations at the sonar enumeration station. Mr. Mercer is a student with extensive practical computer experience and has capably performed field technical duties each year since the initiation of the Big Salmon sonar project in 2005.

LIFE OF PROJECT: ongoing

ESTIMATED BUDGET:

	Amount $
Capital	
Operation & Maintenance	30,607.00
Admin/Indirect/Overhead	7,691.00
Personnel	46,300.00
Total Request	84,597.00
Total In-kind/other	0

ON-GOING PROJECTS: 2009 Sonar Enumeration of Chinook Salmon in the Big Salmon River System

CRE-41-09

ABSTRACT

A long range dual frequency identification sonar (DIDSON-LR) was used to enumerate the Chinook salmon escapement to the Big Salmon River in 2009, as well as determine associated run timing, and diel migration patterns. This was the fifth year of sonar operation at this site. The sonar site was located on the Big Salmon River at the same location as in previous years, approximately 1.5 km upstream of the confluence with the Yukon River. Sonar operation began on July 16 and continued to August 23. A total of 9,261 targets identified as Chinook salmon was counted past the sonar station between July 16 and August 23, 2009. A carcass pitch was conducted over approximately 100 km of the Big Salmon River that yielded 182 Chinook carcasses. Each carcass was sampled for age, sex and length (ASL data). Of the 182 fish sampled, 97 (53%) were female and 85 (47%) were male. The mean mid-eye fork length of females and males sampled was 822 mm and 763 mm, respectively. Scale samples are currently undergoing analysis by DFO.

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-51-10

PROJECT TITLE: 2010 KDFN Michie Creek Salmon and Habitat Monitoring Project

PROJECT PROPONENT: Kwanlin Dun First Nation (KDFN)

CONTACT:

Dave Sembsmoen Kwanlin Dun First Nation 35 McIntyre Drive, Whitehorse, Yukon Canada Y1A 5A2 Ph: 867 633 7814 Email: dsembsmoen@kdfn.yk.ca	Nicholas de Graff Can-nic-a-nick Environmental Sciences Box 10106, Whitehorse, Yukon Canada Y1A 7A1 Ph: 867 668 4682 Email: trout@northwestel.net

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS: Whitehorse Rapids Fish Hatchery and Fishway.

PROJECT LOCATION: Michie Creek, tributary to M'clintock River; Whitehorse Rapids Fishway and Fish Hatchery. All sites are located near or in Whitehorse, Yukon, Canada and within the Yukon River Upper Lakes Watershed

PROJECT OBJECTIVES: Project objectives are a continuation of the KDFN research and stewardship program for Michie Creek. Michie Creek is an important opportunity as it is the sole Chinook spawning stream in the Yukon River drainage that has a significant supplement of artificially propagated fry. Results of the program will inform releases from the Whitehorse Rapids Fish Hatchery and possible future hatchery operations. Project objectives include:

- Monitoring of Chinook escapement to Michie Creek, by collecting age, sex, and length (ASL) data, hatchery/wild origin, and DNA samples if requested (2010 objective #3);
- Maintaining access by adult chinook to spawning grounds (BPF Restoration-Habitat-Implementation);
- Environmental monitoring of the bio-physical environment of Michie Creek(BPF Conservation-Habitat-Research and Enhancement; JTC 2.1.1 and 4.1.1);
- Monitoring juvenile salmon, and particularly the affects of juvenile Chinook out plants from the Whitehorse Rapids Hatchery (2010 objective #7; BPF Conservation-Habitat-Research and Enhancement);
- Increasing KDFN capacity and interest in the management, maintenance and protection of salmon stocks and habitat through training of KDFN staff and communication of results to FN citizens (2010 objective #5; BPF Stewardship; JTC 3.2.1).

PROJECT SUMMARY: The project will focus on upper Michie Creek, the primary spawning location for salmon migrating past Whitehorse. A series of site visitations will be conducted, with specific sampling methods depending on timing. ATVs or aircraft will be used to access the site. All relevant Yukon River Panel Protocols will be followed. The first visitation will be

prior to the release of hatchery fish. Later visitations will monitor the presence and implied densities of hatchery and wild juvenile salmon; the condition of the upstream migration habitat, and the breaching of obstructions as required; the condition of escapement, including the collection of ASL and other data that the JTC may request; and a final late season monitoring of juvenile salmon presence and implied densities. Observations will be made of the location and densities of salmon redds. Collection and analysis of benthos will follow previous year's procedures. Long term collections of temperature and flow data will be continued. Pre-release sizes of juveniles from the WRFH will be determined, and the thermal regimes of the hatchery and the fishway during operation will be measured. The KDFN F&W Manager will administer the project. Nick de Graff of CAN-NIC-A-NICK Environmental Sciences will be the primary investigator and will train and mentor KDFN F&W and other staff in field techniques and salmon management.

LIFE OF PROJECT*:* Multi-year project and ongoing.

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	1700
Operation & Maintenance	11750
Admin/Indirect/Overhead	4000
Personnel	15300
Total Request	32750

Total In-kind/other

ON-GOING PROJECTS:

The following is a rough draft of the 2009 report entitled "Géis Tóo'e': King Salmon River 2008 Michie Creek Chinook Salmon Field Investigations".

Monitoring in 2009 included assessment of the migratory habitat to ensure that adult salmon were not obstructed. Stream flows and temperatures were monitored at the primary Chinook salmon spawning area in upper Michie Creek. Flows in Michie Creek were below normal throughout the summer caused by the hot and dry summer conditions experienced in the southern Yukon during 2009. Flows recovered by the fall and were about average throughout the chinook spawning period during August. Few juvenile chinook salmon were captured in Michie Creek whose origin was the Whitehorse Rapids Fish Hatchery (WRFH). There is a strong indication that hatchery releases into Michie Creek immediately commence downstream migration upon release.

YUKON RIVER RESTORATION AND ENHANCMENT FUND
COMMUNITY BASED STREAM STEWARDSHIP PROJECTS
2010 CONCEPTUAL PROPOSAL

Number: CRE-54-10

PROJECT TITLE: Ta'an Kwäch'än Council Community Stewardship

PROJECT PROPONENT: Ta'an Kwäch'än Council

CONTACT:

- Rosa Brown, Fish and Wildlife Program Coordinator, Ta'an Kwäch'än Council
  Suite 100-204 Black Street, Whitehorse, YT, Y1A 2M9
  Phone: (867) 668-3444 Ext. 231
  rbrown@taan.ca

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:

- Fisheries and Oceans Canada,
  Contact Al von Finster, phone: (867) 393-6721, Al.vonfinster@dfo-mpo.gc.ca
- Northern Research Institute,
  Contact Clint Sawicki, phone: (867) 668-8772
  csawicki@yukoncollege.yk.ca
- Yukon Electrical Company (Whitehorse Rapids Hatchery),
  Contact David Petkovich, phone: (867) 668-6463
  david@accessconsulting.ca
- Government of Yukon, Department of Environment Y2C2 Program
  Contact Youth Programs Coordinator, phone: (867) 667-3041
  y2c2@gov.yk.ca
- EDI Environmental Dynamics Inc.,
  Contact Pat Tobler, Phone: (867) 393-4882, ptobler@edynamics.com

PROJECT LOCATION:

Project activities will be based out of Whitehorse, with works conducted on salmon bearing waters within the TKC Traditional Territory.

PROJECT SUMMARY:

Two Stewards will be hired by TKC for a total of 26 person weeks of employment.

- Staff of the TKC Department of Lands Resources and Heritage Department (Rosa Brown, Fish and Wildlife Program Coordinator) will oversee project operations and report preparation. This will include supervision of the Stewards and coordination of training and mentoring opportunities.
- Depending on individual requirements, approximately 6 person weeks of the Stewards time will be spent receiving appropriate training and mentoring relevant to

the types of work pursued through the Stewardship program. Such training and mentoring will include, but not be limited to, first aid, swift water rescue, ATV safety, bear safety, sampling methodology and techniques, field procedures, and data management. The Stewards will benefit from mentoring opportunities by working directly with staff of the TKC Lands, Resources and Heritage Department, DFO and contract biologists in the field on relevant salmon related projects in the TKC Traditional Territory.

- Approximately 20 person weeks will be spent on the restoration of access to salmon habitats, the collection of biological samples and data, and increasing the knowledge of salmon distribution in the TKC Traditional Territory.
- A notable portion of this project focuses on the Chinook stock restoration activities and works at Fox Creek (egg takes, fry releases and monitoring of fish and habitat and foot access). The Fox Creek restoration project essentially relies on this program for implementation (i.e. no other funding is being sought for it).

LIFE OF PROJECT: This project is multi-year/ongoing.

ESTIMATED BUDGET:

Project Budget

	Amount $
Training	2500
Operation & Maintenance	6400
Admin/Indirect/Overhead	4500
Personnel	32600
Total Request	46000
Total In-kind/other	2500

ABSTRACT FROM PREVIOUS YEAR PROJECT

The Stewardship program undertaken by the TKC commenced in 2007 and continued through 2009. In 2009, two Stewards (both young TKC citizens) worked closely with contracted biologists and Agency staff to conduct a variety of monitoring works related to Chinook salmon stocks and habitat in the TKC Traditional Territory. This included the first release of juvenile Chinook salmon into Fox Creek as part of a multi-year restoration plan, monitoring and assessment of several small juvenile Chinook salmon rearing streams near Whitehorse and monitoring works related to a past habitat restoration project (CRE-53-06). The Stewards also participated in a variety of training and mentoring opportunities relevant to their activities, this included field training/mentoring exercises with Yukon Government, Department of Fisheries and Oceans and contract biologists.

YUKON RIVER SALMON RESTORATION & ENHANCEMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-63-10

PROJECT TITLE: Whitehorse Rapids Hatchery Coded Wire Tagging and Recovery
PROJECT PROPONENT: Yukon Fish and Game Association
CONTACT NAME: Gordon Zealand
EMAIL ADDRESS: Gordon Zealand [yfgaexdir@klondiker.com]
PHONE/FAX: (867)667-4263 Fax: (867)667-4273
MAILING ADDRESS: 1 4078- 4th Avenue, Whitehorse, Yukon Y1A 4K8
PROJECT PARTNERS/ADDITIONAL PARTICIPANTS
Yukon Energy Corporation, Whitehorse Rapids Hatchery, DFO – Stock Assessment and Habitat
PROJECT LOCATION:
Whitehorse Rapids Hatchery, Whitehorse; Yukon River and tributaries upstream of Whitehorse Rapids dam (Mitchie Creek, McClintock Creek, possibly others), Upper Lakes/South Mainstem sub-basin.
PROJECT OBJECTIVES:

Project Objectives	Panel Budgets and JTC Priorities 2010
• To apply coded wire tags to all Chinook salmon fry reared at the Whitehorse Rapids Hatchery in YR 2009-2010.	Stock Restoration- Panel Priority # 6 JTC Priority 2.3- Identify and implement restoration opportunities
• To contract out clipping and tagging (CWT) of the Chinook salmon fry (out of Territory supervisor with significant expertise in tagging operations)	Habitat Restoration and Enhancement- Panel Priority # 5 JTC Priority 2.3 - Identify and implement restoration opportunities
• To assist in the sampling of adult Chinook salmon at the Fishway	Quality of stock escapement- Panel Priority # 3 JTC Priority 3.3 – Encourage Stewardship of the resources 3.4 – promote public values of the salmon resources
• To continue promotion of education and stewardship with the community of Whitehorse and with the tourist around the world who visit the Whitehorse Rapids Fishway each summer. (Note: the Fishway employs Approximately 4 high school students and 2 post secondary each summer)	Community Education and Stewardship Panel Priority - # 4 JTC Priorities: 3.1 Develop mutual understanding between agencies and the public 3,2 Build and maintain community capacity 3.3 Encourage Stewardship of the resources 3.4 Promote public values of the salmon resources

Project Summary:
All Chinook salmon released in the spring of YR 2010 will be marked with the removal of the adipose fin and tagged with coded wire tags. The fry will be released into the Upper Yukon River drainage above the Whitehorse Rapids Dam in locations determined by Fisheries and Oceans Canada. The fry release will involve the helicopter transport of the fry destined for Michie Creek and M'Clintock River and boat or helicopter transport of fry released in the mainstem Yukon River. The proposal also involves some support of the Fishway program which assists with broodstock collection, and the sampling of returning adult fish including the proportion of fish which are hatchery-origin.

Life of Project:
Ongoing

Project Budget

	Amount $
Capital	
Operation & Maintenance	17,000.00
Admin/Indirect/Overhead	7,200.00
Personnel	23,000.00
Total Request	47200

Total In-kind/other

Abstract-2009

Chinook salmon fry reared at the Whitehorse Rapids Hatchery were adipose fin clipped and injected with "Agency-only" coded wire tag in the early summer of 2009. This was the third year the facility used an "Agency-only" coded wire tag. Tricaine methane sulphonate (MS222) was used to anaesthetize the fry prior to clipping and tagging. The 2009 release of a total of 169,646 fry in four areas upstream of the Whitehorse Rapids dam included:

- 22,523 into Wolf Creek on May 31, June 3, and June 11;
- 42,906 into the main stem Yukon River on June 5;
- 77,826 into Michie Creek on June 5; and
- 26,391 into the Mclintock River on June 5.

Three fry released with "Agency-only" coded wire tags in 2007 were recovered in mid-September in the Bering Strait during a surface trawl operation aboard a National Oceanic and Atmospheric Administration research vessel. These recoveries represent the most northerly recoveries of coded wire tagged Chinook salmon released in Whitehorse, Yukon. These tagged fish along with the Chinook from McIntyre Creek are the only coded wire fish in the whole of the Yukon drainage. It only makes sense that there should be some method of tracking Yukon Chinook in the ocean.

The Whitehorse Rapids Fishway program, another program undertaken by the Yukon Fish and Game Association, has a number of components that relate to the Whitehorse Rapids Hatchery coded wire tagging program. In 2009, 388 of the 828 returning adult Chinook salmon counted at the fishway were of hatchery origin. The hatchery component included 28 females and 360 males and represented 47% of the Whitehorse Rapids Fishway count. The 2009 season at the Whitehorse Rapids Fishway was a very successful season which was due in part to it being its 50th Anniversary. Our visitor's totals for June, July and August were actually more comparable with the 2007 season; which was a very busy year for tourists. We were able to surpass last year's visitor's totals in all the months except July. In the month of August alone we surpassed last year's numbers by 1195 people! All told we were visited by people from over 60 countries around the world, 13 countries in Africa alone. We had very good weather this summer and a much improved salmon run which helped to contribute to our great 2009 season. Over the course of the summer, from mid May to early September, 21,983 visitors from 75 countries visited the Whitehorse Rapids Fishway. In 2008 on line under water cameras were installed allowing people to view the Chinook at the entrance to the fish ladder. Visitors were provided opportunities to view the returning salmon and learn about the Upper Yukon Chinook salmon resource and the coded wire tag program. Local students employed at the Whitehorse Rapids Fishway provided information and answered the visitors' questions. The Whitehorse Rapids Fishway staff also assisted hatchery staff in the collection of biological data and the recovery of coded wire tags from the hatchery fish which were used for broodstock.

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-65-10

PROJECT TITLE: McIntyre Creek Salmon Incubation Project - MCSIP

PROJECT PROPONENT: Northern Research Institute, Yukon College

CONTACT: Clint Sawicki Northern Research Institute, Box 2799, Whitehorse, YT Y1A 5K4 Ph.867-668-8772 E: csawicki@yukoncollege.yk.ca

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:
Ta'an Kwach'an Council (TKC) Fox Creek Project – Rosa Brown**,** Ph: (867) 668-3613 ext.231, E: rbrown@taan.ca
Yukon Schools: Ken Taylor, Ph: (867) 667-8496 E: Ken.Taylor@gov.yk.ca
DFO Trix Tanner Ph: (867) 393-6703 E : tannert@dfo-mpo.gc.ca
Access Consulting Group, Yukon Energy [Whitehorse Rapids Hatchery] - David Petkovitch Ph. (867) 668-6463 ext.240 E : david@accessconsulting.ca

PROJECT LOCATION: Whitehorse - Unnamed groundwater tributary to McIntyre Creek alongside Mountainview Drive in road right-of-way.

PROJECT OBJECTIVES: The Macintyre Creek Salmon Incubation Facility is fed by ground water and is owned and operated by Yukon College. It contributes to a wide range of educational and salmon stock conservation and restoration projects and activities. This application is to fund the continuation of the project, with the following objectives;

- To continue support to educational services for salmon programs in Yukon schools, Yukon College, StreamKeepers and the public (2010 priorities #5; BPF – Stewardship and Communications; JTC – 3.2 & and 3.4.1);
- To continue to support TKC in the Fox Creek salmon restoration project through provision of salmon fry (2010 priorities - #7; BPF – Restoration-stocks-implementation);
- To continue to develop, test and evaluate various techniques and methods for salmon incubation and release strategies, including the monitoring of returning adults (2010 priorities #3 & #7; BPF – Conservation-stocks- escapement & Restoration-stocks-research).

PROJECT SUMMARY: The MCIP will incubate, rear, and tag Yukon River Chinook from the Whitehorse Rapids Fishway and Tatchun Creek Chinook. Eggs will be provided to Yukon Schools in support of "Salmon in the Classroom" and hands on school activities will take place at the facility. Tests of thermal marking of otoliths and Heath tray investigations will continue. Tatchun origin fry will be released to that creek, and Fishway origin fry will be released to Fox Creek in support of the TKC Chinook stock restoration plan. Surveys will be conducted on

Takhini and Tatchun to evaluate adult salmon returns from past years' releases. Yukon College students will be trained in salmon egg-takes, incubation, tagging, rearing, enumeration and hatchery and field sampling of juvenile and adult Chinook salmon. The facility will serve as an educational and outreach destination for StreamKeepers, visiting and local research institutes, management agencies and the public

LIFE OF PROJECT: Project Ongoing

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	
Operation & Maintenance	25000
Admin/Indirect/Overhead	6000
Personnel	15000
Total Request	46000
Total In-kind/other	28,000

ON-GOING PROJECTS:

March 2009 Report Abstract: The McIntyre Creek Salmon Incubation Project (MCSIP) tagged and released 41,777 Yukon River Chinook salmon in early summer, 2008 (from 2007 broodstock): 16,748 fry were released into Takhini River and 25,029 fry into Tatchun Creek. Approximately 76,000 chinook eggs were planted in the MCSIP facility heath trays in August 2008, with 6000 eggs from Tatchun Creek, and 70,000 eggs from the Whitehorse Rapids Fishway (WRF) for Ta'an Kwäch'än Council (TKC) and the Fox Creek Salmon Restoration Project. The Whitehorse Rapids Fishway eggs were retrieved from 20 salmon including 13 ladder mortalities and 7 hatchery held fish. An estimated 4000 Tatchun eggs and over 44,000 WRF eggs survived to March 2009. Many batches of eggs from the ladder mortalities showed a poor survival rate. Thermal marking trials were carried out as part of a continued effort to ensure consistent and observable results as an alternative to coded wire tags. Yukon College students observed, worked and volunteered in most of the MCSIP project activities. Approximately 530 Yukon students, teachers and volunteers participated in aquatic habitat studies or incubated salmon eggs from the site in 2008-2009. MCSIP facility was used to carry out a Kwanlin Dun First Nation study on temperature effects on Chinook salmon sex ratios.

Since March 2009: Yukon College students reared fry at the McIntyre site until Coded wire tagging at the end of June 2009. 2749 marked fry were released into Tatchun Creek on June 30th. 53554 marked fry were released into Fox Creek between July 3rd and July 10th, 2009. TKC invited several members, including elders, and local media to participate in one release. An estimated 22200 chinook eggs were taken from Tatchun Creek Chinook and planted at the McIntyre site between August 20 and August 23, 2009. Creek changes due to flooding made location and capture difficult. Whitehorse Rapids Hatchery could not provide eggs for the Fox Creek project because they required all the available 30% of the run to meet their hatchery target due to the low numbers of female Chinook through the fishway. Once they have completed their eyed egg inventory, they expect to have a yet-to- be determined number available to the project, as the survival to eyed stage appears to be excellent. Renewable Resources students from Yukon College are monitoring and maintaining the site.

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-67-10

PROJECT TITLE: Yukon Schools Fry Releases & Habitat Studies

PROJECT PROPONENT: Streamkeepers North Society

CONTACT: Doug Davidge, Treasurer
Phone Number: (867) 668-2233 **Fax Number:** c/o (867) 667-7962
Mailing Address: 76 Kluane Crescent, Whitehorse, YT Y1A 3G9
Email: ddavidge@northwestel.net

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:
Yukon Schools: Ken Taylor (principal, Jack Hulland School), Phone: (867) 667-8496 Email: Ken.Taylor@gov.yk.ca
Fisheries and Oceans Canada: Trix Tanner (Education Coordinator) Phone: (867) 393-6703 Email: tannert@dfo-mpo.gc.ca
Northern Research Institute: Clint Sawicki Northern Research Institute, Box 2799, Whitehorse, YT Y1A 5K4 Ph.867-668-8772 Email. csawicki@yukoncollege.yk.ca (operates McIntyre Incubation site where many eggs are incubated prior to delivery to the schools)

PROJECT LOCATION: This project takes place at the McIntyre Creek Salmon Incubation Facility, McIntyre Creek, Kluane River, Tatchun Creek, Fox Creek and other salmon habitat field trip destination sites as selected by Yukon teachers in schools throughout the Yukon.

PROJECT OBJECTIVES:
- To support the "Stream to Sea" program and enable students involved with the program to participate in an aquatic habitat studies field trip and thus gain a better understanding of salmon habitat.
- To enable classes who incubate salmon in their schools to release their fry back into their natal streams, and thus make the connection between their classroom studies and the natural habitat of salmon.
- To give students, teachers and parent volunteers an appreciation of aquatic habitat of the salmon through participation in these activities and thus to foster stewardship of the salmon and their habitat.

Supporting Yukon students participation in aquatic study field trips to salmon habitat helps to meet the highest ranking objective in the "Stewardship" envelope of "involving and educating users and non-users to increase their desire to maintain and protect salmon stocks and habitat". The field trips, particularly in conjunction with the raising of salmon in the classroom incubators , also fits into the category of priority projects listed in the 2008 specific R&E priorities include, under "Community Education and

Stewardship", "youth-oriented education and hands-on projects (youth up to 18 years)". Goal 3.4 of the JTC Plan is to "Promote public values of the salmon resource". A subsidiary goal is to "educate the public on the values of salmon and salmon habitat" through strategies that include the promotion of school programs for all grade levels. The objective of bringing the students out to the salmon habitat on these field trips is to enhance the in-school Stream to Sea program, which includes educating the students on the values of salmon and salmon habitat.

PROJECT SUMMARY:
Funds will be made available given to classes at Yukon schools involved with the "Stream to Sea" studies to help enable them to participate in field trips. Students will participate in habitat studies at various Yukon creeks, guided by teachers and the DFO Education Coordinator. Those classes that have incubated fry will be given the opportunity to release their salmon back to their natal streams in the spring. Some classes will have the opportunity to observe salmon spawning when they collect their own chum eggs for classroom incubation in October. These experiences will help to extend the sense of stewardship that the students develop for the salmon fry they rear in the classroom to include the natural habitat of the salmon, and aquatic habitats in general. The field trips will also help students to understand the scientific concepts that they have been taught in the classroom.

LIFE OF PROJECT: This project is ongoing.

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	0
Operation & Maintenance	5000
Admin/Indirect/Overhead	0
Personnel	0
Total Request	5000

Total In-kind/other

ON-GOING PROJECTS: Abstract March 2009:
Yukon students from eighteen schools in nine Yukon communities (Dawson, Old Crow, Ross River, Pelly Crossing, Destruction Bay, Haines Junction, Whitehorse, Teslin, and Watson Lake) participated in fry releases and/or aquatic studies field trips in spring 2008. Most schools released chinook fry back to their river system of origin. A few returned fry to the McIntyre incubation facility and did their habitat study activities at the McIntyre site. Others toured the McIntyre site en route to release their salmon. Four schools released chum fry back to the Kluane River, and one school to the Porcupine River. In October 2008, two schools participated in a chum broodstock collection and egg take field trip, hosted by the Kluane First Nation. These field trips enabled an estimated 355 students and 55 teachers and volunteers to gain a better understanding and appreciation of Yukon River salmon and their habitat.

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-78-10

PROJECT TITLE: Collection and Analysis of Yukon River DNA Baseline Samples in the Alaska and Canada

PROJECT PROPONENT: Fisheries and Oceans Canada and the Alaska Department of Fish and Game

CONTACTS:

Patrick Milligan
Fisheries and Oceans Canada
Whitehorse Yukon
Y1A 3V1
Phone (867) 393-6720
E-mail Patrick.Milliganp@pac.dfo-mpo.gc.ca

Katie Howard
Yukon Area Research Biologist
Alaska Department of Fish and Game
Commercial Fisheries Division
333 Raspberry Road
Anchorage, AK 99518
Phone 907 267 2141
E-mail kathrine.howard@alaska.gov

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:
The baseline samples collected will be shared between the project proponents and made available to the USF&WS Conservation Genetics laboratory. Additional partners/participants will be identified as priority collection areas are established by the Joint Technical Committee. It is anticipated that there will be both community interest and community involvement in sample collection.

PROJECT LOCATION: Yukon River tributaries located within the United States and Canada.

PROJECT OBJECTIVES: This project has two objectives:
1) the collection of genetic (DNA) samples, primarily from Chinook and fall chum salmon, from spawning populations under-represented in current genetic baselines; and,
2) incorporation of the samples collected into the agency GSI baselines.

It is anticipated that this will be an ongoing program which will address gaps in the existing GSI baselines. Improvements in Chinook and chum salmon baselines will improve fisheries management when Stock ID estimates are used in conjunction with abundance estimates to determine stock timing and stock status.

Meets the following criteria of the 2010 Yukon River Panel R&E Fund Priorities:
2. Stock Identification and In-Season Management
- Supplement existing genetic stock identification baseline data, by obtaining tissue samples from priority watersheds identified by the Panel's JTC.

Meets the following criteria of the Budget Priorities Framework 2007:
Conservation/Stocks/Run Assessment
- Improve in-season and post-season resolution of genetic stock identification for Chinook and chum runs (ranked 1 of 3)

- Improve information on biological composition of run (ranked 1 of 3)
- Improve in-season stock specific run size estimates at the mouth of the Yukon River (ranked 1 of 3)

Conservation/Stocks/Research
- Improve stock identification and run assessment (ranked 1 of 4)

Meets the following criteria of the US and Canada Yukon River Salmon Committee Joint Technical Committee Plan:

1.4 Improve management and research capability
- 1.4.3 (Investigate new technology, methods and models)

3.2 Build and maintain community capacity
- 3.2.1 (Utilize capacity of communities)
- 3.2.3 (Increase capacity of communities)

PROJECT SUMMARY: This project will primarily involve the collection of baseline Chinook and fall chum salmon genetic samples in Alaska and Canada and the subsequent analysis of these samples for inclusion into existing ADF&G and DFO baselines. The project proponents will allocate the funding in a manner that addresses specific baseline gaps, in both Alaska and Canada, which will be identified by the JTC Genetics Sub-committee. DNA collection is challenging logistically due to individual fish population sizes, large geographic area involved, the difficulties associated with capturing live fish, and a narrow window of opportunity. Decisions about which populations to address will depend upon both the prioritized list of required baseline samples and logistical constraints. This proposal provides the flexibility to approach the most appropriate priorities considering unpredictable conditions such as water levels and run abundance. Methodology will primarily involve live-capture and sampling of fish in terminal spawning areas. Project personnel will involve agency staff, professional consultants and people from the communities. The proponents will periodically, perhaps annually, use the funding to process the samples collected thus augmenting the baselines.

LIFE OF PROJECT: *O**ngoing.***

ESTIMATED BUDGET:

Project Budget	
	Amount $
Capital	
Operation & Maintenance	60,000
Admin/Indirect/Overhead	
Personnel	
Total Request	60000
Total In-kind/other	15,000

ON-GOING PROJECTS: *An abstract from the most recent year is in preparation.*

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-79-10

PROJECT TITLE: Yukon River Salmon Stock Identification

PROJECT PROPONENT: Terry D. Beacham

CONTACT: Terry D. Beacham, Pacific Biological Station, 3190 Hammond Bay Road, Nanaimo, BC, V9T 6N7, Telephone: 250 756 7140, email: Terry.Beacham@dfo-mpo.gc.ca/

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS: ADF&G staff**,** P. Milligan and S. Johnston, DFO Whitehorse.

PROJECT LOCATION: Chum and Chinook salmon samples obtained from the mainstem Yukon River sonar site near Eagle, Alaska.

PROJECT OBJECTIVES: The Yukon River Salmon Agreement obliges the Parties to manage Canadian-origin chum and Chinook salmon based on abundance. Stock ID estimates in conjunction with abundance estimates are required to better manage for the upper Yukon and Porcupine chum spawning escapement and upper Yukon harvest sharing objectives specified in the Agreement. Microsatellite variation was used in 2005-2009 to estimate the stock composition for Yukon River chum and Chinook salmon at test fisheries in the Yukon River drainage. This proposal is to continue this work through the application of microsatellite DNA variation to:

- to provide stock ID estimates of chum and Chinook salmon sampled at the Eagle sonar site

This project specifically relates to:
Panel's Budget Priority Framework 2006: Conservation-Stocks-Run assessment- "Improve information on stock ID and biological composition of run" Rank 1.

PROJECT SUMMARY: **The project and will involve the following steps:**

- Survey of microsatellite variation at 12-14 microsatellite loci for all mixed-stock samples of chum and Chinook salmon. It is anticipated that approximately 750 samples of chum salmon and 750 samples of Chinook salmon will be available from the Eagle sonar site for subsequent DNA analysis.
- Provide estimates of stock composition to all interested parties;
- Procedures used in estimation of stock composition were outlined in:

Beacham, T. D., J. R. Candy, K. L. Jonsen, J. Supernault, M. Wetklo, L. Deng, K. M. Miller, and R. E. Withler. 2006. Estimation of stock composition and individual identification of Chinook salmon across the Pacific Rim using microsatellite variation. Transactions of the American Fisheries Society 135: 861-888.

Beacham, T. D., M. Wetklo, C. Wallace, J. B. Olsen, B. G. Flannery, J. K. Wenburg, W. D. Templin, A. Antonovich, and L.. W. Seeb. 2008. The application of microsatellites for stock identification of Yukon River Chinook salmon. North American Journal of Fisheries Management 28: 283-295.

Beacham, T. D., J. R. Candy, C. Wallace, S. Urawa, S. Sato, N. V. Varnavskaya, K. D. Le, and M. Wetklo. In press. Microsatellite stock identification of chum salmon on a Pacific Rim basis. North American Journal of Fisheries Management.

LIFE OF PROJECT: Proposal is for a single year, but could be modified for a multi-year proposal if desirable. The project in various forms has been conducted for each the previous 9 years.

ESTIMATED BUDGET:

Project Budget	Amount
Capital	0
Operation & Maintenance	2,000
Admin/Indirect/Overhead	0
Personnel	28,000
Total request	**30,000**

ON-GOING PROJECTS:

Abstract from R&E report for 2008 activities

Stock identification of chum and Chinook salmon migrating past the DFO fish wheel program at Bio Island, as well as for Chinook salmon migrating past the Eagle sonar site near the Yukon-Alaska border, was conducted in 2008 through analysis of microsatellite variation. Variation at 14 microsatellite loci was surveyed for 735 chum salmon from the fish wheels and 758 Chinook salmon collected from the fish wheels and sonar site. The seasonal sample for chum salmon species was structured so that migrating salmon were sampled in proportion to run abundance on a weekly basis. For Chinook salmon, all fish sampled at the Eagle sonar site were analyzed, and fish sampled from three weekly intervals at the fish wheels were analyzed.

The analysis of chum salmon samples indicated that spawning populations from the White River drainage were estimated to comprise 50% of the fish migrating past the Bio Island fish wheels, while 48% were estimated to have been from mainstem Yukon River chum salmon spawning populations.

The analysis of Chinook salmon migrating past the Eagle sonar site indicated that the major regional stocks contributing to the run were the mainstem spawning stock (32%), Pelly River (21%), Carmacks area tributaries (Big Salmon River, Little Salmon River, Tatchun Creek) (15%), Teslin River (13%), Stewart River (8%), lower Yukon mainstem tributaries (Chandindu River, Klondike River) (9%), and upper Yukon tributaries (1%). Different stock compositions were observed for Chinook salmon sampled at the fish wheels, and the major regional stocks were estimated as Pelly River (24%), Carmacks area tributaries (20%), Teslin River (15%), lower Yukon mainstem tributaries (15%), Stewart (13%), and the mainstem spawning stock (12%).

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-112N-10

PROJECT TITLE: Selective Fisheries – Implementation

PROJECT PROPONENT: Yukon River Commercial Salmon License #471

CONTACT: Jake Duncan, P.O. Box 844 Dawson City, Yukon Y0B-1G0 (867) 993-6974
jake@northwestel.net

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:

Northern Climate ExChange, Dawson Adaptation Coordinator
Sebastian Jones (867) 993 4401 sjones@yukoncollege.yk.ca
**A financial commitment of $15,000 toward project is confirmed.*

Department of Fisheries and Oceans, Stock Assessment,
Pat Milligan (867) 393-6720 MilliganP@PAC.DFO-MPO.GC.CA

PROJECT LOCATION: Dawson City, Yukon River

PROJECT OBJECTIVES:

1. Contribute to Viable Fisheries, by adding value to the quality of harvested fish (fresh, live-bled fish on ice/brine, no bruising or net marks), *related to YRP Needs: Viable Fisheries - Maximize the value of the Canadian harvest to make fisheries viable (Rank1)*.

2. Improve the Quality of Escapement, by being able to live-release female and large fish and assist with the development of selective fishing policy/rules/regulation, *related to YRP Needs: Conservation – Stocks – Harvest, Assess fishing techniques re: their impact on harvest and stock genetics (e.g., selectivity and target species, Rank1)* and *Conservation – Stocks – Research, Develop and Test Non-Invasive, Non-Lethal Methods of Sampling and Handling Fish (Rank3)*.

3. Develop Stewardship by Implementing Selective Fisheries Practises, while becoming a model for others through demonstration, *related to YRP Needs: Stewardship - Involve and educate users in communities to increase their desire to maintain and protect salmon stocks (Rank1).*

PROJECT SUMMARY:

Traditional gill nets have evolved over many centuries as a highly effective tool for catching fish. Gill nets are lethal to fish and they target species by targeting their size. Fish that are smaller than the targeted mesh-size tend to avoid capture by swimming through the larger meshed nets, and larger fish tend to avoid capture by 'bouncing off' the smaller sized mesh. Chinook salmon returning to the Yukon River vary greatly in age and size. While chinook salmon tend to return on average at the age of 6, runs are

made up of 4, 5, 6, 7 and 8 year-old fish and sizes vary accordingly. Just as designed, if a fisher uses a large meshed gill net, they would tend to capture larger, older and heavier chinook; conversely, should they choose a smaller meshed gill net, they would tend to capture smaller, younger and lighter fish.

Given the above, if harvesting was restricted to an overall number of fish (ie. not at any one size), which gill net would you choose? Most would select the larger sized gill net so their overall catch weighted more. It is for this reason we tend to select the larger fish for harvest. It is well known by fisheries managers worldwide that declining size in a harvested population of fish is the first sign of catastrophic stock failure.

Typically, Selective Fisheries techniques are used to avoid non-target or endangered *species*. In the upper Yukon River, the mixing of migrating salmon *species* during harvesting periods is not typical; however, there are sizes/ages of fish that are endangered within the chinook species, and issues with the size-selectivity of gill nets as observed through the decreasing overall size of chinook salmon (a complete absence of 8-year old fish, a serious reduction in the number 7-year old fish returning, etc.).

In the spring of 2010, three light-weight, easily deployable, live-capture fishwheels will be designed and constructed. These live-capture fishwheels are intended to completely replace traditional (lethal) gill nets and avoid non-target fish (large & female chinook) They will be tested during the 2010 chinook season. Live-handling equipment such as pens, cradles, and shoots will be developed and tested alongside the live-capture fishwheels.

Should enough fish return in 2010 to allow a commercial fishery, the live-capture fishwheels will be utilized and tested in the commercial fishery and all large and female chinook will be live-released. Should there not be enough fish returning to allow for a commercial fishery, the live-capture fishwheels will be utilized and tested in a Test Fishery. The proponent will work with DFO to develop retention slot limits (size), and live-handling & release protocols for selective fisheries.

Proponent will work with DFO and the YSC to develop draft Selective Fishing guidelines, policy and/or regulations. The proponent will work with DFO, YSC and other commercial fishers to advocate for the implementation of selective fishing practises, this includes presentations, workshops and/or information sessions.

LIFE OF PROJECT: *Single year investment (YRP) – multiyear/ongoing affect.*

ESTIMATED BUDGET:

	Amount $
Capital	
Operation & Maintenance	21,000
Admin/Indirect/Overhead	
Personnel	
Total Request	21,000
Total In-kind/other	15,000

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-113-10

PROJECT TITLE: Miner River Chinook Index

PROJECT PROPONENT: Vuntut Gwitchin Government

CONTACT:

- Dick Mahoney, Fish and Wildlife Coordinator, Vuntut Gwitchin Government
  Box 94, Old Crow, YT, Y0B 1N0
  Phone: (867) 966-3261
  dmahoney@vgfn.net

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:

- Fisheries and Oceans Canada, Contact Patrick Milligan, phone: (867) 393-6720,
- milliganp@pac.dfo-mpo.gc.ca
- EDI Environmental Dynamics Inc., Contact Ben Snow, Phone: (867) 393-4882, bsnow@edynamics.com

PROJECT LOCATION:
Old Crow, Yukon Territory, Canada. Porcupine River watershed.

PROJECT OBJECTIVES:
This table lists project objectives while relating them to applicable Panel and JTC documents.

Project Objective	R&E Budget Priorities Framework	JTC Plan	2010 R&E Budget Priorities
Establish an index of escapement for Porcupine River chinook salmon in Canada	Conservation ▪ Stocks ▪ Escapement Studies	1.1 Monitor or project escapements by Conservation Management Unit	1. Stock Escapement Monitoring of Canadian Tributaries
Continue development of local capacity to conduct fieldwork	Stewardship ▪ Technical capacity building in communities	3.2 Build and Maintain Community Capacity	4. Community Education and Stewardship

PROJECT SUMMARY:

Chinook salmon patterns of habitat use have been the object of considerable study by the Vuntut Gwitchin First Nation over the past eight years, however, no indicators of run size or escapement exist. Run sizes have generally been thought to be small and dynamic, and the chinook fishery undertaken by Vuntut Gwitchin members generally results in a total catch of between 100 and 500 fish per year.

A considerable amount of past R&E work (CRE-15N-01, CRE-15-02, CRE-15-03, CRE-17N-03, CRE-15-04, and CRE-17-04) conducted by the VGG has indicated that the Miner River hosts the largest spawning population of chinook salmon within the Canadian portion of the Porcupine River watershed.

In 2009, an aerial survey of the Miner River was conducted and 319 chinook salmon were counted (CRE-113N-09). It is proposed that an aerial index of chinook escapement on the Miner River be conducted again in 2010. This survey will provide an in-season indication of chinook salmon run strength in the upper Porcupine River drainage and will provide managers with an important indicator of run strength and insight into population dynamics. Data collected will be compared with results from past years in order to help develop and refine the index.

A qualified biologist will be contracted to oversee project operations and report preparation.

This project will involve the following activities:

- Project planning will include estimation of peak run timing based upon indications from Yukon River stocks and the Old Crow fishery.
- Two crew members will conduct one helicopter survey of the relevant portion of the Miner River during estimated peak run timing, generally at the end of July and/or early August.
- Standard aerial chinook escapement index methodology will be utilized.

LIFE OF PROJECT:

This is the second year of an ongoing project.

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	0
Operation & Maintenance	10,825
Admin/Indirect/Overhead	2,395
Personnel	5,140
Total Request	18,360
Total In-kind/other	200

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-114-10

PROJECT TITLE: Porcupine River Sonar Pilot Program
PROJECT PROPONENT: Vuntut Gwitchin Government
CONTACT:

- Dick Mahoney, Fish and Wildlife Coordinator, Vuntut Gwitchin Government
  Box 94, Old Crow, YT, Y0B 1N0
  Phone: (867) 966-3261
  dmahoney@vgfn.net

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:

- Fisheries and Oceans Canada, Contact Patrick Milligan, phone: (867) 393-6720,
- milliganp@pac.dfo-mpo.gc.ca
- EDI Environmental Dynamics Inc., Contact Ben Snow, Phone: (867) 393-4882, bsnow@edynamics.com

PROJECT LOCATION:
Old Crow, Yukon Territory, Canada. Porcupine River watershed.

PROJECT OBJECTIVES:
This table lists project objectives while relating them to applicable Panel and JTC documents.

Project Objective	R&E Budget Priorities Framework	JTC Plan	2010 R&E Budget Priorities
Assess the feasibility of operating a sonar unit on the Porcupine River for the purposes of providing in-season estimates for Chinook, chum and possibly coho salmon	Conservation ▪ Stocks ▪ Run Assessment ▪ Escapement Studies	1.1 Monitor or project escapements by Conservation Management Unit	1. Stock Escapement Monitoring of Canadian Tributaries
Continue development of local capacity to conduct fieldwork	Stewardship ▪ Technical capacity building in communities	3.2 Build and Maintain Community Capacity	4. Community Education and Stewardship

PROJECT SUMMARY:

The VGG has carried out numerous salmon research projects including telemetry work on Chinook salmon and coho salmon, as well as numerous studies investigating habitat use of juveniles. In addition, a chum salmon mark recapture/index program has been in operation since 2004. While the chum program provides in-season estimates of run strength, the estimates can be affected by a number factors including high water (as was experienced in 2009). There is also a perception in the local community that the gillnetting required for the chum index is hard on the fish. In addition, there is currently no mechanism in place to provide in-season estimates for Chinook salmon and coho salmon in the Canadian portion of the Porcupine River.

It is for these reasons that VGG is proposing to test the feasibility of operating a sonar unit near the Yukon/Alaska border (on the Porcupine River). A sonar unit would increase accuracy, eliminate the need for the chum mark recapture/index program and would also provide

extremely valuable information regarding Chinook and possibly coho salmon in the Porcupine River watershed. It is understood that the Fishing Branch River Enumeration Weir provides an annual escapement count for the Porcupine River; however, this estimate is provided well after the run has passed Old Crow and thus the sonar unit would be much more valuable for local fisheries managers.

In 2009, VGG in conjunction with the U.S. Fish and Wildlife Service, conducted a survey to identify potential sonar site on the Porcupine River (CRE-114N-09). The search area extended from the confluence of the Salmon Trout and Porcupine rivers in Alaska to the village of Old Crow, Yukon. The most suitable site was identified approximately 17 km upstream of the Yukon/Alaska border.

In the summer of 2010, VGG proposes to initiate a pilot program to test the effectiveness of the candidate site for the enumeration of chum and chinook salmon. This program would include testing the operational effectiveness of a sonar unit on both banks of the river for approximately one week during the peak of the chinook salmon run and one week during the peak of the chum salmon run. Additionally, the suitability of the site for test netting would be investigated.

The project team for this project will be comprised of two VGG technicians and a qualified fisheries biologist. An individual with experience operating and setting up a sonar unit will also assist with technical components of the field work.

The proposed project would involve testing the suitability of sonar operation and testing netting of the candidate site identified in 2009 and would involve the following activities:

- A crew of three will set up and operate a sonar unit at the candidate site on the Porcupine River.
- The crew will enumerate passing salmon during a one week period during the peaks of the chum and chinook salmon runs (2 weeks total).
- The crew will conduct test netting (drift or set netting) in order to assess the suitability of the site for test netting and to provide species apportionment for the collected sonar data.
- A final report will be compiled and will outline suitability of the site for providing accurate in-season counts using a sonar unit, as well the suitability of associated test netting.
- Additional data collection including measurements of river width, bank / flow characteristics, river bathymetry, shoreline slope and substrate will be conducted to refine data collection conducted during the initial site survey.

LIFE OF PROJECT:

This is the second year of a pilot project which may lead to a long term stock assessment project.

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	0
Operation & Maintenance	13,000
Admin/Indirect/Overhead	6,000
Personnel	28,000
Total Request	47,000

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-119N-10

PROJECT TITLE: Fraser Falls Chinook Salmon Passage Investigations

PROJECT PROPONENT: First Nation of the Nacho Nyak Dun (NND)

CONTACT:

- Dennis Buyck
  Box 22, Mayo, YT, Y0B 1M0
  Phone: (867) 996-2265
  landsassistant@nndfn.com

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:

- EDI Environmental Dynamics Inc., Contact Pat Tobler, Phone: (867) 393-4882, ptobler@edynamics.com

PROJECT LOCATION:

Stewart River, near Mayo, Yukon Territory, Canada. *Fraser Falls are located approximately 45 km upstream of Mayo.*

PROJECT OBJECTIVES:

This table lists project objectives while relating them to applicable Panel and JTC documents.

Project Objective	R&E Budget Priorities Framework	JTC Plan	2008 R&E Budget Priorities
Work towards improving stock, by investigations into making habitat accessible.	Conservation, Stocks, Research (project would also help with stock restoration)	2.3. Identify and implement restoration opportunities.	5. Habitat Restoration or Enhancement for chinook. 6. Stock Restoration
Work with the local community in planning of project that will benefit the chinook salmon run.	Stewardship	3.3 Encourage stewardship of the resource	4. Community Education and Stewardship

PROJECT SUMMARY:

Fraser Falls on the Stewart River has received attention regarding its impact on migrating chinook salmon. The notable high water velocities in this area likely have the ability to restrict fish passage during some flow conditions. Even when fish can get by, it is likely that the amount of energy required to pass the area has an impact on mortality and ultimately the number of fish that spawn in upstream areas. With various stresses on the Yukon River chinook run (i.e. size selective fishing) it is likely that the number of fish that can pass

obstructions has declined over the years. Modification of obstructions could potentially make the available habitat more accessible and thus, allow it to be used up to its potential.

As such, it is proposed that a study be conducted to investigate the issue. Existing information on the falls, the fishery downstream and the upstream documentation of chinook spawning and habitat will be reviewed and synthesized. In addition, strategic consultation with the local community members, agencies and fishers will be conducted to help determine the extent of the obstruction, and the desire to improve fish passage. If there appears to be sound reason and a desire to improve fish passage at this location, preliminary options will be presented, and rough cost estimates will be developed. Any project will have to be designed with sensitivities to the existing natural environment and current use of the area. The project will also outline regulatory requirements that will be required to complete such a project.

Please note that this project has been declined in the past apparently due to a legal precedent from other jurisdictions. It should be clear this is a feasibility study spearheaded by the First Nation and has a goal of determining the desire of such a project in the local community. This logical community driven approach avoids any legal implications experienced in other situations.

LIFE OF PROJECT:

This is year 1 of a 1 year project. If there is reason and desire to move forward on improving fish passage at this location, additional funding will be required in subsequent years.

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	0
Operation & Maintenance	3,000
Admin/Indirect/Overhead	2,500
Personnel	10,500
Total Request	16,000
Total In-kind/other	2,000

ON-GOING PROJECTS:

N/A

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-125N-10

PROJECT TITLE: Community Salmon Management Plan

PROJECT PROPONENT: Teslin Tlingit Council

CONTACT: Tracy Boyes, Renewable Resource Manager
Phone (876) 390-2532 ext 428
Fax (867) 390-2116
tracy.boyes@ttc-teslin.com

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:

PROJECT LOCATION: Teslin; Upper Yukon River

PROJECT OBJECTIVES:

Project Objective	2010 R&E Budget Priority	Budget Priorities Framework	JTC Plan
Identify and rank activities that impact salmon and salmon habitat Prioritize areas for research/projects Develop adaptive management plan for Chinook fishery	5. Community Education and Stewardship: Advance information, education and training, including traditional knowledge a) to enable more effective community participation in the management of Yukon River salmon stocks and salmon habitat b) to increase salmon users and non-users desire to maintain and protect salmon stocks and habitat	Communications: Outreach and Information Sharing	3.1.1 Promote understanding and participation in the development of management plans, methods, and strategies 3.1.3 Document and utilize traditional and local knowledge following protocols 3.3.3 Recognize and promote responsible use of the resource 3.4.1 Educate public on the values of salmon and salmon habitat 3.4.2 Document cultural values of salmon resources by community

PROJECT SUMMARY:

The Teslin Tlingit Council (TTC) is strongly affected by the low salmon runs on the Yukon River as it lies at the headwaters – Upper Teslin salmon stocks have the longest journey and must pass through more nets than any other salmon on the Yukon River to reach their spawning grounds south of Teslin Lake. TTC believes strongly in being a role

model community for others within and outside of the Yukon River Drainage. The TTC government is committed to continuing a management regime that allows for the best possible chance of salmon population recovery, and recognises that this requires full community support. To this end, we are developing a community-based Salmon Management Plan. An initial workshop in March 2009 gave us direction for drafting a plan, and also sent a clear message that strong management actions were desired for the upcoming season. TTC will continue this process with another workshop in early winter to present the draft Plan and get feedback on its contents as well as the process of management implementation and consultation throughout the 2009 season. This workshop has been approved for funding through the Aboriginal Fisheries Strategy.

To date, there have been a number of studies within our Traditional Territory that identify potential projects related to Chinook salmon, but we are lacking a strong framework to guide prioritisation.

We are requesting financial assistance from the Yukon River Panel's R&E Fund to help us synthesize the output from these community workshops with these previous studies in such a way that we can generate a framework that can guide our management decisions.

The scope of the first incarnation of the Community Salmon Management Plan will include:

1. Identifying main activities that affect salmon (during both juvenile and adult stages) and salmon habitat within the Traditional Territory;
2. Ranking those activities by size and scope of impact, and prioritising action areas;
3. Identifying projects for immediate implementation;
4. Clarify the role of our department in managing the salmon fishery, and generate management guidelines that can be adapted in-season.

LIFE OF PROJECT: The plan is intended to be complete by Winter 2010; the plan will allow for a 3 year review.

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	
Operation & Mainten	1900
Admin/Indirect/Overhead	
Personnel	7500
Total Request	9400

Professional Services:	10 days at $750/day
Travel/Accommodation:	est 1 week in Teslin $1200
Materials/Supplies:	$700 (including printing and binding)

Total In-kind/other	600	3 days @ $200/day gathering info; admin

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-126N-10

PROJECT TITLE: Whitehorse Rapids Fishladder's Salmon Art Project – Phase 2

PROJECT PROPONENT: Yukon Energy Corporation

CONTACT:
Janet Patterson
Supervisor of Communications
Yukon Energy Corporation
Box 5920, #2 Miles Canyon Rd.
Whitehorse, Yukon
Y1A 6S7
Phone: (867) 393-5333 or 335-1519.
Email: janet.patterson@yec.yk.ca

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:
Yukon Fish and Game Association
Gordon Zealand, Executive Director
Phone: (867) 667-4263
Email: yfgaexdir@klondiker.com
Please note that the YFGA's participation would not be monetary but rather would be as the group that manages the fishladder for Yukon Energy.

Yukon schools (number to depend on interest)

PROJECT LOCATION:
Destination will be at the Whitehorse Rapids Fishway. Fish will be decorated at schools throughout the Yukon.

PROJECT OBJECTIVES:
1. To provide youth and other Yukon residents and communities an opportunity to participate in an activity directly related to Yukon River salmon, with the objective of or increasing their desire to maintain and protect salmon stocks and habitat.
2. to demonstrate Yukoner's desire to maintain and protect salmon stocks and habitats through displaying the decorated fish at the Whitehorse Rapids Fishway.

PROJECT SUMMARY:
To mark the 50th anniversary of the fishladder, Yukon Energy commissioned Whitehorse snow carver and artist Donald Watt to coordinate a community art project for us. He had local carvers create 60 wooden salmon, which were then distributed to Yukoners of all ages and from all over the territory, to decorate the salmon. Ninety Yukoners

participated in this project, ranging in age from an 18-month old toddler in Whitehorse to elders in Old Crow. Many families with young children were involved. The fish, once decorated and weather protected, were displayed together at the fishladder. Photos of the project can be found at: http://blog.yukonenergy.ca/blog/last_nights_art_unveiling/

This project has garnered a great deal of positive feedback from the public and has prompted many requests for us to add on to the art piece in 2010. Schools and day cares are particularly interested, so if we proceed with Phase 2 we would first offer the fish to these young audiences before opening it up to the wider general public. For school children, this could be part of their unit on salmon and we believe the art piece would encourage more children and their families to come to the fishladder, where they would be exposed to a wide variety of information about Chinook salmon.

The total cost of this project would be $12,000 – half of which we hope will be paid for by the Yukon River Panel and the other half by Yukon Energy. Cost would include hiring Donald Watt to coordinate the project (he did an extremely good job for us in 2009), and the cost of the wooden fish and materials needed to mount the fish.

Since Donald is knowledgeable about how to install this art piece, there would be no training required, although I would oversee and manage all aspects of the project.

I anticipate the call to participate in this project to go out to schools and day cares in early April of 2010 (as soon as a decision is made on funding from the Panel), with fish being distributed to them in late April and with installation taking place in time for the opening of the fishladder on June 1.

LIFE OF PROJECT: This is a one time request for funding for this project.

ESTIMATED BUDGET:

Project Budget	
	Amount $
Capital	4,000
Operation & Maintenance	
Admin/Indirect/Overhead	
Personnel	2,000
Total Request	6,000
Total In-kind/other	6,000

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-127N-10

PROJECT TITLE: Tr'ondëk Hwëch'in and Ta'an Kwäch'än Council Viable Fisheries

PROJECT PROPONENT: Tr'ondëk Hwëch'in

CONTACT:
Roberta Joseph
Coordinator
Fish and Wildlife Branch
Tr'ondëk Hwëch'in
Box 599
Dawson City, YT Y0B 1G0

Tel: 867.993.7107
Fax: 867.993.6553
E: roberta.joseph@gov.trondek.com

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS: Ta'an Kwäch'än Council

PROJECT LOCATION: The Town of Dawson City and Whitehorse, Yukon, respectively: Yukon north mainstem watershed

PROJECT OBJECTIVES: This project seeks to access the following envelopes of the Yukon River Panel Budget Priorities Framework: 1) the conservation and 2) the viable fisheries.

Through the conservation envelope, this project will address harvest conservation by providing gillnets with a mesh size of 6 to 6 ½ inches to Tr'ondëk Hwëch'in (TH) and Ta'an Kwäch'än Council (TKC) subsistence[1] harvesters. Furthermore, it is proposed that the hanging ratio for the nets be 2:1. Through the use of these smaller meshed gillnets, TH and TKC harvesters will be selectively fishing smaller salmon, thereby allowing the larger – and more biologically desirable – brood stocks to reach their spawning grounds. This is one means by which TH and TKC citizens can take ownership of the declining salmon size.

Furthermore, through the viable fisheries envelope, this project will help provide the fishing gear necessary for TH and TKC citizens to continue their annual subsistence harvest, thereby helping to maintain the viability of our fishery.

PROJECT SUMMARY: Fishing gear (fish tubs, float and lead line, floats, mesh and hanging twine) will be ordered and delivered from Alaska. From there, workshops will be convened for interested TH and TKC youth and adults in crafting their own fish nets. It is expected that this project will be interwoven with the First Fish and Helen's Fish Camp

[1] In this context, "subsistence" means the use of Edible fish products by a Yukon Indian Person for sustenance and for food for traditional ceremonial purposes including potlatches.

respectively. In short it is our intent to provide our citizens with the skills they will need in order to craft and mend their nets in the future.

LIFE OF PROJECT: One year

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	11000
Operation & Maintenance	0
Admin/Indirect/Overhead	3000
Personnel	6000
Total Request	20,000

Total In-kind/other

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-128N-10

PROJECT TITLE: Ta'an Kwäch'än Council Culture Camp

PROJECT PROPONENT: Ta'an Kwäch'än Council
Lands, Resources and Heritage Department

CONTACT:

- Rosa Brown, Fish and Wildlife Program Coordinator, Ta'an Kwäch'än Council
  Suite 100-204 Black Street, Whitehorse, YT, Y1A 2M9
  Phone: (867) 668-3444 Ext. 231
  rbrown@taan.ca

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:

- Fisheries and Oceans Canada,
  Contact Al von Finster, phone: (867) 393-6721, Al.vonfinster@dfo-mpo.gc.ca
- Yukon Government, Department of Environment, Conservation Officer Services
  Contact: Larry Bill, phone (867) 667-5785, larry.bill@gov.yk.ca

PROJECT LOCATION:

This project will be based at the Ta'an village of Upper Laberge on the east shore of Lake Laberge. This is north of Whitehorse and is located in the Yukon River Upper Lakes Watershed.

PROJECT OBJECTIVES:

The TKC Culture Camp has taken place for many years, during spring break and for a week in August. In 2009, 23 youth, aged 8-15 participated in a 5 day, overnight camp located at the old Ta'an village of Upper Laberge, The camp's goal is to teach children and youth traditional activities on the land. Recently, the need to provide activities and education appropriate for the increasing numbers of adolescents has been identified as a priority, with increased emphasis on fishing and family activities. Our objectives for this project are:

- to have youth learn traditional values regarding salmon and the use of salmon while gaining appreciation for the modern values of salmon and their habitats
- to increase community capacity to participate more effectively in the management, protection and maintenance of Yukon River Chinook salmon and their habitats.

Our objectives relate clearly to the Point #5 of Panel's 2010 priorities and the Budget Priority Framework's Stewardship Goal. They also relate well to the JTC's Goal #3, the building of public support and meaningful participation in the management of salmon and their habitats.

PROJECT SUMMARY:

We are applying to the R&E fund for assistance to increase the duration of our culture camp by one week. This will facilitate a fishing component which will focus on Chinook salmon. Additionally, we will approach DFO to collaborate with our staff (including the Community Stewards which we hope to have funded under application CRE54-10) to provide scientific and technical knowledge on salmon and their habitats. This may include hands-on sampling of adult and juvenile salmon. Funding will be used to purchase additional fishing equipment, for camp expenses including boat rental and fuel, and for additional personnel to assist with instruction and education including operating the boat and tending the net, cutting the fish, maintaining the camp etc.
TKC in-kind support will include staff time, equipment and departmental support.

LIFE OF PROJECT:

This is the first year we have applied for funding to support Culture Camp activities. It is our hope that it will become an ongoing project.

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	1800
Operation & Maintenance	550
Admin/Indirect/Overhead	500
Personnel	1750
Total Request	4600
Total In-kind/other	2000

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2009 CONCEPTUAL PROPOSAL

NUMBER: CRE-129N-10

PROJECT TITLE: Chinook Public Info Display

PROJECT PROPONENT: Teslin Tlingit Council

CONTACT: Tracy Boyes, Renewable Resource Manager
Phone (876) 390-2532 ext 428
Fax (867) 390-2116
tracy.boyes@ttc-teslin.com

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:

PROJECT LOCATION: Gazebo at lookout on Alaska Highway, just south of Teslin

PROJECT OBJECTIVES:

Project Objective	2010 R&E Budget Priority	R&E Budget Priorities Framework	JTC Plan
Provide public education for local residents as well as tourists on the ecology of the Chinook Salmon	5. Community Education and Stewardship: Advance information, education and training, including traditional knowledge a) to enable more effective community participation in the management of Yukon River salmon stocks and salmon habitat b) to increase salmon users and non-users desire to maintain and protect salmon stocks and habitat	Communications: Outreach and Information Sharing	3.4.1 Educate public on the values of salmon and salmon habitat
Raise awareness on the factors that influence salmon populations		Communications: Outreach and Information Sharing	
Create links to illustrate how we as individuals impact the salmon and vice versa		Communications: Outreach and Information Sharing	
Provide information on the users of salmon, current and historic; cultural and heritage value			3.1.3 Document and utilize traditional and local knowledge following protocols 3.4.2 Document cultural values of salmon resources by community
Provide current information on successful salmon conservation initiatives		Communications: Outreach and Information Sharing	3.3.3 Recognize and promote responsible use of the resource

PROJECT SUMMARY: A 3-panel display will be created that includes information on the following:

- Ecology of Salmon, including habitat needs (life cycle), role/importance in ecosystem
  - Inset: How does salmon affect you?
- What factors impact the salmon throughout its life cycle?
  - Inset: How do you affect the salmon?
- A success story in salmon conservation, this panel to be dynamic and updated every two years

The display will also include a map of the Yukon River Drainage, and will be accessible for a wide range of levels, including youth and children. The Teslin School will be asked to participate in creating some artwork to be included in the display.

LIFE OF PROJECT: The project will consist of a one-time investment to create the display, which will be permanent. On a biannual basis the 'success story' panel will be updated.

ESTIMATED BUDGET:

Project Budget

	Amount $	
Capital	2500	printing
Operation & Maintenance	200	installation
Admin/Indirect/Overhead		
Personnel	4500	consultant/artist
Total Request	7200	
Total In-kind/other	600	3 days develop concept w/artist @ 200/day

YUKON RIVER RESTORATION AND ENHANCMENT FUND
COMMUNITY BASED STREAM STEWARDSHIP PROJECTS
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-130N-10

PROJECT TITLE: First Nation of Na Cho Nyak Dun Youth Steward

PROJECT PROPONENT: First Nation of Na Cho Nyak Dun
CONTACT:

Dawna Hope
Lands Policy/Fish & Wildlife
Lands and Resources Department
First Nation of Na Cho Nyak Dun
Box 220
Mayo, YT Y0B 1M0
Tel: 867.996.2265 Ext.138
Fax: 867.996.2267
Email: landspolicy@nndfn.com

PROJECT LOCATION: The Town of Mayo, Yukon: Stewart River watershed

PROJECT OBJECTIVES: The FNNND seeks to build community capacity through encouraging our youth to learn about salmon and the conservation, management, restoration and enhancement of their habitats. Our objectives for this project are:

- To involve a local youth in salmon-related activities in our traditional territory;
- To encourage the youth to pursue such educational opportunities as are available to allow her or him to lead restoration and enhancement projects in the future.

These objectives meet the 2010 priority #5 – Community Education and Stewardship, and Budget Priorities Framework - Stewardship.

PROJECT SUMMARY: The youth steward will be provided with experience in working in the salmon field. This will include his or her participation in salmon conservation, restoration and enhancement projects, including such agency projects as may be carried out in the Stewart River Watershed. Opportunities will be provided for training required to work safely. We will encourage his or her interest in pursuing an education/career with renewable resources. We propose to hire a local youth for an 8 week period during the peak salmon season for an estimated employment rate of $12/hour. The youth steward position is intended to be fulfilled by youth under the age of 18 to help direct youth to pursue educational direction to involve salmon, enhancement and assist in building current and future capacity within the community. Dawna Hope will supervise the youth steward position.
LIFE OF PROJECT: Ongoing

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	
Operation & Maintenance	
Admin/Indirect/Overhead	690
Personnel	4,600
Total Request	5,290

Total In-kind/other

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-131N-10

PROJECT TITLE: Yukon Territory Salmon Users Conference

PROJECT PROPONENT: Teslin Tlingit Council,

CONTACT: Tracy Boyes, Renewable Resource Manager
Phone (876) 390-2532 ext 428 Fax (867) 390-2116
tracy.boyes@ttc-teslin.com

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:
Ta'an Kwäch'än Council (Rosa Brown, Fish and Wildlife Program Coordinator)
Phone (867) 668-3444 ext 231 Fax (867) 668-3446 rbrown@taan.ca

PROJECT LOCATION: In or around Whitehorse, Yukon

PROJECT OBJECTIVES:

Budget Priorities Framework: Communications: Outreach and Information Sharing

Project Objective	2010 R&E Budget Priority	JTC Plan
Increase awareness among salmon users in YT of each others' challenges and values	5. Community Education and Stewardship: Advance information, education and training, including traditional knowledge a) to enable more effective community participation in the management of Yukon River salmon stocks and salmon habitat b) to increase salmon users and non-users desire to maintain and protect salmon stocks and habitat	3.1.1 Promote understanding and participation in the development of management plans, methods, and strategies 3.1.3 Document and utilize traditional and local knowledge following protocols 3.3.3 Recognize and promote responsible use of the resource 3.4.1 Educate public on the values of salmon and salmon habitat 3.4.2 Document cultural values of salmon resources by community
Develop common messages that can be delivered to the public to raise awareness on the salmon decline and its wide-ranging impacts		
Explore potential for a watershed wide communication strategy		

PROJECT SUMMARY:
The issues and challenges surrounding the decline of Yukon River Salmon are at the forefront of priorities for First Nations in the Yukon. There are a variety of forums in place where we can, and have, discussed these concerns with tribes in Alaska, and with various management and advisory bodies. However, we lack a forum in which to discuss the salmon issue at a territorial level. We recognise that First Nations are not the only people who use the salmon, and we believe in fact that all Yukoners, whether

or not they are aware of it, are affected by the salmon and would be impacted by their loss.

We therefore propose a conference to gather representatives from each user group in the Yukon to meet and discuss the challenges specific to each group, in order to gain a more comprehensive perspective. Last year a number of meetings were held in Alaskan communities with the help of the Yukon River Drainage Fisheries Association to gain input for in-season management, resulting in effective community-based conservation efforts that led to Alaska meeting its treaty obligations for Canadian escapement (Yukon River Salmon Agreement) for the first time in four years. We believe that the future of salmon in the Yukon River is dependent on building solid relationships among all those who rely on the salmon. To this end, we need first to ensure a unified vision among those in the Yukon, which can subsequently be brought to broader forums. A “Salmon Summit” hosted by the Northern Tutchone Renewable Resource Councils held in Whitehorse in October 2009, clearly identified that prior to engaging in watershed level discussions, we in the Yukon must first be accountable to ourselves and each other.

The gathering would include members of each user group that directly makes use of the salmon (First Nations (one elder, one youth), recreational/sport fishers, commercial fishers, fishing guides/outfitters), as well as the Salmon Subcommittee. The participants would be expected to be comfortable exploring the fundamental importance of salmon to their group. We are requesting funding to support the participation of 60 people, to include adequate representation from each group listed above. This would include travel, accommodation in a retreat-style setting, facilitation and administrative/logistical support to be contracted out.

Deliverables would include:

- A public education strategy to raise awareness of the salmon’s plight and how it affects all Yukoners, not just those who fish salmon
- Public communication that illustrates the concerns of each user group on the Yukon River in Canada (pamphlet, newspaper articles etc)
- Direction on how to engage user groups in Canada with user groups in Alaska

LIFE OF PROJECT: Single year project

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	
Operation & Maintenance	46000
Admin/Indirect/Overhead	8000
Personnel	6000
Total Request	60000
Total In-kind/other	10000

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-132N-10

PROJECT TITLE: Yukon Fisheries Field Assistant Program: Online Delivery combined with three-week field camp.

PROJECT PROPONENT: Yukon College
CONTACTS:

Shelagh Rowles
Dean,
Applied Science and Management
500 College Drive, PO Box 2799
Whitehorse, Yukon Y1A 5K4
srowles@yukoncollege.yk.ca
t 867.668-8741
f 867.668-8828

Louis Schilder
Chair,
Science, Trades & Technologies
lschilder@yukoncollege.yk.ca
t 867.668.8865
f 867.668.8805

Darrell Otto
Instructor, Renewable Resources Management
500 College Drive, PO Box 2799
Whitehorse, Yukon Y1A 5K4
dotto@yukoncollege.yk.ca
t 867.668.8868
f 867.668.8828

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:
Possible partners will include Yukon First Nations, federal and territorial governments, and local fisheries.

PROJECT LOCATION: Combination of on-line interactive computer-based instruction coupled with a three- week field camp. Instructor would be Whitehorse based while the participants could access on-line course work from anywhere in the territory. The field camp will be located in a location on the Yukon River.

PROJECT OBJECTIVES:

1. Convert classroom-based portion of the existing Fish Tech curriculum to online format to the largest degree possible to minimize the amount of time students need to be away from their community and to provide opportunities for individuals from across the territory to access the program.

2. To provide an opportunity for Yukon residents to complete a Yukon Fisheries Field Assistant certification program within the Territory.
3. To equip students with skills and knowledge of salmon biology, fish identification, stock assessment, fish and fish habitat inventories, assessments, and restoration techniques.
4. To give students an opportunity to acquire skills in planning procedures, permit applications, project administration, and proposal writing as this pertains to fisheries fieldwork.
5. To draw on local knowledge and expertise to instruct and provide locally relevant material.
6. To build on the knowledge and expertise gained in offering this course to students in Dawson during August 2003 & May 2004, Teslin in 2006 and Pelly Crossing in 2007.

PROJECT SUMMARY: The primary focus of this project is to provide relevant educational training opportunities to members of community stewardship groups throughout the Yukon, including First Nations, and commercial fishers. Providing approximately 50% of the program on-line allows students to remain in their respective home communities for a significant part of the course. Yukon Fisheries Field Assistant Program is designed to meet Territorial needs for certified skilled fisheries assistants. The fieldwork portion will be offered over three weeks (18 days) at a field camp in late May or early June for each year of the program. Program graduates will be employable in fisheries work with Department of Fisheries and Oceans, Yukon Territorial Government, Yukon First Nations, and Restoration and Enhancement Fund Projects.

LIFE OF PROJECT: Three Years

ESTIMATED BUDGET:

Project Budget	**YEAR 1 Amount**	**YEAR 2 Amount**	**YEAR 3 Amount**
Capital	$ 10,000		
Operation & Maintenance	$ 37,350	$ 40,350	$ 37,038
Admin/Indirect/Overhead	$ 14,078	$ 11,547	$ 11,608
Personnel	$ 46,503	$ 36,631	$ 40,350
Total Request	**$ 89,931**	**$ 70,529**	**$ 70,997**
Total In-kind/other	$ 18,000	$ 18,000	$ 18,000

ABSTRACT OR PROJECT SUMMARY:

This will be the first year of a three-year initiative. If successful in this application, a project summary will be provided for 2010-2011 and 2011-2012.

YUKON RIVER RESTORATION AND ENHANCEMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: **CRE-133N-10**

PROJECT TITLE: Fox Creek Chinook Incubation Survival Project

PROJECT PROPONENT: Northern Research Institute, Yukon College

CONTACT:
Administration - Clint Sawicki: 867-668-8772, csawicki@yukoncollege.yk.ca
Proponent: David Blakeburn: 867-633-4228 dblakeburn@gmail.com
Proponent: Daniel Jolkowski: 867-334-8980 danijolk@yahoo.com

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:
Ta'an Kwach'an Council (TKC), Rosa Brown: 668-3613 ext. 231 rbrown@taan.ca
Access Consulting Group, Yukon Energy [Whitehorse Rapids Hatchery] - David Petkovitch Ph. (867) 668-6463 ext.240 E : david@accessconsulting.ca
Lawrence Vano 668-3938 chinook@northwestel.net
Fisheries and Oceans Canada (DFO) Trix Tanner: 867-667-8496 - tannert@dfo-mpo.gc.ca

PROJECT LOCATION: Fox Creek, tributary to Lake Lebarge in the Yukon River Upper Lakes Watershed.

PROJECT OBJECTIVES: The extirpated Fox Creek Chinook salmon stock is being restored. Broodstock are taken from the Whitehorse Rapids Fishway. Due to administrative considerations, broodstock has tended to be from the latter part of the salmon run. This has raised concerns that there may be negative effects on the timing of hatching and the survival of the eggs and/or alevins. The objective of this project is:

- To test the effect of different timing of commencement of incubation on the hatching timing and survival of Chinook salmon eggs in Fox Creek (2010 priorities - #7, Stock Restoration; BMP – Restoration-Stocks-Research & Restoration-habitat-research; JTC Research Plan 2.3.3)
- To increase the capacity of Yukon College students to design and conduct a formal scientific study under the mentorship of DFO staff that will be relevant to the restoration of Chinook salmon stocks in Fox Creek and elsewhere (2010 priorities #5, Community Education and Stewardship; BMP – Stewardship; JTC Research Plan, 3.2.3 Increase Community Capacity)

PROJECT SUMMARY:

Egg samples will be taken from the first ripe Chinook salmon available at the Whitehorse Rapids Fishway or the Whitehorse Rapids Hatchery, and again from the latest available ripe fish at the hatchery. Two sites in Fox Creek will be chosen in consultation with the TKC Stewards. One box will be placed in each site in August 2010 and again in September for a total of 4 boxes. Stream temperatures will be monitored using Stowaway Tidbit temperature loggers to determine when eggs should have reached the eyed stage, and when they should have hatched. Stream temperature data will be collected in accordance with the YRP Protocol. The Vibert boxes will be recovered when the salmon are at the eyed and alevin stages to assess survival. This information will help NRI and TKC to determine whether run timing in returning Fox Creek fish would affect Chinook egg survival, and fry emergence when the projected returns of adults to the creek occurs. It could also guide broodstock selection in future years and wild fry monitoring schedules in future years.

LIFE OF PROJECT: August, 2010 to May, 2011

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	600.00
Operation & Maintenance	600.00
Admin/Indirect/Overhead	
Personnel	1700.00
Total Request	2900.00

Total In-kind/other

Northern Research Institute, Yukon College $2000.00 (4 days @ $500)

YUKON RIVER RESTORATION AND ENHANCEMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: **CRE-134N-10**

PROJECT TITLE: Monitoring of Yukon River Chinook returns to mainstem release sites upstream of the Whitehorse Rapids Dam

PROJECT PROPONENT: Northern Research Institute, Yukon College

CONTACT: Clint Sawicki Northern Research Institute, Box 2799, Whitehorse, YT Y1A 5K4
Ph.867-668-8772 E: csawicki@yukoncollege.yk.ca
Project Contacts: David Blakeburn: 867-633-4228 dblakeburn@gmail.com,
Daniel Jolkowski: 867-334-8980 danijolk@yahoo.com

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:
Access Consulting Group, Yukon Energy [Whitehorse Rapids Hatchery] -
David Petkovitch Ph. (867) 668-6463 ext.240 E : david@accessconsulting.ca
Lawrence Vano 668-3938 chinook@northwestel.net
Fisheries and Oceans Canada (DFO) Trix Tanner: 867-393-6703 – trix.tanner@dfo-mpo.gc.ca, Pat Milligan: 867-393-6720 – Patrick.Milligan@dfo-mpo.gc.ca

PROJECT LOCATION: Yukon River – upstream of the Whitehorse Hydro-Electric dam

PROJECT OBJECTIVES: Salmon spawned in the Yukon River between the Whitehorse Rapids Hydro Dam and the Lewes River dam prior to the regulation of the river. In 2005 salmon fry from the Whitehorse Rapids Hatchery were released to this area as a stock restoration measure. Returns are expected in 2010. This project will:

- Enumerate Chinook salmon returns to the Yukon River between the Whitehorse Rapids hydro-electric dam and the Lewes River Bridge (2010 priorities #7; BMP – Restoration-stocks-implementation & Conservation-habitat-assessment)
- Collect Age-sex-length data, and determine hatchery/wild origin from carcasses and/or spawned salmon (2010 priorities #3; BMP: Conservation-stocks-escapement studies).
- Map the locations of spawning sites and carcass retrieval areas upstream of the hydro-electric dam. (2010 priorities - #7; BMP – Restoration-Stocks-Research & Restoration-habitat-research; JTC Research Plan 2.3.3)

- To increase the capacity of Yukon College students to design and conduct a formal monitoring program under the mentorship of DFO staff that will form the basis of future monitoring of the mainstem releases. (2010 priorities #5, Community Education and Stewardship; BMP – Stewardship; JTC Research Plan, 3.2.3 Increase Community Capacity)

PROJECT SUMMARY: Four boat surveys of the Yukon River between the Whitehorse Rapids dam and the Lewes River Bridge will be undertaken in late August and early September 2010, to enumerate spawning chinook, map redds, and carcass retrieval sites, and sample carcasses or spawned out fish. Timing of surveys will be determined in season in consultation with Fishway personnel and DFO. A final report will include maps of identified spawning areas and carcass retrieval sites.

LIFE OF PROJECT: August, 2010 to October, 2010

ESTIMATED BUDGET:
Project Budget

	Amount $
Operation & Maintenance	500.00
Admin/Indirect/Overhead Personnel	1500.00
Total Request	2,000.00

Total In-kind/other

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-135N-10

PROJECT TITLE: Tatchun Creek Chinook Salmon Enumeration Weir

PROJECT PROPONENT: Fisheries and Oceans Canada

CONTACT: Patrick Milligan, Suite 100, 419 Range Road, Whitehorse Yukon Y1A 3V1
Phone: (867) 393-6720
E-mail: Patrick.Milligan@dfo-mpo.gc.ca

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS: Little Salmon Carmacks First Nation (LSCFN) and Northern Research Institute (NRI).

PROJECT LOCATION: Nearest communities: Carmacks and Pelly, Yukon

PROJECT OBJECTIVES:

3) Install and operate a weir in Tatchun Creek to enumerate the Chinook salmon escapement.
4) Conduct a sampling program to obtain age-sex-length data from live Chinook salmon at the weir, and monitor the return for CWT's.
5) Promote salmon viewing and increase awareness of the weir project and the salmon resource.
6) Provide training, community capacity through working with LSCFN community members and NRI students

Budget Priority Framework 2007:
Objectives 1 and 2 fall within the stated YRP budget priority Framework 2007 goals of Conservation – Stocks – Run Assessment and Escapement studies.

Objectives 3 and 4 fall within the R&E Fund Budget Priorities goals of "Communications – Outreach & Information Sharing."

US and Canada Yukon River Salmon Joint Technical Committee Plan:
Estimate or indexed escapements 1.1.1
Estimate the stock biological composition of escapements 1.1.2
Estimate or index abundance 1.2.1
Estimate CMU composition of abundance (1.2.2) and Define CMU (1.3.3)
Estimate characteristics of run timing 1.2.3
Improve run assessment capability 1.4.1

Utilize capabilities of communities 3.2.1

Budget Priorities for 2010 & Near Term Priorities:
The R&E Fund Budget Priorities Subcommittee recommends the following as a near term priority for use of the R&E Fund in 2010: "Stock Escapement Monitoring of the Canadian tributaries", implementation of "stock escapement monitoring projects for selected Canadian tributaries."

PROJECT SUMMARY: This project will involve the installation of a weir in Tatchun Creek to enumerate the Chinook salmon escapement and obtain biological samples. The weir will be placed in the same general location as used in the 1997-2000 period. Construction of the weir and camp will begin on or around July 27. The weir will be operated over the course of the run, ending on or around August 31. Personnel will be on site 24 hours a day and the weir checked each day on an hourly basis from first light until dark. Fish will be sampled each day with the objective of sampling an upper goal of approximately 450-600; success will depend upon run size and other factors. Sampling will consist of collecting five scales per fish placed in prescribed scale cards, recording sex, fin clips and CWT's, fork length as well as 50 paired FL and mid-eye fork (MEF) lengths (to the nearest 0.5cm). The program will assess the numbers of returning NRI project clipped fish, and counting fence project personnel could inform NRI personnel about run timing for brood stock collection. It could possibly (depending on ripeness of fish at the weir, and bear issues around holding fish) also be used to collect some of the brood stock. The proponent will administer, co-ordinate and oversee operations and foster capacity building with the other proponents.

LIFE OF PROJECT: Ongoing

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	
Operation & Maintenance	10,000.00
Admin/Indirect/Overhead	00.00
Personnel	28,000.00
Total Request	38,000.00
Total In-kind/other	5,000.00

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-136N-10

PROJECT TITLE: Radio Tower Retrieval

PROJECT PROPONENT: Fisheries and Oceans Canada

CONTACT: Patrick Milligan, Suite 100, 419 Range Road, Whitehorse Yukon Y1A 3V1
Phone: (867) 393-6720
E-mail: Patrick.Milligan@dfo-mpo.gc.ca

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS: NA

PROJECT LOCATION: Yukon Territory Canada, Yukon River Drainage

PROJECT OBJECTIVES:

1) Removal of five Canadian radio telemetry towers that were installed to provide data on fall chum and Chinook salmon stocks in the Yukon Territory. These projects contributed a considerable amount of data including stock composition, stock timing, and migration behaviour as fish migrated to Canadian spawning areas.

Budget Priority Framework 2007:

The actual field component of the telemetry program has been completed, however the link to the BPF 2007 was as follows:

Improve information on biological composition of run (ranked 1 of 3)
Analysis of spatial and temporal aspects of salmon migration (ongoing) (ranked 1 of 3)
Identify and monitor escapements to key salmon spawning streams/areas (ranked 2 of 3)
Inventory of salmon spawning locations throughout the Yukon River drainage (ranked 1 of 3)
Locate and documented spawning and rearing habitat (ranked 1 of 4)
Support technical capacity building in communities (ranked 2 of 4)

US and Canada Yukon River Salmon Joint Technical Committee Plan (JTC):

The actual field component of the telemetry program has been completed; however the link to the JTC Plan was as follows:

Estimate or index escapements 1.1.1
Estimate the stock biological composition of escapements 1.1.2
Estimate or index abundance in-season 1.2.1
Estimate CMU composition of abundance (1.2.2) and Define CMU (1.3.3)
Estimate characteristics of run timing 1.2.3
Improve run assessment capability 1.4.1
Identify important features of habitat 2.1.1
Utilize capabilities of communities 3.2.1

Budget Priorities for 2010 & Near Term Priorities: NA

Continuation of cooperation and sharing of burden for this large scale project that provided valuable information to both US and Canada.

PROJECT SUMMARY: A fall chum salmon radio telemetry project was initiated in the upper portion of the Yukon and Porcupine River drainages in 1998 and 1999, followed by a Chinook salmon radio telemetry project that was operated in the Yukon River drainage from 2000 through 2004. For these projects a network of remote tracking stations with satellite uplinks were used to collect and access salmon movement information into Canada. In the foreseeable future there are no projects scheduled to use the towers. Several US telemetry towers located in Canada were removed in 2009 and this proposal is for the removal of Canadian telemetry towers located in Canada. The original project received funding from the U.S./Canada Yukon River Grant as well funding from the Restoration and Enhancement Fund of the Yukon River Panel and included an obligation to remove the towers after the conclusion of relevant studies.

Two DFO employees or contract staff will stage tower recoveries at Stewart, Pelly, Hootalinqua, and two units on the White River. Local helicopter services will be employed to take crew to the individual sites and sling out disassembled towers to DFO or contractor's vehicles.

LIFE OF PROJECT: 2 weeks in 2010, one year only. Timing will depend on available staff and other considerations such as avoiding nesting peregrine falcons.

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	
Operation & Maintenance	35,000
Admin/Indirect/Overhead	
Personnel	6000
Total Request	41,000

Total In-kind/other

ON-GOING PROJECTS: Data is still being processed from the radio telemetry research.

Eiler, J. H., T. R. Spencer, J. J. Pella, and M. M. Masuda. 2006. Stock composition, run timing, and movement patterns of Chinook salmon returning to the Yukon River Basin in 2004 U.S. Dep. Commerce., NOAA Tech. Memo. NMFS-AFSC-165, 107 p.

ABSTRACT

A radio telemetry study was conducted on Yukon River Chinook salmon (*Oncorhynchus tshawytscha*) during 2004 to provide information on stock composition and run timing, migration patterns, and locations of important spawning areas. A total of 995 fish were radio tagged in the lower Yukon River near the village of Russian Mission. After tagging, most (958, 96.3%) fish resumed upriver movements, with 329 fish harvested in fisheries and 629 fish tracked to upriver areas using remote tracking stations and aerial surveys. Stock composition estimates were developed for the 2004 return based on the distribution of daily releases of radio-tagged fish weighted by daily measures of abundance and adjusted for fish harvested in fisheries. The Chinook salmon run was composed primarily of Tanana River (24.4%) and upper basin (55.2%) stocks. Canadian-origin fish comprised a substantial proportion of the return (47.5%), with most traveling to reaches of the Yukon River (46.2%) and only small numbers to the Porcupine River (1.3%). Yukon River fish in Canada returned to large headwater tributaries including the Stewart, Pelly, Big Salmon, and Teslin rivers (27.3%), small tributaries associated with the main river (8.2%), and reaches of the Yukon River main stem (10.7%). Chandalar and Sheenjek River fish (2.9%) were the principle U.S. stocks in the upper basin. Tanana River fish were predominantly Chena, Salcha, and Goodpaster River stocks (17.9%), with small populations located in other tributaries. Middle basin fish traveling to the Koyukuk, Melozitna, Nowitna, and Tozitna rivers were a minor component of the run (5.5%). Stocks returning to lower basin tributaries (7.6%) were primarily Bonasila, Anvik, and Nulato River fish (7.1%). The two major stock groups, Canadian Yukon River and Tanana River fish, exhibited similar run timing with most fish passing through the lower river in mid-June, although several distinct pulses were also observed in early June and late June-early July. In Canada, upper headwater stocks displayed a later and more protracted run timing. Lower basin stocks consisted primarily of late run fish, although other stocks, particularly Canadian Yukon River fish, were also present during this period. Movement rates for radio-tagged fish averaged 51.8 km/day. Middle and upper basin stocks averaged 46.4 km/day and 55.1 km/day, respectively. However, these stocks exhibited comparable movement rates in reaches of the Yukon River main stem, while slower swimming speeds were recorded as the fish approached their natal streams. Movement rates for lower basin stocks were substantially less, averaging 34.6 km/day, possibly due to the shorter distances traveled to reach their spawning areas.

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-137N-10

PROJECT TITLE: Collection and comparison of Chinook Salmon Age, Length, Sex and Genetic data using Fish Wheel and other gear

PROJECT PROPONENT: Fisheries and Oceans Canada and the Alaska Department of Fish and Game

CONTACTS:

Patrick Milligan
Fisheries and Oceans Canada
Whitehorse Yukon
Y1A 3V1
Phone (867) 393-6720
E-mail Patrick.Milliganp@pac.dfo-mpo.gc.ca

Katie Howard
Yukon Area Research Biologist
Alaska Department of Fish and Game
Commercial Fisheries Division
333 Raspberry Road
Anchorage, AK 99518
Phone 907 267 2141
E-mail kathrine.howard@alaska.gov

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:
The samples collected will be shared between the project proponents and made available to other interested parties and the Joint Technical Committee. It is anticipated that there will be both community interest and community involvement in sample collection.

PROJECT LOCATION: Mainstem Yukon River near Eagle Alaska and Canadian border

PROJECT OBJECTIVES: This project has three objectives:
1) The collection of Age Sex Length (ASL) and genetic (DNA) samples from Chinook salmon near Eagle Alaska and the Canada border
2) Comparison of the information collected with similar information collected as part of the Eagle Sonar Test fishery program and Canadian escapement programs.
3) Development of a "Gold Standard" for escapement sampling which can be used for annual (and historic) run reconstruction of Canadian-origin Chinook salmon.

Meets the following criteria of the 2010 Yukon River Panel R&E Fund Priorities:
2. Stock Identification and In-Season Management
- Supplement existing genetic stock identification baseline data, by obtaining tissue samples from priority watersheds identified by the Panel's JTC.

3 Determine the quality of stock escapement.
- Refine the understanding of effects of fishing techniques and gear selectivity on the quality of Chinook salmon escapement.

Meets the following criteria of the Budget Priorities Framework 2007:
Conservation/Stocks/Run Assessment
- Improve in-season and post-season resolution of genetic stock identification for Chinook and chum runs (ranked 1 of 3)
- Improve information on biological composition of run (ranked 1 of 3)

Conservation/Stocks/Research
- Improve stock identification and run assessment (ranked 1 of 4)

Meets the following criteria of the US and Canada Yukon River Salmon Committee Joint Technical Committee Plan:

1.4 Improve management and research capability
- 1.4.1 Improve run assessment capacity
- 1.4.2 Improve escapement assessment capacity
- 1.4.3 (Investigate new technology, methods and models)

1.7 Investigate and implement precautionary management
- 1.7.1 Assess limitation of management tools

3.2 Build and maintain community capacity
- 3.2.1 (Utilize capacity of communities)

PROJECT SUMMARY:

There has been a recent shift from mark-recapture to sonar to estimate Canadian border escapement. Subsequently, ADF&G and DFO biologists found that the Eagle test fishery (gillnet) age composition is significantly different from that estimated from mark-recapture (fish wheel) such that the two data sets are not comparable. This finding highlights the need to 1) develop a Gold Standard for monitoring the age composition of the escapement and 2) to develop a conversion factor such that past and future age data are consistent and comparable through time. These data have implications for the development of brood tables and run size projections.

Currently, there are only two years of paired data when both test fishery and fish wheel are operated which is not enough to develop a robust conversion factor or to evaluate appropriate sampling methods. Hence, there is interest in comparing test fishery data from the Eagle sonar program to same year data from fish wheels and Canadian escapement programs to determine what data set(s) should be used in the future to characterize the ASL and genetic composition of Canadian-origin fish. Due to biases associated with nets, fish wheels, and other sample methods, its desirable to compare test fishery (gillnet) data collected at Eagle with fish wheel, carcass sampling and weir data. It is anticipated that this program will be used to work out potential sources of gear bias as well as assist with the finalization of previous run reconstruction tables which are based on ASL data to make the data set consistent through time.

This program is forward looking with respect to the development of escapement monitoring programs which are effective in characterizing the quality of escapement using methods and sampling techniques that are supported by the JTC, i.e. developing a Gold Standard for escapement sampling. ASL data can be collected using many techniques; however a preferred technique will involve data which does not have to be modified to account for gear bias. The analyses of data collected as part of this program will improve fisheries management capabilities and assist managers with respect to ongoing issues such as the fishery gear selection and the fish size issue.

LIFE OF PROJECT: ***Two Years.***

ESTIMATED BUDGET:

Project Budget	
	Amount $
Capital	
Operation & Maintenance	35,000
Admin/Indirect/Overhead	
Personnel	
Total Request	35,000
Total In-kind/other	15,000

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-138N-10

PROJECT TITLE: Juvenile Salmon and Freshwater Species Emigration

PROJECT PROPONENT: Fisheries and Oceans Canada
CONTACTS:
Patrick Milligan
Fisheries and Oceans Canada
Whitehorse Yukon
Y1A 3V1
Phone (867) 393-6720
E-mail Patrick.Milliganp@pac.dfo-mpo.gc.ca

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:
Potential: THFN, USF&WS, ADF&G, YTG; Yukon College, and Environmental Dynamics Incorporated (EDI).

PROJECT LOCATION: Mainstem Yukon River and Klondike River near Dawson City, Yukon.

PROJECT OBJECTIVES: This project has five objectives:
1) The capture and sampling of outmigrating salmon species in the Yukon River from mid-May to August 31.
2/ Collection and GSI analyses of juvenile Chinook and chum salmon from mainstem Yukon River.
3/ Study the feasibility of developing an index of abundance of juvenile Chinook in the Klondike River.
4/ Study the feasibility of determining juvenile Chinook and chum abundance estimates for the mainstem Yukon River through the use of auger trap(s).
5/ Study the feasibility of relating migratory patterns of juvenile salmon to water levels and temperatures on site and in upstream tributaries and to climate variables.

This program is developmental and may become a ongoing program that focuses on the freshwater environment and juvenile salmon. This program has the potential to improve salmon forecasts thus improving stock assessment, stock status and fisheries management capability. This program may provide data that is useful for habitat based production models and provide information on biodiversity (i.e. stock specific information for juvenile salmon and information on non-salmon species).

Meets the following criteria of the 2010 Yukon River Panel R&E Fund Priorities:
6. Habitat Restoration and Enhancement (Chinook salmon being the priority)
Assess and document salmon spawning and rearing habitat to determine and conduct restoration activities.

Meets the following criteria of the Budget Priorities Framework 2007:
Management Needs/Conservation/Stocks/Research
- Document factors affecting survival, health and mortality at all life stages (ranked 1 of 4)
- Assess out-migrants (ranked 4 of 4)

Management Needs/Conservation/Habitat/Assessment

- Locate and document spawning and rearing habitat (ranked 1 of 3)
- Environmental monitoring, particularly of index streams (ranked 2 of 3)
- Provide salmon and salmon habitat information to integrated resource management processes (ranked 3 of 3)

Management Needs/Conservation/Habitat/Research

- Investigate habitat-based escapement objectives for Canadian-origin salmon (ranked 3 of 5)

Conservation/Stocks/Research

- Improve stock identification and run assessment (ranked 1 of 4)

Meets the following criteria of the US and Canada Yukon River Salmon Committee Joint Technical Committee Plan:

1.4 Improve management and research capability

- 1.4.3 (Investigate new technology, methods and models)

3.2 Build and maintain community capacity

- 3.2.1 (Utilize capacity of communities)

4.1 Investigate relationships between salmon and their physical environment

- 4.1.1 (Assess the influence of environment on productivity)

4.2 Investigate relationships between salmon and other organisms

- 4.2.3 (Assess and monitor ecosystem structure and health)
- 4.2.4 (Investigate the effects of competition)

PROJECT SUMMARY: Building on a similar program conducted from 2002 to 2004, a rotary screw trap will be operated in the Yukon River mainstem near Dawson City from mid-May to the end of August 2010, to monitor downstream movements of juvenile Chinook (*Oncorhynchus tshawytscha*) and chum (*O. keta*) salmon from the Upper Yukon River basin. This program will also include testing other gear in the mainstem Yukon and the feasibility of developing a juvenile salmon monitoring program on the Klondike River (i.e. fyke traps and/or other techniques) to complement the sonar program on that river which is expected to become an ongoing program. Both (mainstem and Klondike) programs are developmental, and are relevant to determining a better understanding of emigration patterns, the movement of different stock groups based on genetic stock index analyses, providing information on the potential impact of a local charter boat, and developing a long-term assessment program that relates adult spawning estimates in year-x to subsequent juvenile abundance and production.

LIFE OF PROJECT: *O**ngoing-developmental.***

ESTIMATED BUDGET:

Project Budget	
	Amount $
Capital	0.00
Operation & Maintenance	18,000
Admin/Indirect/Overhead	44,000
Personnel	
Total Request	62,000
Total In-kind/other	20,000

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-139N-10

PROJECT TITLE: Mayo Area (Stewart River Watershed) Juvenile Chinook Index Program

PROJECT PROPONENT: Na Cho Nyak Dun First Nation (NNDFN)

CONTACT: Dennis Buyck (867) 996-2265 landsmanager@nndfn.com

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:
EDI Environmental Dynamics Inc. Pat Tobler, (867)-393-4882,

PROJECT LOCATION: Project activities will focus on three tributary streams to the Stewart River, near the Village of Mayo. These tributaries are the McQuesten River, Mayo River, and Janet Creek.

PROJECT OBJECTIVES:

Project Objective	R&E Budget Priorities Framework 2006	JTC Plan 2005	R&E 2010 Near Term Priorities
Help improve forecasting ability by developing in-river juvenile abundance index.	Conservation ▪ Stocks ▪ Run Assessment ▪ Research	1.4.5. Improve management and research capability	8. JTC Research Priorities
Use index to assess conservation and/or restoration needs.	Restoration ▪ Stocks ▪ Research	2.3 Identify and implement restoration opportunities	6. Habitat Restoration and Enhancement (*Chinook salmon)
Assist in increasing local capacity and interest in conducting salmon monitoring and research.	Stewardship ▪ Support technical capacity building in communities	3.2 Build and maintain community capacity	5. Community Education and Stewardship

PROJECT SUMMARY:
Currently there are no programs in Yukon to determine the relative strength of the juvenile Chinook in a particular year. Such information could provide Fisheries Managers with a stronger indication of year class strength besides just relying on information from adult returns.

The intent of this project is to provide a juvenile Chinook salmon index for the Stewart River Watershed (Mayo Area). Such an index would assist with forecasting and

management of salmon runs, and may assist in the planning and implementation of stock and habitat restoration and enhancement projects. It would also increase research capabilities for the area, as well as local capacity for salmon technical work in the community of Mayo.

Presently, there is no adult or juvenile index for the area, but past sampling data does exist from previous studies as all three streams provide Chinook spawning and rearing habitat. Project planning would involve a review of the existing literature and data to assist with the standardization of index sampling locations (i.e. data from CRE 19 (04-09 on the Mayo River).

It is proposed that each stream be visited three times throughout the year. From previous experience in the area, July is when capture rates begin to increase, thus sampling is proposed for July, August, and September. Minnow trapping, in accordance with YRP protocols for juvenile salmon collection, is the proposed index sampling method. Long-term sampling locations will be established in each stream, and will be placed in a variety of habitat types representative of the stream (e.g. both main and side channels). Four field days will be allotted for each of the three sampling events. Access to sampling locations will be on foot, assisted primarily by a vehicle or in the case of Janet Creek, by boat.

In addition to the fish sampling data, some environmental monitoring information will be collected (water temp, water level) which could tie in with other R&E and JTC objectives/priorities to do with environmental monitoring and climate change, etc. It would also allow for results to be put in perspective with environmental conditions that may affect sampling success.

Experienced biologists from EDI will work with the NND to undertake project planning, field work, reporting. A goal of the project would include hiring and training of a local First Nation assistant to assist with field work.

LIFE OF PROJECT: This project is proposed to be for a number of years, as is the nature of an index project.

ESTIMATED BUDGET:

Project Budget

	Amount $
Capital	300
Operation & Maintenance	1000
Admin/Indirect/Overhead	2000
Personnel	16500
Total Request	19800

Total In-kind/other

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-140N-10

PROJECT TITLE: Sharing Research Results with Communities and Scientists

PROJECT PROPONENT: Yukon Biodiversity Working Group

CONTACT: Scott Gilbert, Renewable Resources Management Program, Yukon College, Whitehorse, YT. 867-668-8776 sgilbert@yukoncollege.yk.ca

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:
Clint Sawicki, Coordinator, Northern Research Institute, Yukon College, YT 867-668-8772 csawicki@yukoncollege.yk.ca
Ross Goodwin, Manager, ASTIS University of Calgary, Calgary AB, 403-220-4036, rgoodwin@ucalgary.ca

PROJECT LOCATION: *N/A*

PROJECT OBJECTIVES: Our proposal falls under the 2006 "Communications" envelope and would assist with the needs identified under Information Management and Information Sharing. Our proposal would address the Panel's 2010 Near Term Priorities # 5 under Community Education.

PROJECT SUMMARY: The Yukon River Panel has amassed a considerable body of research over the years and our proposal would help share this information with a much wider audience of both regular citizens (through the *Your Yukon* newspaper column) as well as students and scientists (through an existing online biodiversity database). Our group, the Yukon Biodiversity Working Group (BWG) has an open membership and includes government staff, academics, staff and members of land claims' entities, and interested individuals. Our activities are focused on information sharing and we coordinate three ongoing projects: the annual Biodiversity Forum held each spring at Yukon College, a biweekly science column published in the *Yukon News* called *Your Yukon and* the Yukon Biodiversity Database [http://www.aina.ucalgary.ca/yb/].

Your Yukon is a popular science column published by the Yukon News since 1996. It went out of production for a few years when Environment Canada cut off funding but the BWG was able to obtain enough temporary funding to restore it earlier this year. The column is written by professional writers, in plain language, on a variety of Yukon science topics. As an example, the June 19th column described the role of salmon in carrying both nutrients and contaminants upstream: *Fishing Branch salmon deliver the good and the bad.* Available on line at: http://www.taiga.net/yourYukon/col2011.html

We see opportunities to prepare five more columns focusing on R&E projects and give Yukoners more insights to the interesting research carried out along the Yukon River.

The Yukon Biodiversity Database is an online searchable database that any member of the public can use to search for research publications related to Yukon biodiversity. The scope of the database includes all aspects of all living things except humans and the geographical range includes the Yukon and Beaufort Sea. It is a subset of the large ASTIS database run by the Arctic Institute at the University of Calgary. It has professional management provided by the Arctic Institute and world class stature. What it lacks is many of the R&E research reports!

The Yukon Biodiversity Database now holds 6,138 records and is searched up to 100 times per month by users. We have been working diligently to fill in "holes" in the database and one of the areas we would like to address is Yukon aquatic systems. In November, 2005 we added five reports that the Yukon River Panel had supported[2]. A glance at the growing body of R&E funded reports suggests there are many more that could be added although none of them can be currently retrieved or searched using the YRP web site.

We propose that a small group of fish and aquatic scientists, in collaboration with the Executive Secretary of the Yukon River Panel, could provide direction on which R&E reports should be added to the permanent ASTIS database and made accessible through the Yukon Biodiversity Database.

The multi-million dollar research efforts supported by the Yukon River Panel deserve a wider audience and our modest proposal would reap relatively large exposure as well as provide a lasting legacy.

LIFE OF PROJECT: Single year but could be on-going if requested

ESTIMATED BUDGET: *Provide the following information for the proposed fiscal year.*

Project Budget

	Amount $
Capital	0
Operation & Maintenance	0
Admin/Indirect/Overhead	0
Personnel - *Your Yukon - 5 columns @ $440*	$ 2,200.00
Personnel - Citation addition to ASTIS database	$ 3,000.00
Total Request	$ 5,200.00

[2] R&E reports included Pumphrey (1999, 2001 and 2002), Wilson (1997, 1999)

YUKON RIVER RESTORATION AND ENHANCEMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-141N-10

PROJECT TITLE: LSCFN Traditional Salmon Habitat Knowledge Study

PROJECT PROPONENT: Little Salmon/Carmacks First Nation
CONTACT:

Mike Vance Tel: 867-863-5576
Director Fax: 867-863-5710
Nan, Nena Dan Do K'anete E: mike.vance@lscfn.ca
Little Salmon/Carmacks First Nation Box 135,Carmacks, Yukon, Y0B 1C0

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:

Selkirk First Nation – Lands and Resources Department

Fisheries and Oceans Canada, Yukon Region
Habitat Section

PROJECT LOCATION: Yukon River Watershed, as it flows through LSCFN Traditional Territory

PROJECT OBJECTIVES:

This project seeks to begin the groundwork needed for the future of salmon management in Little Salmon/Carmacks First Nation Traditional Territory. The conservation, restoration, enhancement and stewardship envelopes of the Yukon River Panel's Budget Priorities Framework will all be helped in some way with approval of this proposed study.

Conservation -Using the LSCFN River Crew, and the help of expert elders, LSCFN will conduct an assessment of traditional and community knowledge of important salmon habitat throughout the traditional territory.

Restoration And Enhancement - During the River-based traditional habitat assessment, LSCFN River Crews will be asked to check and record areas of future opportunity for both restoration and enhancement projects. These projects will be vetted through a planning process during the winter of 2010/11 to determine which are of greatest priority and have the greatest chance of success. Years two and three will seek to institute these restoration and enhancement projects.

Stewardship - Through the stewardship envelope, the study results, when combined with scientific knowledge will help provide; the basis for education programming for our youth about salmon and their habitat at annual salmon culture camps; provide for the identification of habitat areas which require protection, land and water use guidelines. It is our expectation that this knowledge (once collected and combined with scientific knowledge) will be able to be used today and for our future generations to determine areas of further study, future stock assessment projects (Tatchun Creek wier), potential restoration and enhancement projects, and provide the basis of how to manage salmon habitat for the future.

PROJECT SUMMARY: This project is planned to be divided into the following stages:

Spring 2010 – A workshop will be conducted over two days to discuss how aspects of traditional salmon management knowledge may be brought to bear in the identification of important salmon habitat throughout the Yukon River Watershed in LSCFN Traditional Territory. Experts on specific geographic areas will also be identified through this workshop.

Summer 2010 - River crews (crew supervisor, Elder and two youth) conducting the traditional habitat assessments, will be asked to document stories, identify creeks and record knowledge from expert Elders on important salmon habitat (all life stages with a focus on rearing areas).

Fall/Winter 2010/11 - Compilation of all the collected traditional based information with screening for habitat specific references. At this point in LSCFN will need begin to work with DFO staff to discuss the combination of both traditional and scientific knowledge approaches. A Gap analysis will be conducted, which will identify areas for further study, and potential education, restoration and enhancement projects.

Late Winter/Early Spring 2011 - Another workshop will be conducted with Northern Tutchone Elders and harvesters to discuss project priorities and the study results.

This proposal will build on the traditional governance work that Selkirk First Nation has done over the last 10 years on Salmon Harvest and Fish Camp Doòli, water sampling and habitat assessment work. Northern Tutchone are river people. We have depended on our salmon harvest for generations and generations. Management of fish and wildlife resources have always been an integral component of our way of life. LSCFN in particular have continued to run salmon camps for our children every year. It is with these long-held values kept in the back of our minds that we must find the connection between traditional and scientific management practices in order to keep our salmon and their habitats healthy.

LSCFN recently received confirmation that we have been funded by Northern Strategy Trust to gather what remains of our traditional governance information and combine it with the salmon and fish camp Doòli work to provide basic traditional governance guidance for our future generations in all aspects of our First Nations responsibilities. This proposed project will be a well-timed practical implementation of traditional knowledge that will inform future management of salmon and their habitat in LSCFN Traditional Territory. It is also hoped, that the success of this project and future habitat study, enhancement, management and restoration projects will begin to mend and improve the relationship and trust between LSCFN Citizens and agencies such as Department Fisheries and Oceans and Environment Canada. After all, continuing to have healthy salmon stocks for our future generations to benefit from are shared goals.

LIFE OF PROJECT: Ongoing

ESTIMATED BUDGET:

Capital	**LSCFN**
Operation & Maintenance	**44.8K**
Admin/Indirect/Overhead	**10K**
Personnel	**28.2K**
Total	**$83,000**

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-142N-10

PROJECT TITLE: McQuesten River Sonar Pilot Program

PROJECT PROPONENT: First Nation of the Na-Cho Nyak Dun (NND)
CONTACT:
- Dennis Buyck
  Box 22, Mayo, YT, Y0B 1M0
  Phone: (867) 996-2265 landsassistant@nndfn.com

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS:
- Fisheries and Oceans Canada, Contact Patrick Milligan, phone: (867) 393-6720,
- milliganp@pac.dfo-mpo.gc.ca
- EDI Environmental Dynamics Inc., Contact Pat Tobler, Phone: (867) 393-4882

PROJECT LOCATION:
McQuesten River, Yukon Territory, Canada. Stewart River watershed.

PROJECT OBJECTIVES:
This table lists project objectives while relating them to applicable Panel and JTC documents.

Project Objective	R&E Budget Priorities Framework	JTC Plan	2010 R&E Budget Priorities
Assess the feasibility of operating a sonar unit on the McQuesten River for the purposes of providing in-season estimates for Chinook, and perhaps chum.	Conservation ▪ Stocks ▪ Run Assessment ▪ Escapement Studies	1.1 Monitor or project escapements by Conservation Management Unit	1. Stock Escapement Monitoring of Canadian Tributaries
Continue development of local capacity to conduct fieldwork.	Stewardship ▪ Technical capacity building in communities	3.2 Build and Maintain Community Capacity	4. Community Education and Stewardship

PROJECT SUMMARY:
Although the Stewart River is a significant contributor to the Yukon River Chinook salmon run, there has been to date, no index program within this important system. Numerous investigations to fill this void (weir studies and aerial surveys) have not found a desirable program that can reliably provide an indication of Chinook run strength in the Stewart River watershed. There also has been a local desire to learn more on the significance of the chum run in the Stewart. This sonar feasibility project will attempt to address both of these needs.

The McQuesten River is known to have significant salmon runs. Duncan (1997) reports that in 1901 there were 250 First Nations people hunting, fishing and living in the vicinity of the McQuesten Post. A First Nation fish camp was located near the mouth of the McQuesten and recorded that catches of salmon ranged from 3,334 pounds in 1909 to 14,000 pounds in 1914 (Seigel and McEwen 1984). In 1990, an aerial survey

during favourable flow conditions documented 833 adult Chinook (DFO Stream Files 1992). Chum have been documented in the river on several occasions and it generally thought of as the most notable chum stream in the Stewart River watershed. There has been past desire to establish an index on this stream; however, both aerial surveys and the establishment of a weir would be compromised during moderate to high flows which have been common in this region in recent years. A sonar program represents the only reliable method of establishing an index on this stream.

In the summer of 2010, NND proposes to initiate a pilot program to test the effectiveness of candidate sites for the enumeration of Chinook and chum salmon. This program would include testing the operational effectiveness of a sonar unit on both banks of the river for approximately one week during the peak of the Chinook salmon run and one week during the peak of the chum salmon run. Additionally, the suitability of the site for test netting would be investigated.

The project team for this project will be comprised of two NND technicians and a qualified fisheries biologist with experience operating and setting up a sonar unit.

The proposed project would involve testing the suitability of sonar operation and testing netting of the candidate site identified in 2009 and would involve the following activities:

- A crew of three will investigate potential sites in the lower portion of the McQuesten. Data collection including measurements of river width, bank / flow characteristics, river bathymetry, shoreline slope and substrate will be conducted.
- The crew will set up and operate a sonar unit at the most desirable candidate site(s).
- The crew will enumerate passing salmon during a one week period during the peaks of the Chinook and chum salmon runs (2 weeks total).
- The crew will conduct test netting (drift or set netting) in order to assess the suitability of the site for test netting and to provide species apportionment for the collected sonar data.
- A final report will be compiled and will outline suitability of the site for providing accurate in-season counts using a sonar unit, as well the suitability of associated test netting.

LIFE OF PROJECT:

This is the first year of a pilot project which may lead to a long term stock assessment project.

ESTIMATED BUDGET:

Capital	0
Operation & Maintenance	11,500
Admin/Indirect/Overhead	6,000
Personnel	27,000
Total Request	44,500

REFERENCES CITED:

DFO Stream Files 2002. Fisheries and Oceans Canada Habitat Stream Files. Located at Fisheries and Oceans Canada, Whitehorse, Yukon Territory. Miscellaneous Memos and letters pertaining to the McQuesten River, Reviewed in 2002.

Duncan, J. 1997. *Summary of Streams in the Tr'on dek Hwech'in Traditional Territory: A search for Candidate Streams to Support a Program based on a Klondike Area Central Incubation/Outplanting Facility*. Prepared by Duncan Contracting.

Seigel, N. and C. McEwen. 1984. *A Historical Overview of Fishing in the Yukon*. Prepared for Department of Fisheries and Oceans, Pacific Rim Division. Prepared by Northern Biomes Ltd., Whitehorse, Yukon Territory.

YUKON RIVER RESTORATION AND ENHANCMENT FUND
2010 CONCEPTUAL PROPOSAL

NUMBER: CRE-143N-10

PROJECT TITLE: Little Salmon Chinook Salmon Spawning Grounds Survey

PROJECT PROPONENT: G.Sandone Consulting, LLC

CONTACT: Gene J. Sandone, G.Sandone Consulting, LLC, 4950 W. Clayton Ave., Wasilla, AK 99654. 907-631-6033, gjsandone@gci.net

POTENTIAL PROJECT PARTNERS/ADDITIONAL PARTICIPANTS: Department of Fisheries and Oceans Canada; Whitehorse, Little Salmon Carmacks First Nation, Robert Moar, Little Salmon Carmacks First nation, Box 135, Carmacks, Yukon Y0B 1C0 867-863-5576 ext 262 robert.moar@lscfn.ca; Yukon Delta Fisheries Development Association (YDFDA) • 1016 W 6th Ave Ste 301 Anchorage (907) 644-0326 schultheis@kwikpakfisheries.com

PROJECT LOCATION:
Nearest Community: Carmacks, Yukon, Canada
Watershed: Little Salmon River drainage

PROJECT OBJECTIVES: The specific objectives of this project are to:

5) describe the ASL composition of the Chinook salmon that spawn in the Little Salmon River;
6) collect genetic samples of the Chinook salmon sampled for ASL and
7) provide a conservation and stewardship experience for rural local residents and/or local students.

PROJECT SUMMARY: G.Sandone Consulting, LLC in cooperation with the Little Salmon First Nation, and the Department of Fisheries and Oceans, (DFO) Canada will sample spawned out dead and live Chinook salmon within the Little Salmon River drainage, Yukon, Canada. The goal of the number of fish to sample is 400. The Little Salmon is a tributary to the Yukon River with the confluence with the Yukon River near the village of Carmacks. This project is being proposed as a pilot project with additional streams added to the sampling protocol in subsequent years. The project will commence in August after peak spawning. Two boats will be used to gather spawned out Chinook salmon. Beach seines will also be employed to capture live Chinook salmon.

Three scale samples will be collected from each Chinook salmon for subsequent age determination. .Sex will be determined and recorded based on external characteristics of live fish and possibly examinations of gonads of spawned out dead fish, where necessary. Length (mid-eye to fork of tail) of each Chinook salmon caught will be measured (nearest mm) and recorded. A genetic tissue sample will be collected from all Chinook salmon captured. Each sampled fish will be marked to ensure that fish will not be sampled again. After marking, all fish will be released or returned to the river. All data, including scale and genetic samples, will be provided to DFO biologist in the Whitehorse office at the end of the sampling trip. DFO will age the scales.

Data from this project, in conjunction with ASL data collected at the Eagle sonar site, will allow a comparison of Chinook salmon ASL between these two projects within the same year, and may provide additional insight into the historic ASL information collected from the DFO fish wheels and subsequent carcass sampling information from the historic spawning ground database.

Upon receipt of the salmon ages from DFO, G.Sandone Consulting, LLC, will provide a report on project activities, including comparisons between the ASL collected from captured Chinook salmon at Eagle sonar within the year, and comparisons among years of historic ASL data collected from spawning Chinook salmon within the Little Salmon drainage.

Budget Priority Framework 2007:

Run Assessment: Improve stock ID
Scientifically-based escapement goals (rated 1); Quality of Escapements (rated 1), identify and monitor escapements to key spawning streams(rated 3)
Locate and document productive spawning habitat (rated 1);
Involve and educate users and non users…(rated 1)
Support technical capacity building in communities (rated 2)

US and Canada Yukon River Salmon Committee Joint Technical Committee Plan:

1.1.2 Estimate the stock, biological or other composition of escapements;
1.2.2 Estimate CMU composition of abundance;
3.2.1 Utilize capabilities of communities
3.2.3 Increase capabilities of communities

Budget Priorities for 2010 & Near Term Priorities:

1. Stock Escapement monitoring of the Canadian tributaries;
2. Determine the quality of stock escapement
5. Community Education and Stewardship

LIFE OF PROJECT: Ongoing .

ESTIMATED BUDGET:

Project Budget	Canadian Amount $	US Amount $
Capital	1,000	
Operation & Maintenance	5,000	1,420
Admin/Indirect/Overhead	1,100	0
Personnel	6,000	5,400
Total Request	13,100	6,820
Total In-kind/other		5,400
Total Project Cost	13,100	12,220