

## **Yukon River Panel**

### **Restoration and Enhancement Fund for Yukon River Salmon**

### **Budget Priorities Framework 2006**

(update of 2003 Framework)

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**December 2006**

Yukon River Panel

Restoration and Enhancement Committee

Budget Priorities Subcommittee



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## Executive Summary

The Yukon River Panel's Budget Priorities Framework for the Restoration and Enhancement (R&E) Fund provides guidance for allocating funds among competing proposals to ensure that priority management needs related to restoration and enhancement of Yukon River salmon stocks and habitat are addressed.

The initial R&E Fund Budget Priorities Framework was approved by the Yukon River Panel in December 2003. In November 2006, the R&E Fund Budget Priorities Subcommittee met in Juneau, Alaska, to update the 2003 Framework. The subcommittee considered what had changed since 2003, in terms of restoration and enhancement projects needs, the condition of Yukon River salmon stocks and habitat, or other circumstances that would affect the priorities for use of the R&E Fund.

The subcommittee is recommending to the Yukon River Panel that the Budget Priorities Framework 2006 be approved for use in evaluating proposals for R&E Funds to conduct work beginning in 2008.

The Budget Priorities Framework 2006 consists of:

- Seven categories of management needs (called "envelopes"), in which needs are ranked in descending order of priority;
- General criteria used by the Yukon River Panel for evaluating R&E Fund project proposals;
- A summary of the key themes of the 2006 Framework;
- Information regarding past R&E Fund allocations; and
- A brief discussion of the use of the 2006 Framework to assist the Panel in allocating R&E Funds among competing proposals for 2008 and beyond.

The 2006 Framework groups management needs related to the R&E Fund into seven categories or "envelopes":

- Conservation
- Restoration
- Enhancement

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- Stewardship
- Viable Fisheries
- Communications
- Administration

Management needs are listed and prioritized within each envelope. Needs are ranked or prioritized only *within* envelopes and not *across* envelopes.

In its implementation of the R&E Fund Framework since 2003, the Yukon River Panel has allocated funding among the seven envelopes each year, to allow the Panel to support activities in the different areas of need. However, the Panel has not set a pre-determined “share” of the R&E Fund to be expended within each envelope each year. The Framework is used as a guide for funding decisions, rather than a more prescriptive “recipe” for funding. The R&E Fund Budget Priorities Subcommittee is recommending that the Panel continue using the updated Framework in this way.

Key themes of the 2006 Framework include: the importance of having on-going basic data about Yukon River salmon stocks and habitats; use of a four-step process for assessment, planning, implementation, and evaluation of restoration and enhancement projects; support for restoration and enhancement work that can yield near-term benefits; the importance of stewardship and outreach communications as critical elements for gaining community support; and the importance of a viable fishery in Canada to successful implementation of the Yukon River Salmon Agreement.

The Framework’s appendices include information about the Yukon River Salmon Agreement; background information regarding the status of Yukon River salmon stocks and habitat, and other related budget allocation process and methodologies; and information about implementation of the R&E Fund since 2002.

## Introduction

### **Yukon River Salmon Agreement - Restoration and Enhancement Fund**

The Pacific Salmon Treaty between the United States and Canada was signed in Ottawa on January 28, 1985.

The Yukon River Salmon Agreement between Canada and the United States was initialed in March 2001 and signed in December 2002.

Under the terms of the Yukon River Salmon Agreement, the two countries established the Yukon River Salmon Restoration and Enhancement (R&E) Fund. The R&E Fund was established under an Interim Yukon River Salmon Agreement in 1995. It lapsed in 1998, but was affirmed in the Yukon River Salmon Agreement of 2001.

The purpose of the Restoration and Enhancement Fund is to financially support:

- (a) programs, projects and associated research and management activities on either side of the Alaska-Yukon border directed at restoration, conservation and enhancement of Canadian origin salmon stocks
- (b) programs and projects directed at developing stewardship of salmon habitat and resources and maintaining viable fisheries in the Yukon River in Canada.

Key excerpts from the Yukon River Salmon Agreement relevant to the development of the R&E Fund budget priorities framework are presented in Appendix A.

### **Budget Priorities Framework 2006**

The purpose of the Budget Priorities Framework is to guide allocation of Restoration and Enhancement Fund monies among competing proposals in accordance with the dictates of the Yukon River Salmon Agreement as interpreted by the Yukon River Panel.

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The Budget Priorities Framework was initially developed and approved by the Yukon River Panel in 2003, and guided R&E Fund allocations in 2004-2007.

The 2006 update of the Framework will guide allocations beginning in 2008, and will ensure that the Fund will continue to address the highest priority restoration and enhancement needs. Fund priorities have been updated to address changes since 2003, in light of implementation of R&E Fund and other research and management projects, changes in the condition of salmon stocks and habitats, and other circumstances that may affect research, management and stewardship of Yukon River salmon.

The 2006 Framework includes the following sections:

Section One	Introduction
Section Two	Methodology for developing the Framework in 2003 and updating it in 2006.
Section Three	List of the Yukon River salmon information and management needs, categorized within seven “envelopes.”
Section Four	Criteria used by the Yukon River Panel to guide R&E Fund decisions.
Section Five	Key themes of the Framework.
Section Six	Implementation of the Framework.
Appendix A	Yukon River Salmon Agreement excerpts relevant to the R&E Fund.
Appendix B	Background information on the status of Yukon River salmon stocks and habitats, and related processes with objectives similar to the R&E Fund.
Appendix C	R&E Fund - Near-term Budget Priorities 2005-2007.
Appendix D	Projects funded by the Restoration and Enhancement Fund, 2002-2006.
Appendix E	Participants in development of the 2003 Framework and the 2006 update.
Appendix F	Definitions

## Methodology for Developing & Updating the Framework

### 2003 Framework

Following development of the Canadian Basin Salmon Plan in 2002, the Yukon River Panel embarked on development of a budget priorities framework for the Yukon River Salmon Agreement R&E Fund. The initial Budget Priorities Framework 2003 was developed during a May 21-23, 2003, workshop in Whitehorse, Yukon. Workshop participants are listed in Appendix E.

At the 2003 workshop, participants reviewed a summary of the 1997 Restoration and Enhancement Fund Interim Strategic Plan and the Yukon River Salmon Agreement. They then identified 53 management needs related to salmon stock and habitat. The needs were grouped into seven categories or “envelopes.” The list of management needs within each envelope was ranked in order of importance.

Workshop participants agreed that management needs should be ranked or prioritized only *within* envelopes and not *across* envelopes. They further agreed that R&E Funds should be allocated *among* the Fund envelopes - rather than targeting just one or a few envelopes - to ensure continuing support for salmon stock and habitat conservation and restoration among residents of the Yukon.

Finally, the 2003 workshop participants developed a list of general criteria that would be used by the Yukon Panel to review project proposals and determine which should receive Restoration and Enhancement funding.

The 2003 Budget Priorities Framework was used to guide Fund allocation decisions in 2004-2007. Each year, the Yukon River Panel identified specific near-term priorities for funding, drawn from the Framework (Appendix C).

### 2006 Framework

On November 16, 2006, the R&E Fund Budget Priorities Subcommittee met in Juneau, Alaska, to review and update the 2003 Framework. The subcommittee considered what had changed since 2003 in terms of salmon management needs that can be effectively addressed by the R&E Fund, the condition of Yukon River salmon stocks and

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habitat, or other circumstances that would affect the priorities for use of the Fund. The subcommittee also reviewed the general allocation of funds across the envelopes, from 2002-2006 (Appendix D).

This 2006 Framework presents the recommendations of the subcommittee for updating the priorities for R&E funding. It retains the seven “envelopes” from the initial framework, but updates the lists of management needs and the rankings within each envelope.

In 2006, the subcommittee continues to recommend that:

- Needs should be ranked or prioritized only *within* envelopes and not *across* envelopes;
- Funds should be allocated among the seven envelopes each year, to allow the Panel to support activities in the different areas of need; and
- It is not desirable to pre-determine a “share” of the Fund to be expended within each envelope.

Finally, the subcommittee reaffirmed the general criteria used by the Yukon River Panel to evaluate project proposals.

The subcommittee is recommending that the Budget Priorities Framework 2006 be approved by the Yukon River Panel, for use in evaluating proposals to the R&E Fund to conduct work beginning in 2008.

## Salmon Management Needs

In the Budget Priorities Framework 2006, salmon management needs are grouped into seven major categories, called “envelopes.” The seven Level One envelopes are:

- Conservation
- Restoration
- Enhancement
- Stewardship
- Viable Fisheries

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- Communications
- Administration

Within the Conservation, Restoration and Communications envelopes, needs are further divided into Level Two and Level Three topics. The result is 16 groupings of management needs important to address with R&E Funds.

The full array of envelopes is shown in the following table.

Level One	Level Two	Level Three
Conservation	Stocks	Run Assessment
		Harvest Studies
		Escapement Studies
		Research
	Habitat	Assessment
		Research
Restoration	Stocks	Implementation
		Research
	Habitat	Implementation
		Research
Enhancement		
Stewardship		
Viable Fisheries		
Communications	Information Management and Access	
	Outreach and Information Sharing	
Administration		

Salmon management needs in each envelope, ranked in order of importance, are presented in the following sections of the 2006 Framework.

## Conservation

### Stocks

#### Run Assessment

Needs: Conservation – Stocks – Run Assessment	Rank
Improve information on stock ID and biological composition of run	1
Improve in-season stock specific run size estimates at the mouth of the Yukon River	1
Continue in-season border passage estimates	1
Improve in-season run-size assessment methodology	2
Analysis of spatial and temporal aspects of salmon migration	3

Since 2003, significant progress has been made in collecting information to address the salmon management needs listed in this envelope. However, these are basic, on-going information needs that provide data essential for long-term management of Yukon River salmon.

In many cases, these management needs (especially those involving data analysis) might best be addressed by salmon management agencies, due to their expertise, infrastructure, and/or regulatory responsibility. However, Yukon First Nations and community-based organizations in both Yukon and Alaska have increasingly become involved in data collection projects and, in some cases, interpreting this data. They may be directly involved in this work, as their community-based technical skills advance (an essential stewardship objective), and/or their involvement may be in consultation with technical consultants with related professional skills.

In the 2006 Framework, the first three on-going data needs are ranked as equally high priority. The importance of collecting data about the biological composition of the run (age, sex, size), in addition to stock identification, has been added in this update. Information about the stock's biological composition is needed to build brood year tables, which are the basis for the subsequent establishment of scientifically-based escapement objectives. The second management need listed recognizes that run-size estimates at the mouth of the Yukon River

are important for management. Being able to determine stock specific run-sizes may not be attainable in the near-term, but is a future goal for management and should continue to be listed in this envelope. Thirdly, the importance of continuing on-going, in-season border passage estimates is reiterated.

Improving the in-season run-size assessment methodology (not “projection” methodology) is ranked as a secondary priority. The need for information about the temporal and spatial aspects of salmon migration may be important to analyses of stock rebuilding, as is ranked as a third priority. Projects such as radio telemetry would fit under this management need.

## Harvest

Needs: Conservation – Stocks – Harvest	Rank
In-season stock specific harvest estimates	1
Assess fishing techniques re: their impact on harvest and stock genetics (e.g., selectivity and target species)	1
Examine harvest trends over time in subsistence fisheries	2
Investigate stock specific harvest strategies	3

In-season stock specific harvest estimates are one of the highest priority needs under harvest of stocks in the Conservation envelope. It is important to know what has been harvested in-season, to be able to manage harvests so that the total drainage-wide harvest of Canadian-origin salmon does not exceed the Total Allowable Catch (TAC) and that each party’s harvest remains within the agreed upon harvest share of the TAC.

In the 2006 Framework, assessing the selectivity of fishing techniques is also considered one of the highest priorities. Since 2003, the issue of declining Chinook salmon size on the Yukon River has received significant public, scientific and regulatory attention. The issue of harvest gear selectivity relates to this current and potentially controversial management question.

The need to examine harvest trends over time in subsistence fisheries is ranked as a second priority.

Ranked third is the need to investigate stock specific harvest strategies. This information could be important to

managing a stock that is being rebuilt; it would be essential to carefully manage any harvest technique that might affect the rebuilt run. Alternatively, if a stock is particularly high, this information would help managers determine how to target and make use of increased abundance.

### Escapement Studies

Needs: Conservation – Stocks – Escapement Studies	Rank
Scientifically-based escapement objectives for Canadian-origin salmon.	1
Quality of escapements (i.e., age/size/sex; health)	1
Identify and monitor escapements to key salmon spawning streams/areas (index streams)	2
Inventory of salmon spawning locations throughout the Yukon River drainage	3

One of the highest priority needs under escapement studies of stocks in the Conservation envelope is to establish scientifically-based escapement objectives for Canadian-origin stocks. In the 2006 Framework, the quality of escapement estimates is ranked equally high, as there is strong public interest in knowing the quality of escapements (age, sex and size data). There are major data gaps in this area. This information is vitally important to the construction of brood year tables, which are the basis for the establishment of scientifically-based escapement objectives. The Joint Technical Committee’s (JTC) escapement recommendations address both escapement numbers and quality.

Identification and monitoring of key spawning streams or areas (index streams) is ranked as a second priority. Salmon stream inventory throughout the Yukon River drainage is ranked third. Approximately 75 percent of known spawning streams in the drainage have been inventoried; the balance will be very expensive to inventory and are expected to have relatively low numbers of returning adults.

## Research

Needs: Conservation – Stocks – Research	Rank
Continue to evaluate stock ID or other assessment techniques that best meet objectives	1
Document factors affecting survival, health and mortality at all life stages, including diseases (develop predictive models)	2
Develop and test non-invasive, non-lethal methods of sampling and handling fish	3
Assess out-migrants	4

The most important management need under research related to stocks in the Conservation envelope is to continue to evaluate and use stock identification or other assessment techniques for Yukon River salmon that best meet management objectives. This will be an on-going management need.

Documenting factors that affect the health, survival and mortality of salmon at all life stages is the second priority need. This topic includes understanding the effects of disease and the importance of marine derived nutrients to salmon health and survival, both of which had been listed as separate needs in this envelope in the 2003 Framework. It was noted that this type of research would be very expensive; R&E Funds would not be sufficient, without other funds, to comprehensively conduct the research.

Lower-ranked management needs in this envelope include developing and testing non-invasive, non-lethal methods of handling and sampling fish and assessing out-migrants (out-migrant data can be used to determine natal streams, do DNA analysis, or assess marine survival of tagged fish).

## Habitat

### Assessment

Needs: Conservation - Habitat - Assessment	Rank
Locate and document productive spawning and rearing habitat	1
Environmental monitoring, particularly of key index streams	2
Provide salmon and salmon habitat information to integrated resource management processes	3

Under habitat assessment in the Conservation envelope, the highest ranked need is to locate and document productive spawning and rearing habitat. Once spawning habitat is documented, a high level of protection is afforded under the Canada Fisheries Act.

Environmental monitoring, particularly of key index salmon streams, was identified as the second ranked need. The third ranked need recognizes the importance of accomplishing salmon habitat protection by participating in and providing information to integrated resource management and planning processes. These include pre-development land use planning, and the review and environmental assessment of projects which may affect salmon or salmon habitat.

### Research

Needs: Conservation - Habitat – Research	Rank
Characterize habitats used by different life stages of salmon	1
Investigate the response of habitats used by different life stages of salmon to biophysical change	2
Investigate habitat-based escapement objectives for Canadian-origin salmon.	3
Research effects of salmon on the ecosystem (for example, the importance of salmon as a vector for marine-derived nutrients, or salmon's importance in the food web)	4
Examine linkage of disease, parasites and contaminants to freshwater habitats	5

In the 2006 Framework, this envelope has been refined to focus on research questions related to the interaction of salmon and their habitat. The top ranked priority is to

characterize habitats important to different life stages of salmon, followed by gaining a better understanding of the response of these important habitats to biophysical change.

The third ranked need is for research related to habitat-based salmon production estimates that could contribute to the establishment of scientifically-based escapement objectives. A new research need has been added, and ranked fourth, related to better understanding the role of salmon in the freshwater ecosystem (for example, as a vector for marine-derived nutrients, or an element of the food web). Finally, examining linkages between diseases, parasites and contaminants in freshwater habitats is ranked fifth.

## Restoration

### Stocks

#### Implementation

Needs: Restoration – Stocks – Implementation	Rank
Identify depleted stocks or limits to production (e.g., based on information about historic levels , traditional ecological knowledge, conservation concerns, or habitat “bottle-necks”)	1
Assess feasibility of and prepare plan for restoring depleted stocks	2
Restore depleted stocks	3
Evaluate effects and success of restoration efforts	4
Conduct emergency response projects (e.g., harvest displacement, etc.)	5

The 2006 Framework includes a four-step process for accomplishing restoration of depleted stocks: (1) identifying stocks that are depleted or are facing a known limit to their production, (2) assessing the feasibility of restoring the stock, (3) conducting the restoration, and (4) evaluating the effectiveness of the restoration project.

The 2006 Framework views harvest displacement or similar projects as an emergency response, not as a project that would normally be funded as an R&E Fund priority. For that reason, it is ranked lowest in this envelope.

## Research

Needs: Restoration – Stocks – Research	Rank
Develop and test restoration techniques	1
Assess "natural" levels of wild stocks	2

The 2006 Framework retains the two research needs related to stock restoration listed in the 2003 Framework.

## Habitat

### Implementation

Needs: Restoration - Habitat - Implementation	Rank
Restore fish access to spawning and rearing habitat	1
Identify potential spawning and rearing habitat restoration sites	2
Assess feasibility and prepare plan for habitat restoration	3
Restore and/or improve quality of spawning and rearing habitat	4
Evaluate effects and success of restoration efforts	5

As a first priority, the 2006 Framework lists restoring fish access to existing spawning and rearing habitat when it is not accessible, to ensure the use of all productive habitat.

To restore impaired spawning and rearing habitat, the Framework includes a four-step process (shown as ranks 2 through 5 above: (1) identifying potential spawning and rearing habitat restoration sites, (2) assessing the feasibility of and planning for habitat improvement/restoration, (3) conducting the habitat improvement/restoration, and (4) evaluating the effectiveness of the restoration project.

## Research

Needs: Restoration - Habitat – Research	Rank
Develop and evaluate habitat restoration techniques	1
Determine the range of natural habitat carrying capacity of salmon habitats to be restored	2

The top priority need under habitat research in the Restoration envelope is to develop and evaluate restoration techniques. The second is to determine the range of natural habitat carrying capacity of salmon habitats to be restored, as this information would contribute to the evaluation of the effectiveness of the habitat restoration project.

## Enhancement

Needs: Enhancement	Rank
Research and investigate habitats suitable for salmon range extension in existing systems, or that would benefit from habitat enhancement to expand wild stock productivity	1
Assess feasibility and prepare plan for habitat enhancement	2
Conduct habitat enhancement project	3
Evaluate effects and success of habitat enhancement project	4

The 2006 Framework focuses on enhancement activities that would extend salmon range in existing systems or enhance salmon habitat to expand wild stock productivity beyond its natural production levels.<sup>1</sup> The Framework includes a four-step process for this type of habitat enhancement: (1) identifying potential habitats suitable for range extension or other habitat enhancement, (2) assessing the feasibility of and planning for habitat enhancement, (3) conducting the habitat enhancement project (including ensuring access to and quality of enhanced habitat), and (4) evaluating the effectiveness of the project.

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<sup>1</sup> It is important to note that the Yukon River Salmon Agreement finds that “Given the wild nature of the Yukon River and its salmon stocks, and the substantial risks associated with large-scale enhancement through artificial propagation, such [large-scale] enhancement activities are inappropriate at this time” (Restoration and Enhancement Fund, Attachment C, Annex IV, Chapter 8 of the Pacific Salmon Treaty, Appendix 1.)

## Stewardship

Needs: Stewardship	Rank
Involve and educate users and non-users in communities to increase their desire to maintain and protect salmon stocks and habitat	1
Support technical capacity building in communities	2
Support community development of individual watershed-based restoration and enhancement plans	3
Gather historical and traditional knowledge/data	4

Four management needs are identified in the Stewardship envelope. Highest ranked is the need to involve and educate users and non-users in communities to increase their desire to maintain and protect salmon stocks and habitat. The second ranked need is the need for technical capacity building in communities. Third is the need for community development of individual watershed-based restoration and enhancement plans or equivalent documents, and fourth, the need to gather historical and traditional knowledge and data.

The need for community-developed watershed-based plans does not imply a large-scale comprehensive multi-stakeholder watershed planning process. The plans may be more focused on restoration or enhancement projects within a watershed context, or may be a record of restoration, enhancement and stewardship activities within a watershed.

## Viable Fisheries

Needs: Viable Fisheries	Rank
Maximize the value of the Canadian harvest to make fisheries viable	1

The 2006 Framework identified one need under the Viable Fisheries envelope: to maximize the value of Canadian harvest to make fisheries viable. This is unchanged from the 2003 Framework.

## Communications

In the 2006 Framework, the Communications envelope has been divided into two levels:

- Information Management and Access
- Outreach and Information Sharing

<b>Needs: Communications – Information Management and Access</b>	<b>Rank</b>
Manage data storage, retrieval capabilities and data sharing	1
Coordinate sharing of fish tissues and other biological samples	1
Manage reports, to facilitate information sharing with other research initiatives, the Yukon River Panel and the public	1
Develop a map-based inventory of R&E Fund projects with abstracts and categorized by type of project.	1

The Communications envelope, information management and access level, contains four needs related to improving management of data, samples, reports and project-specific information. These needs are equally ranked as high priority needs.

<b>Needs: Communications – Outreach and Information Sharing</b>	<b>Rank</b>
Conduct public outreach and education projects for people who fish on the river, youth, communities, and the public to increase their desire to maintain and protect salmon stocks and habitat	1
Conduct outreach projects that promote the integration of scientific and traditional knowledge	2

The Communications envelope, outreach and information sharing level, contains two needs. The first is to increase the use of public outreach and education projects to build support for maintaining and protecting salmon stocks and habitats. These types of communication projects are companions to stewardship projects, which are conducted primarily in Canadian Yukon River communities. The second need is to continue to encourage integrating scientific and traditional knowledge related to Yukon River salmon, which is a guiding principle of the Yukon River Salmon Agreement.

## Administration

Needs: Administration	Rank
Define clear accountability measures for the complete life cycle of each project that has received R&E Funds	1
Evaluate R&E Fund Program (every 5 years)	1
Conduct annual review of the effectiveness of the administration of the R&E Fund Program	1
Support Panel Communications Committee work (for example, Panel education and information exchange, coordination with other research initiatives, teleconferences, etc.)	1

Needs within the Administration envelope includes four needs, all ranked as high priorities. These needs are: accountability measures for R&E Fund projects, evaluation of R&E Fund expenditures every five years, an annual review of the effectiveness of the administration of the Fund, and the on-going work of the R&E Fund's Communication Committee. In the 2006 Framework, the work of the Communications Committee has been moved into the Administration envelope, as it is a necessary and routine aspect of the Yukon Panel's affairs, including R&E Fund program implementation, requiring ongoing Fund support.

## Criteria for Evaluating Project Proposals

The Yukon Panel uses the following general criteria to evaluate project proposals for R&E funding.

1. Cost effectiveness.
2. Cost efficiency.
3. Clear, achievable objectives.
4. Does it advance our work toward filling this need?
5. Feasibility.
6. Capability: previous work achieved.
7. Support in the community.
8. Appropriate methodology.
9. Value of the product: priority within the envelope.
10. Timeliness.
11. Location.
12. Multiple benefits.
13. Background research: literature, project context.
14. Does the final product meet the objectives?

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In applying these criteria and reaching funding decisions, the Panel also considers the recommendations of the Joint Technical Committee, which applies criteria that specifically evaluate the technical merits of each proposal.

The JTC recognizes five “Essential Elements” in its technical review of R&E conceptual and investigative proposals that directly address the applicability of the project to Panel and JTC goals, the technical merit of the proposal and the ability of the proponents to achieve their objectives cost effectively. These essential elements are derived from the general criteria outlined by the Panel in the budget priorities framework and are posed as questions.

1. Does the project address a priority objective from the budget priorities framework, the short term priorities list or the JTC plan?
2. Are the objectives clear and achievable?
3. Does the proposal employ appropriate methodology designed to address each objective?
4. Can the project be completed within the proposed budget and is the budget reasonable?
5. Are the proponents capable of successfully completing the project?

Additional specific technical considerations may be employed by the JTC in their evaluation of each proposal.

The R&E Fund Budget Priorities Framework recognizes that some of the needs identified in the envelopes may be best addressed by an agency, due to infrastructure, expertise and regulatory responsibility. Agency proposals will be evaluated using the same criteria as non-agency proposals.

## Key Themes of the 2006 Framework

Key themes of the 2006 Framework include:

- It is important to have on-going, basic data about stocks and habitats that can be applied in the effective management of Yukon River salmon runs and in planning for and conducting stock and habitat restoration and enhancement projects.

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- The R&E Fund should prioritize projects with near-term benefits for salmon stocks and habitat, over inventories, assessments, research studies and evaluations that would not directly contribute to projects that benefit stocks or habitat in the near-term.
- A four-step approach should be used to accomplish stock and habitat restoration and enhancement work: (1) assess areas where projects would likely be effective, (2) conduct feasibility analysis and planning, (3) conduct the project, and (4) evaluate the project's outcomes and effectiveness.
- Gains achieved in better understanding the biology of Yukon River salmon will manifest themselves in better management of the fishery. Increased knowledge will help to refine management and increase selectivity.
- Some restoration work has already been done and more is needed. This work can be accomplished immediately and should generate near-term benefits. Although none of the projects funded within the 2002 to 2004 period fall directly within the enhancement envelope, a number of the funded projects have relevance to future enhancement initiatives.
- Stewardship is a critical element for gaining community support. Stewardship initiatives are required in the near-term to ensure continued and growing support for salmon stock and habitat conservation and restoration. The full pay-off for investment in stewardship will be realized in the long-run.
- A viable fishery in Canada is essential to maintain support for the Yukon River Salmon Agreement. To ensure a viable fishery, the value of the harvest should be maximized.
- Public outreach to people who fish on the river, communities, youth, and the general public is also an important tool for gaining support for salmon and habitat.

## Past Restoration and Enhancement Fund Allocations, by Envelope

The following table shows the general allocation of Restoration and Enhancement Funds by envelope in 2002-2006, based on actual expenditures. Each project funded by the R&E Fund program is assigned to only one envelope, based on the primary purpose for which it was funded by the Yukon Panel.

Envelope	Actual R&E Fund Allocations by Envelope, by Year (as percent of total R&E Fund allocated)				
	2002	2003	2004	2005	2006
Conservation	55	54	56	50	50
Restoration	26	9	7	7	5
Enhancement	0	0	0	0	0
Stewardship	16	29	24	29	28
Viable Fish	2	3	4	10	10
Communication	1	5	9	4	7
<b>TOTAL</b>	100	100	100	100	100
* Communication involved R&E funded projects as well as initiatives funded directly by the Panel					

The Administration envelope is not reflected in this allocation table. Administrative functions receive a set allocation each year, separate from the competitively allocated R&E Funds.

In 2002 and 2003 the in-season management teleconferences (project numbers URE-11-02 and URE-11-02) were evaluated competitively with other Restoration and Enhancement Fund project proposals. However, these teleconferences were funded directly by the Panel in the 2004 to 2006 period.

The annual allocation for communication initiatives funded directly by the Panel (i.e. not evaluated competitively) within the 2003 to 2006 period was \$48,100, \$110,000, \$51,000 and \$95,600, respectively; these allocations include funding for the in-season management teleconferences from the 2004-2006 period as well as funding for other communication initiatives within the 2003 to 2006 period.

## Use of the Budget Priorities Framework

Once approved by the Yukon River Panel, the Budget Priorities Framework 2006 would be used to allocate the R&E Fund for projects beginning in 2008.

The R&E Fund, Budget Priorities Subcommittee, recommends that the Framework serve as a guide for funding decisions. It has not been the case, nor is it recommended at this time, that the Panel assign a specific dollar amount or proportion of the fund to the different envelopes in the Framework. The Framework is offered as a guide for funding decisions, rather than a more prescriptive “recipe” for funding.

It is recommended that the R&E Fund Committee use the 2006 Framework to derive focused near-term priorities each year, and issue an annual call for proposals to elicit projects that will focus on near-term priorities. This will ensure that the needs identified in the Framework are addressed over time. It is also recommended that the call for proposals provide clear information about the criteria that will be used by the Joint Technical Committee and by the Yukon River Panel to evaluate proposals and make funding decisions.

To track implementation of the 2006 Framework, each project proposal that receives R&E Funds should be assigned to a single envelope and information need. When a project will accomplish more than one purpose, it should be assigned by the *primary purpose for which the Yukon River Panel approved its funding*. (For example, a project funded primarily to achieve a stewardship objective may also accomplish some habitat restoration, but would be assigned to the Stewardship envelope). It is recommended that the R&E Fund Technical Subcommittee have a role in assigning each project that receives funding to an envelope and information need.

As this Framework is implemented, the R&E Fund Committee should record issues that arise, methods used to streamline its use, and other improvements, for consideration in future updates.

## Appendix A: The Yukon River Salmon Agreement

Appendix A summarizes the key points of the *Yukon River Salmon Agreement* pertinent to the development of a budget priorities framework for the R&E Fund.

Paragraph 1 of Chapter 8 of the Pacific Salmon Treaty states:

The Parties recognize the uniqueness of the Yukon River and its salmon fisheries; having as their principal goal to rebuild and conserve stocks and provide benefits to the fisheries of both countries on this river system, which means the maintenance in both countries of viable fisheries on the Yukon River.

With regard to Habitat, Paragraph 30 states:

In light of the benefits they receive from the salmon originating in their portions of the Yukon River, the Parties agree that:

- a. Salmon should be afforded access to and from, and use of, existing migration, spawning and rearing habitats.
- b. Respective water quality standards should be maintained and enforced.
- c. Productive capacity of the salmon habitat on both sides of the Alaska-Yukon border should be maintained in order to achieve the objectives of this Chapter.

With regard to Restoration and Enhancement, Paragraph 32 of the Yukon River Salmon Agreement states:

Unless the Parties agree otherwise, on the basis of recommendations by the Yukon River Panel, the primary objective of:

- a. Restoration and conservation programs and projects shall be to increase spawning escapements in areas requiring restoration; and
- b. Enhancement projects shall be to increase harvests taking into account the conservation of wild stocks.

Paragraph 34 states:

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The Principles and Guidelines for operation of the Yukon River Restoration and Enhancement Fund are set out in Appendix 1 to Attachment C.

Paragraph 1 of Attachment C reads:

The Parties hereby establish the Yukon River Salmon Restoration and Enhancement Fund, hereinafter referred to as “the Fund”, to be managed by the Yukon River Panel which shall be used for the following purposes:

- a. Programs, projects and associated research and management activities on either side of the Alaska-Yukon border directed at the restoration, conservation and enhancement of Canadian origin stocks;
- b. Programs and projects that are directed at developing stewardship of salmon habitat and resources and maintaining viable salmon fisheries in the Yukon River in Canada.

Paragraph 2 states:

Programs, projects and activities shall be funded based on the Principles and Guidelines set out in Appendix 1 hereto.

Three such Principles are stated in Appendix 1.

1. Restoration, conservation and enhancement programs and projects shall be consistent with the protection of existing wild salmon stocks and the habitats on which they depend.
2. Given the wild nature of the Yukon River and its salmon stocks, and the substantial risks associated with large-scale enhancement through artificial propagation, such enhancement activities are inappropriate at this time.
3. Artificial propagation shall not be used as a substitute for effective fishery regulation, stock and habitat management or protection.

The remainder of Appendix 1 contains six Guidelines.

4. The priorities for implementing programs and projects using monies disbursed from the Fund

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shall be in this order with regard to Attachment C, paragraph 1 a):

- (1) Restoring habitat and wild stocks;
  - (2) Conserving habitat and wild stocks;
  - (3) Enhancing habitat; and
  - (4) Enhancing wild stocks.
5. Programs and projects using monies disbursed from the Fund with regard to Attachment C, paragraph 1 b) shall be limited to:
- (1) encouraging habitat stewardship, conservation and reclamation in activities and industries that impact salmon and their habitats; and
  - (2) maintain viable salmon fisheries in the Yukon River in Canada, thus establishing incentives for the conservation and stewardship of salmon and their habitats. Funding for commercial salmon fishing and processing shall be limited to the development of infrastructure, capital equipment expenditures and, in years when no commercial processing occurs, the maintenance of processing infrastructure.
6. Programs and projects shall be evaluated by the Yukon River Panel based on a Yukon River basin wide stock rebuilding and restoration plan to be developed and updated periodically by the Panel. As an integral part of restoration, habitat conservation and enhancement planning, the Panel shall undertake careful assessment and inventory of wild stocks, their health, habitat and life history.
7. The Yukon River Panel shall apply the most stringent of the fish genetics and fish disease policies of the management entity of either Party to restoration or enhancement programs and projects.
8. Following JTC evaluation of proposed programs and projects, each Party shall provide an opportunity for public comment and review of the proposed programs and projects, along with the JTC evaluation.
9. The Yukon River Panel shall decide which programs and projects to fund based on these guidelines, the JTC evaluation and any public comments received.

## Appendix B: Background

Appendix B provides background information on the status of Yukon River Canadian-origin salmon stocks and their habitats and related processes with objectives similar to the R&E Fund.

### Status of Yukon River Canadian-Origin Salmon Stocks and their Habitats

#### Status of Stocks

The material presented in this section is drawn from three documents.

- *Yukon River Comprehensive Salmon Plan for Alaska, 1998.*
- *Integrated Fisheries Management Plan for Chinook and Chum Salmon in the Yukon River June 1, 2002 - May 31, 2003.*
- U.S./Canada Yukon River Joint Technical Committee. 2006. *Yukon River salmon 2005 season summary and 2006 season outlook.* Alaska Department of Fish and Game, Regional Information Report No. 3A06-03, Anchorage.

The status of salmon stocks is best assessed over several cycles to account for variability in year class productivity. In the Yukon River, one cycle is six years for Chinook salmon and four years for chum salmon.

#### Chinook Salmon

After several cycles of excellent returns in the 1970's, Canadian-origin Yukon River Chinook salmon spawning escapements declined throughout most of the 1980's. A plan to address the decline in spawning escapement and to embark upon a re-building plan was negotiated and included in the Interim Yukon River Salmon Agreement (1995).

The re-building plan called for a Chinook salmon spawning escapement stabilization goal of 18,000 upper-river origin stocks (not including stocks in the Porcupine River drainage) to halt the decline, and the steps necessary to increase escapements to the long-term goal for rebuilt

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stocks of 33,000 to 43,000 spawners. In 1996, the Panel agreed to an interim re-building target of 28,000 spawners for 1996-2001. This target was exceeded in 1996 and 1997 but escapement fell to 16,750 in 1998, 11,362 in 1999, and 11,344 in 2000.

Possible explanations for these low returns include low water levels in the upper Yukon, an increased prevalence of what may be an emerging disease, *Ichthyophonus hoferi*, and poor marine survival. There has been some improvement in Canadian spawning escapements since 2001 which are to some extent attributable to harvest sharing agreements and conservative fishery management practices in Alaska and Canada.

Under the Yukon River Salmon Agreement Restoration and Enhancement Fund, forty-four programs received funding in 2006, including a Chinook salmon fish wheel selective fishing study, a chum salmon tagging program, two Chinook salmon sonar counting programs, an enumeration weir, DNA analyses, restoration programs, a number of community stewardship programs and two viable fisheries programs. These projects covered a similar range of activities as in 2002 to 2005. See Appendix C for details.

## Chum Salmon

Yukon River chum salmon appear to have experienced a decline in overall run strength and spawning escapement over the same time frame as Yukon River Chinook salmon.

The Interim Yukon River Salmon Agreement included a re-building plan for chum salmon that set targets of >80,000 spawners in the upper Yukon River and 50,000 to 120,000 spawners to the Fishing Branch River within the Porcupine drainage. This plan was to be accomplished over three cycles and completed by 2001. Upper Yukon chum salmon run sizes consistently failed to meet preseason expectations and rebuilding targets were not achieved for the 1998 to 2001 returns. However, the 2002 to 2005 upper Yukon chum salmon returns exceeded minimum targets set by the Yukon River Panel (Table1).

Within the Porcupine drainage, the lower end of the Fishing Branch escapement target (50,000) was achieved only three times within the 1992 to 2002 period (Table 1), although stabilization goals set in 2003 (>15,000), 2004 (>13,000) and 2005 (>28,000) were achieved (Table1).

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As with Chinook salmon, lower overall run strength and low spawning escapement has been attributed primarily to a decline in marine survival.

Border and spawning escapement, and annual spawning escapement targets, for Chinook and chum salmon are presented in Table 1.

Year	Chinook Salmon			Chum Salmon				
	Border Escapement	Spawning Escapement	Spawning Target	Border Escapement	Spawning Escapement	Minimum Target	Fishing Branch Weir	Weir Target
1992	43,185	25,382	>18,000	67,692	49,082	>51,200	22,517	>50,000
1993	45,027	28,558	>18,000	42,165	29,743	>50,500	28,707	>50,000
1994	46,680	25,910	>18,000	133,712	98,358	>65,900	65,247	>50,000
1995	52,353	32,265	>18,000	198,203	158,092	>80,000	51,971	>50,000
1996	47,955	28,409	>28,000	143,758	122,429	>65,000	77,278	>50,000
1997	53,400	37,683	>28,000	94,725	85,439	>55,000	26,959	>50,000
1998	22,588	16,750	>28,000	48,047	46,305	>90,000	13,564	>50,000
1999	23,716	11,362	>28,000	72,188	58,682	>80,000	12,904	>50,000
2000	16,173	11,344	>28,000	57,978	53,742	>80,000	5,053	>50,000
2001	52,207	42,438	>18,000	38,769	33,851	>80,000	21,669	>50,000
2002	49,214	40,145	>28,000	104,853	98,695	>60,000	13,563	>50,000
2003	56,929	47,486	>25-28,000	153,656	142,683	>65,000	29,519	>15,000
2004	48,111	37,165	>28,000	163,625	154,080	>65,000	20,274	>13,000
2005	42,245	31,565	>28,000	451,477	437,746	>65,000	121,413	>28,000
<b>1995-2004 Average</b>	<b>42,265</b>	<b>30,505</b>		<b>107,580</b>	<b>95,400</b>		<b>27,275</b>	

Table 1: Border escapement and spawning escapement estimates for upper Yukon River Chinook and chum salmon, and Porcupine River chum salmon index escapement counts (Fishing Branch weir): 1992 to 2005, with average for 1995-2004.

Yukon River salmon are harvested in several mixed stock fisheries in Alaska and Yukon. Individual sub-basin productivity rates would be helpful when developing a new re-building strategy. The need for sub-basin productivity rates includes stocks of American origin fished in any lower river fishery that includes Canadian-origin stocks.

The focus of fishing arrangements in the Yukon River Salmon Agreement is abundance-based management, in which resource conservation (i.e., escapement) is paramount and harvesting fluctuates with abundance. The full implementation of abundance-based management internationally awaits the development of improved in-season run abundance estimation and stock identification techniques.

Chinook salmon border escapement estimates from the joint U.S./Canada sonar program at Eagle, Alaska, conducted in 2005 and 2006 are substantively higher than the Canada Department of Fisheries & Oceans (DFO) border escapement estimates derived from a tagging program. After simultaneously conducting both programs for a few years, the JTC will likely adopt one of these programs as the preferred method of estimating the Chinook salmon border escapement. Adoption of the border sonar estimates will require revision of the Canadian escapement goals.

The chum salmon border escapement estimate from the joint U.S./Canada sonar program at Eagle, Alaska, conducted in 2006 was not substantively higher than the Canada DFO border escapement estimate derived from a tagging program. After simultaneously conducting both programs for a few years, the JTC will likely adopt one of these programs as the preferred method of estimating the chum salmon border escapement.

## Status of Habitat

As pointed out in the *Yukon River Comprehensive Salmon Plan for Alaska*, “Yukon River salmon stocks have generally remained healthy primarily because of undisturbed spawning, rearing and migration habitat.” The major threats to salmon habitat continue to be mining, logging and road building.

The *Yukon River Canadian Basin Salmon Plan* (2003) supported the Alaskan findings, explaining in detail the status of habitat in the Yukon Basin in Canada. In terms of number of streams affected, the greatest threats were from placer mining (less than one stream in ten), forestry, roads and municipalities (each less than one stream in thirty).

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At present, development of a new regime for the management of the Yukon's Placer industry is in progress and should be fully implemented by the next update of the Budget Priorities Framework. Additionally, Canada's Federal Contaminated Sites Action Plan is funding the reclamation of four abandoned quartz mines that pose threats to specific salmon streams. Finally, salmon and salmon habitat have been fully considered in recent municipal and regional land use plans.

The most pressing need is to maintain and restore access to existing habitat or to enhance new habitats by providing access. This need can be met in various ways. Beaver dams can be breached to allow upstream passage by adults. Juvenile Chinook salmon can be captured downstream of beaver dams or other obstructions and released into upstream habitats to rear and over-winter. Access to areas above waterfalls would require the construction and operation of fish ladders or other structures.

New information on the effects of climate change on land and water has become available since 2003. Hydrologists have documented changes in stream flows and foresters have documented landscape level vegetation changes, particularly in the southwest Yukon. Flows in some streams are declining. The risk of extirpation of some spawning stocks of Chinook salmon is increasing.

Geomorphologists have documented landslides of various types related to the thaw of either shallow- or deep permafrost. Most of the failures result in downstream effects to salmon habitat as sediment is deposited in and moves through the systems.

Changes in water temperatures of the Yukon River and its tributaries have not been well documented. There is a risk that certain habitats may be affected, perhaps significantly, including adult upstream migration habitat.

## Related Processes

**NOTE: This section will be reviewed and updated prior to publication of the final 2006 Framework.**

Some related processes with similar objectives and methodologies are briefly described:

- JTC Research Plan.
- Canadian Basin Yukon River Salmon Plan.
- Pacific Salmon Treaty R&D Model.

## The JTC Research Plan

The following section is based on the JTC Research Plan.

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The Joint Technical Committee (JTC) of the Yukon River Panel began development of a strategic plan for salmon research in the Yukon River drainage in 2002.

The research plan is intended to guide the use of funds made available from various sources towards meeting priority information needs. The research plan is the first basin-wide effort to include all aspects of research including but not limited to restoration and enhancement.

The JTC defined a mission statement for its research plan.

Consistent with the Yukon River Salmon Agreement and relevant policies, this plan will provide guidance for the management, protection, restoration, and sustainable use of Yukon River drainage salmon stocks and their habitats in a healthy ecosystem context through cooperative and collaborative application of traditional and local knowledge and scientific research.

Lack of knowledge causes a great deal of scientific uncertainty about salmon abundance, stock structures, migratory timing and population dynamics. Harvests and escapements of most salmon stocks in recent years are at less than desired levels and some habitats altered by human activities have a reduced ability to support salmon. Why salmon run strength in the Yukon River has declined is unclear. Reductions in marine survival are suspected.

The JTC used the Analytical Hierarchy Process (AHP) to develop the research plan. The AHP is a tool for facilitating decision-making by structuring a problem into levels creating a hierarchy.

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The AHP encourages participants in the planning process to state their judgments of preference or importance in numerical, verbal or graphical form. Options in the form of projects or actions are ranked according to weights of preference or importance assigned to the goals, objectives and issues the option addresses.

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The JTC Research Plan is similar to the Restoration and Enhancement Fund budget priorities framework in that both seek to identify and priorities work required to achieve goals related to healthy Yukon River salmon stocks and habitat and their management.

The JTC Research Plan is “intended to guide the use of funds made available from various sources” but the budget priorities framework focuses solely on the Restoration and Enhancement Fund.

The JTC Research Plan includes “all aspects of research including but not limited to restoration and enhancement.” The scope of Restoration and Enhancement Fund spending, in contrast, is much narrower than the JTC Research Plan. The Research Plan includes needs, projects and activities outside the scope of the Restoration and Enhancement Fund. Conversely, needs identified in the budget priorities framework may not be included in the JTC Research Plan.

Similarly, the criteria (i.e., goals, objectives) used to prioritize needs, projects, or activities in the JTC Research Plan are more detailed and wider reaching than those in the budget priorities framework. The latter are narrowly focused on restoration and enhancement (and related) activities.

Finally, the JTC Research Plan used a more formal, explicit methodology to identify needs and goals and to prioritize the needs in terms of the goals. The budget priorities framework, in contrast, used an informal approach of bilateral comparisons of needs within groups based on consensus among workshop participants.

## Canadian Basin Salmon Plan

The following excerpt is taken from the Yukon River Canadian Basin Salmon Plan (December 2002).

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In 2002, the Department of Fisheries and Oceans, in consultation with the Yukon Salmon Committee, began a series of workshops to define requirements needed to create a Salmon Management Plan.

A workshop was held in May 2002 to identify Yukon River Canadian Basin salmon streams and to catalogue information about salmon spawning and rearing in those streams—using traditional, local and scientific knowledge—and about salmon habitat.

Recent escapements, maximum historical escapements and escapement targets were recorded for each salmon stock identified in the May 2002 workshop. Existing and potential threats to salmon habitat for those stocks were recorded.

Over the summer of 2002, designated workshop participants drafted papers on salmon management needs in twelve subject areas.

- Stock Status
- Stock Specific Management Capability
- Community Stewardship
- Non-Fishing Mortality
- Harvest Monitoring
- Habitat Status and Utilization Indices
- Information Systems
- Integrated Resource Planning & Management
- Viable Fisheries
- Research & Development
- Efficiency & Cost-Effectiveness
- Habitat Management

This work was completed in October 2002.

In November 2002, a sub-committee of the Yukon Salmon Committee met to review the findings of the salmon management information gap papers. The sub-committee first identified goals and objectives that guide manage-

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ment of Yukon River salmon. The sub-committee identified three over-arching goals and objectives:

- Conservation: concerned with existing and target salmon populations.
- Sustainable Use: concerned with targeted fisheries of any sort.
- Improved Decision-Making: concerned with sharing information collected so that fish stocks, fisheries and fish habitat can be better managed.

The sub-committee identified Canadian Policy and Legislative Tools that are the instruments by which the over-arching goals and objectives can be achieved, and restated the over-arching goals in terms relevant to the Yukon Territory and the Umbrella Final Agreement. This work is summarized in the table below.

The final step for the sub-committee was to rank salmon management needs in terms of the goals and objectives. A simple rating system was developed by the sub-committee. Within each subject area, each salmon management need was scored against each goal on a scale of 1-5 (1=low; 5=high). The three scores were summed to yield a total score for each salmon management need in each subject area. Salmon management needs in each subject area were ranked in descending order by score; those needs with the highest scores had the highest priority.

An important component of this work was a review of the ranked needs by the sub-committee. The scoring process was a tool to derive a first cut at ranking salmon management needs. Ultimately, the final ranked list of needs was determined by consensus of sub-committee members.

In late November, the results of the sub-committee's work were presented to the Yukon Salmon Committee for review. The Yukon Salmon Committee carefully reviewed the work of the sub-committee and made changes based on consensus of workshop participants.

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Overarching Objectives	Canadian Policy/Legislative Tools to Achieve Overarching Objectives	Yukon/UFA Goals & Objectives
Conservation	<ul style="list-style-type: none"> <li>▪ UFA</li> <li>▪ Fisheries Act</li> <li>▪ Wild Salmon Policy (draft)</li> <li>▪ Habitat Management Policy</li> <li>▪ Biodiversity Policy</li> <li>▪ Eco-System Management</li> <li>▪ SARA (draft)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Conserve habitat and wild stocks</li> <li>▪ Restore habitat and wild stocks</li> <li>▪ Enhance habitat and wild stocks</li> <li>▪ Meet conservation objectives of the Yukon River Salmon Agreement</li> </ul>
Sustainable Use	<ul style="list-style-type: none"> <li>▪ UFA</li> <li>▪ Aboriginal Fisheries Strategy</li> <li>▪ Salmon Allocation Policy</li> <li>▪ Selective Fishing Policy</li> <li>▪ Catch Monitoring Policy</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide for Basic Need Allocations</li> <li>▪ Meet obligations under International harvest sharing agreements (chum; Chinook)</li> <li>▪ Provide for viability of all fisheries</li> </ul>
Improved Decision Making	<ul style="list-style-type: none"> <li>▪ National Policy on Sustainable Development</li> <li>▪ UFA &amp; Final Agreements</li> <li>▪ Decision-Making Policy</li> <li>▪ National Habitat Policy</li> <li>▪ Aboriginal Fisheries Strategy</li> <li>▪ National Stewardship Agenda</li> <li>▪ National and regional data management initiatives</li> <li>▪ Yukon Placer Authorization</li> </ul>	<ul style="list-style-type: none"> <li>▪ Refine implementation of UFA (Yukon Salmon Committee; Renewable Resources Councils)</li> <li>▪ Improve/Refine IFMP Working Groups Process</li> <li>▪ Support Yukon Panel</li> <li>▪ Support Yukon Joint Technical Committee</li> <li>▪ Develop Stewardship &amp; Build Capacity</li> <li>▪ Store and share data efficiently</li> <li>▪ Improve coordination amongst parties and agencies</li> <li>▪ Improve decision-making by Yukon Placer Committee</li> </ul>

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The Canadian Basin Salmon Plan is similar to the Restoration and Enhancement Fund budget priorities framework in that both seek to identify and priorities work to achieve goals related to healthy Yukon River salmon stocks and habitat and their management.

The Canadian Basin Plan has a broader scope than the budget priorities framework, as indicated by the list of twelve subject areas in which salmon management needs were identified.

The Canadian Basin Plan draws upon funding from various sources (as does the JTC Research Plan but unlike the budget priorities framework).

The criteria used to rank salmon management needs in the Canadian Basin Plan are, of course, of strictly Canadian origin. The budget priorities framework criteria naturally encompass bi-lateral Canadian and American objectives.

## The Pacific Salmon Treaty R&D Budget Allocation Decision Model

In 1990, Edwin Blewett & Associates Inc was retained by Fisheries and Oceans Canada to develop a model to assist in allocating R&D funds provided under the auspices of the Pacific Salmon Treaty for work on Pacific salmon.

Pacific Region issued a Request for Proposals to its \$6 million R&D fund. Some 400 proposals were received seeking \$12 million dollars, twice the available funding.

The Regional Executive Committee had been expending a great deal of its time and effort trying to decide which proposals to fund. A more structured, formalized process was needed to expedite the selection process.

A working group, facilitated by Dr Blewett, was formed to develop the R&D Budget Allocation Decision Model.

Working group participants gleaned criteria from the Pacific Salmon Treaty and a scoring model was developed to rank proposals for R&D funding against those criteria.

Reviewers first read and rated proposals. They then entered scores for each proposal against each criterion. The scoring model determined a total score for each proposal by calculating the weighted sum of scores against individual criteria.

Proposals were rank-ordered in terms of total proposal score and a line was drawn when the \$6 million R&D budget was exhausted.

The Regional Executive Committee reviewed and discussed about 40 projects nearest the cut-off line, and made a few changes based largely on consensus. The Re-

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gional Executive Committee spent less than one hour instead of several days to make the R&D budget funding decisions.

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The Pacific Salmon Treaty R&D Budget Allocation Decision Model focused on specific proposals rather than more generic needs, as in the Restoration and Enhancement Fund budget priorities framework.

The R&D Model employed criteria to rank proposals but used an explicit scoring system. Scores were aggregated across criteria by calculating a weighted average score, the weights of each criterion having been established by the members of the working group.

## Appendix C: Restoration and Enhancement Fund Near-term Budget Priorities 2005 through 2007

The 2003 Budget Priorities Framework was used to guide allocation of the Restoration and Enhancement Fund beginning in 2004. For the years 2005-2007, the Yukon River Panel highlighted particular priorities, drawn from the 2003 Framework, to guide its allocation decisions.

Appendix C presents the Panel's near-term priorities for 2005-2007, with most recent priorities presented first.

### 2007 Near-term Priorities

The Panel's priorities for the use of the Restoration and Enhancement Fund in 2007 were as follows (not listed in order of priority):

1. Stock Escapement Monitoring of the Canadian tributaries
  - Implement stock escapement monitoring projects for selected Canadian tributaries.<sup>2</sup>
2. Stock Identification and In-Season Management
  - Supplement existing genetic stock identification baseline data.
  - Implement in-season genetic stock identification programs to aid management decision making.
3. Determine the quality of stock escapement
  - Wherever possible continue to document age, sex, and length of fish harvested, or otherwise handled, and experiment with the collection of girth and weight information.
  - Refine understanding of the effects of gear selectivity on the quality of stock escapement.

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<sup>2</sup> The tributaries to be monitored are being identified in an overall Canadian stock escapement monitoring plan being developed by DFO in consultation with the JTC. This is an evolving document at this time. Those interested in advancing proposals under this priority should do so in consultation with DFO technical staff.

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4. Porcupine River System
  - Investigate potential management strategies that aid the recovery of salmon stocks in the Porcupine system.
  - Develop studies that provide data for estimating inherent productivity of chum salmon in the Porcupine River.
5. Community Education and Stewardship
  - Advance information, education and training - including traditional knowledge - to enable more effective community participation in the management of Yukon River salmon stocks.
6. Long-term Effective Management of Yukon River Salmon Stocks
  - Review and assess the long-term effectiveness of present stock management techniques, including the use of the R&E program, to adjust stock management techniques and strategies as appropriate.
7. Habitat Restoration and Enhancement
  - Develop appropriate priorities, strategies and techniques, including demonstration projects.
8. Joint Technical Committee Research Priorities
  - Outlined in “*US and Canada Yukon River Salmon Joint Technical Committee Strategic Plan*”, March 2005.

## 2006 Near-term Priorities

The Panel’s priorities for the use of the Restoration and Enhancement Fund in 2006 were as follows (not listed in order of priority):

1. Stock Identification and In-Season Management
  - To develop and implement in-season stock identification techniques to enable more effective management decision making to achieve escapement goals.
2. Salmon Watershed Plans
  - Review the status of each of these plans (including assessment of the respective data bases) and implement a strategy and schedule to advance these plans.
  - Establish a common format for these plans.

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3. Porcupine River System
  - Identify the most effective management needs to aid the recovery and management of the salmon stocks of the Porcupine system.
4. Community Education and Stewardship
  - Advance information, education and training - including traditional knowledge - to enable more effective community participation in the management of Yukon River salmon stocks.
5. Long-term Effective Management of Yukon River Salmon Stocks
  - Review and assess the long-term effectiveness of present stock management techniques, including the use of the R&E program, to adjust stock management techniques and strategies as appropriate.
  - Determine if the present AYI-Kuskokwim Delta (in Alaska) program review to provide useful insight for the Panel's review of its management system.
6. Habitat Restoration and Enhancement
  - Develop appropriate priorities, strategies and techniques, including demonstration projects.

## 2005 Near-term Priorities

The Panel's priorities for the use of the Restoration and Enhancement Fund in 2005 were as follows (not listed in order of priority):

1. Stock Identification and In-Season Management
  - To develop and implement in-season stock identification techniques to enable more effective management decision making to achieve escapement goals.
2. Salmon Watershed Plans
  - Review the status of each of these plans (including assessment of the respective data bases) and implement a strategy and schedule to advance these plans.
  - Establish a common format for these plans.
3. Porcupine River System
  - Identify the most effective management needs to aid the recovery and management of the salmon stocks of the Porcupine system.

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4. Community Education and Stewardship
  - Advance information, education and training - including traditional knowledge - to enable more effective community participation in the management of Yukon River salmon stocks.
5. Long-term Effective Management of Yukon River Salmon Stocks
  - Review and assess the long-term effectiveness of present stock management techniques, including the use of the R&E program, to adjust stock management techniques and strategies as appropriate.
  - Determine if the present AYI-Kuskokwim Delta (in Alaska) program review to provide useful insight for the Panel's review of its management system.
6. Habitat Restoration and Enhancement
  - Develop appropriate priorities, strategies and techniques, including demonstration projects.
7. Joint Technical Committee Research Review Priorities

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## Appendix D: Restoration and Enhancement Fund Projects 2002 through 2006

Appendix D presents information on Restoration and Enhancement Fund projects funded in 2002 through 2006, grouped by envelopes, with most recent funding allocations presented first. Note that projects may address multiple purposes (for example, a project that was primarily funded to achieve a stewardship purpose, may also accomplish some habitat restoration). However, each project that received R&E Funds is assigned to *only one envelope* by the Technical Review Group, based on the *primary purpose for which it was funded by the Panel*.

### 2006 R&E Funds by Envelope

2006 R&E Funds by Envelope			
Project #	Project Title	Envelope	Amount (US\$)
URE-01N-06	Yukon River Border Sonar Equipment Purchase	Conservation	\$135,700
URE-05N-06	Marshal Chinook Test Fishery	Conservation	\$17,800
URE-06-06	Kaltag Fall Chum/Coho Drift Gillnet Test Fishery	Conservation	\$20,500
URE-08N-06	Tech Assist, Dev & Support – Fish Wheel Video	Conservation	\$4,500
URE-09-06	Rampart-Rapids All Species Video Monitoring	Conservation	\$34,000
CRE-10N-06	Size Selective Fishing – Live Catch Fish Wheel	Conservation	\$29,800
CRE-11-06	2006 In-Season Management Fund	Conservation	\$42,500
CRE-19-06	Mayo R. Channel Recons.–Assess Juv. Chin	Conservation	\$12,900
CRE-20N-06	Stewart River Chum Pilot	Conservation	\$4,300
CRE-23N-06	Prelim Assessment Porcupine R. Juv. Sal. Mig.	Conservation	\$37,200
CRE-27-06	Porcupine River Chum Mark/Recapture Project	Conservation	\$57,200
CRE-29-06	Chum Spawning Ground Recoveries– Minto Area	Conservation	\$10,200
CRE-37-06	Blind Creek Chinook Salmon Enumeration Weir	Conservation	\$38,300
CRE-41-06	Chinook Sonar Enumeration Big Salmon River	Conservation	\$65,500
CRE-63-06	Whitehorse Hatchery Coded Wire Tagging	Conservation	\$49,500
CRE-79-06	Stock ID Microsatellite Variation – Chin. & Chum	Conservation	\$34,000
CRE-95-06	Mitigation Plan – Yukon Queen II Operation	Conservation	\$8,500
CRE-110-06	Cdn Involvement in Eagle Sonar	Conservation	\$34,000
		<b>Conservation Total</b>	<b>\$636,400</b>

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<b>2006 R&amp;E Funds by Envelope</b>			
<b>Project #</b>	<b>Project Title</b>	<b>Envelope</b>	<b>Amount (US\$)</b>
CRE-06N-06	Spawning & Rearing Access Restoration	Restoration	\$5,100
CRE-53-06	Range Road Dump Stabilization/Clean-up	Restoration	\$19,900
CRE-54N-06	Fox Creek Beaver Dam Management	Restoration	\$16,200
CRE-61-06	Helicopter Release Chinook Fry- Whs. Hatchery	Restoration	\$5,100
CRE-87-06	Germaine Creek Restoration Monitoring	Restoration	\$21,300
		<b>Restoration Total</b>	<b>\$67,600</b>
CRE-07-06	First Fish 2005 Youth Camp	Stewardship	\$3,000
CRE-08N-06	Salmon Celebration	Stewardship	\$8,500
CRE-14-06	Ichthyophonus Diagnostics, Education & Outreach	Stewardship	\$6,200
CRE-25N-06	Project Assistance Mentoring /Capacity Building	Stewardship	\$10,500
CRE-31-06	Pelly River Sub-basin Community Stewardship	Stewardship	\$21,300
CRE-47-06	Teslin River Sub-Basin Stewardship	Stewardship	\$40,000
CRE-48N-06	Teslin Tlingit Council- Salmon Kiosk Inter. Centre	Stewardship	\$8,500
CRE-50-06	KDFN Salmon Stewardship	Stewardship	\$42,500
CRE-55-06	Upper Nordenskiold Salmon Stewardship Project	Stewardship	\$2,000
CRE-56N-06	Upper Takhini/Hutchi Stewardship Plan	Stewardship	\$12,800
CRE-58-06	Community Salmon Stewardship – KFN Territory	Stewardship	\$25,500
CRE-64N-06	Wolf Creek Monitoring	Stewardship	\$5,100
CRE-65-06	McIntyre Creek Salmon Incubation Project	Stewardship	\$36,600
CRE-67-06	Yukon Schools Fry Releases & Habitat studies	Stewardship	\$3,400
CRE-97-06	Porcupine River Salmon Gathering	Stewardship	\$9,600
CRE-98-06	Yukon Stewardship Program	Stewardship	\$127,500
		<b>Stewardship Total</b>	<b>\$363,000</b>
CRE-26N-06	Commercial Chum Roe Economic Feasibility	Viable Fisheries	\$3,800
CRE-75-06	Value-Added Fish Processing Facility	Viable Fisheries	\$120,000
		<b>Viable Fisheries Total</b>	<b>\$123,800</b>
	<b>GRAND TOTAL</b>		<b>\$1,190,800</b>

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## 2005 R&E Funds by Envelope

2005 R&E Funds by Envelope			
Project #	Project Title	Envelope	Amount (US\$)
URE-06-05	Kaltag Fall Chum/Coho Drift Gillnet Test Fishery	Conservation	\$20,500
URE-09-05	Rampart-Rapids Chin & Chum Video Monitoring	Conservation	\$32,000
CRE-11-05	2005 In-season Management Fund	Conservation	\$40,000
CRE-13-05	Chandindu River Weir Demobilization	Conservation	\$4,000
CRE18N-05	Coho Radio Tagging/Telemetry Pilot Project	Conservation	\$41,300
CRE-27-05	Chum Mark/Recapture Test Fish.– Porcupine R.	Conservation	\$53,840
CRE-29-05	Chum Spawning Ground Recovery – Minto Area	Conservation	\$9,600
CRE-37-05	Blind Creek Chinook Salmon Enumeration Weir	Conservation	\$37,440
CRE-41-05	Chinook Sonar Enumeration Big Salmon River	Conservation	\$64,800
CRE-58N-05	Community Salmon Stewardship – Kluane FN	Conservation	\$24,000
CRE-63N-05	Whitehorse Rapids Hatchery CWT & Fishway	Conservation	\$48,000
CRE-89N-05	Salmon & Boreal Forest Ecosystem- MDN	Conservation	\$17,600
CRE-95-05	Mitigation Plan – Yukon Queen II Operation[15]	Conservation	\$8,000
CRE-110N-05	Canadian Participation in Eagle Sonar	Conservation	\$40,000
Genetic Stock Id.	US and Canadian Agencies	Conservation	\$150,000
		<b>Conservation Total</b>	<b>\$591,080</b>
CRE-19-05	Mayo R. Channel Recon. – Ass. Juv. Chin. Hab.	Restoration	\$16,000
CRE-53N-05	Range Road Dump Stabilization/Clean-Up	Restoration	\$27,680
CRE-61N-05	Chinook Fry Release– Whitehorse Rapids Hat.	Restoration	\$4,800
CRE-87-05	Germaine Creek Off -Channel Habitat Dev.	Restoration	\$17,200
		<b>Restoration Total</b>	<b>\$65,680</b>

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<b>2005 R&amp;E Funds by Envelope</b>			
<b>Project #</b>	<b>Project Title</b>	<b>Envelope</b>	<b>Amount (US\$)</b>
URE-14N-05	Ichthyophonous Diagnostics, Educa. & Outreach	Stewardship	\$30,000
CRE-07-05	First Fish 2005 Youth Camp	Stewardship	\$2,800
CRE-31N-05	Pelly River Sub-Basin Community Stewardship	Stewardship	\$16,000
CRE-36N-05	Community Based Stream Ass. – LSCFN TT	Stewardship	\$12,000
CRE-47-05	Teslin River Sub-Basin Stewardship	Stewardship	\$38,160
CRE-50-05	McClintock Watershed Salmon Mgmt. Plan	Stewardship	\$24,000
CRE-55-05	Upper Nordenskiold Salmon Stewardship	Stewardship	\$5,200
CRE-62N-05	Interpretative Displays Whitehorse Fishway	Stewardship	\$4,000
CRE-65N-05	McIntyre Creek Salmon Incubation Project	Stewardship	\$34,480
CRE-67-05	Yukon Schools Fry Releases & Habitat studies	Stewardship	\$3,200
CRE-97N-05	Porcupine River Salmon Gathering	Stewardship	\$9,600
CRE-98-05	Yukon Stewardship Program	Stewardship	\$104,000
CRE-104-05	Yukon Fisheries Field Ass. Project– 3rd Offering	Stewardship	\$52,800
		<b>Stewardship Total</b>	<b>\$336,240</b>
CRE-75-05	Value-Added Fish Processing Facility	Viable Fisheries	\$120,000
		<b>Viable Fisheries Total</b>	<b>\$120,000</b>
	<b>GRAND TOTAL</b>		<b>\$1,113,000</b>

### 2004 R&E Funds by Envelope

<b>2004 R&amp;E Funds by Envelope</b>			
<b>Project #</b>	<b>Project Title</b>	<b>Envelope</b>	<b>Amount (US\$)</b>
URE-01-04	Radio-Arch Tag Recovery – Lower Yukon River	Conservation	\$20,000
URE-03-04	Chinook Salmon Capture for Radio Telemetry Study	Conservation	\$60,000
URE-06-04	Kaltag Fall Chum/Coho Drift Gillnet Test Fishery	Conservation	\$23,800
URE-09-04	Rampart-Rapids Video Monitoring	Conservation	\$32,200
URE-12-04	Enhance Mainstem Fall Chum Escapement	Conservation	\$14,600
URE-18N-04	Aerial Survey for Radio Telemetry Study	Conservation	\$12,000
CRE-01-04	Juv. Chin & Chum Out-migration Timing & Char.	Conservation	\$20,845
CRE-02-04	Radio Tag Recovery, Tr'ondek Hwech'in Tr. Terr.	Conservation	\$10,615

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<b>2004 R&amp;E Funds by Envelope</b>			
<b>Project #</b>	<b>Project Title</b>	<b>Envelope</b>	<b>Amount (US\$)</b>
CRE-05-04	Klondike River Spawning escapement Est. (AUC)	Conservation	\$15,923
CRE-11-04	2004 In-season Management Fund	Conservation	\$16,231
CRE-15-04	Juvenile Chinook/Coho Habitat Assessment	Conservation	\$28,154
CRE-17-04	Chinook Radio Tracking/Telemetry Pilot Project	Conservation	\$14,308
CRE-23-04	S. McQuesten R. Water Quality Monitoring. – Year 2	Conservation	\$8,308
CRE-27-04	Chum Mark/Recapture Test Fishery – Porcupine R.	Conservation	\$37,923
CRE-29-04	Chum Spawning Ground Recoveries – Minto Area	Conservation	\$9,231
CRE-37-04	Blind Creek Chinook Salmon Enumeration Weir	Conservation	\$28,462
CRE-41N-04	Chinook Sonar Monitoring- Big Salmon River	Conservation	\$86,692
CRE-63-04	Whitehorse Rapids Hatchery Coded Wire Tag	Conservation	\$30,769
CRE-77-04	Aerial Telemetry Survey – Cdn Sec Upper Yukon R	Conservation	\$53,846
CRE-78-04	Chinook Telemetry - Canadian Section YR Basin	Conservation	\$81,538
CRE-79-04	MHC Variation & Stock ID of Yukon R. Ck. and Cm.	Conservation	\$38,462
CRE-95-04	Mitigation Plan - Yukon Queen II Operation	Stewardship	\$13,077
CRE-106N-04	Chum Fishery Substitution	Conservation	\$13,385
		<b>Conservation Total</b>	<b>\$670,370</b>
CRE-19-04	Lower Mayo River Fisheries R&E – Phase 2	Restoration	\$30,769
CRE-35-04	Klusha Creek & Tatchun Creek Beaver Management	Restoration	\$15,385
CRE-59-04	Beaver Mgmt - Chum Spawning Sloughs - Kluane	Restoration	\$4,615
CRE-87-04	Germaine Creek Restoration Assessment	Restoration	\$26,923
		<b>Restoration Total</b>	<b>\$77,692</b>
CRE-07-04	First Fish 2004, Youth Camp	Stewardship	\$1,923
CRE-47-04	Teslin River Sub-basin Stewardship	Stewardship	\$38,462
CRE-50-04	McClintock River Watershed Sal. Management Plan	Stewardship	\$43,077
CRE-55-04	Upper Nordenskiold River Stewardship	Stewardship	\$7,308
CRE-65-04	McIntyre Creek Salmon Incubation Project	Stewardship	\$28,769
CRE-67-04	Yukon Schools Fry Releases & Habitat studies	Stewardship	\$3,077
CRE-93N-04	Salmon Info Workshop Ta'an Kwach'an T.T.	Stewardship	\$16,231
CRE-98-04	Yukon Stewardship Program	Stewardship	\$80,769
CRE-104-04	Yukon Fisheries Field Assistant Program– 2 <sup>nd</sup> Offering	Stewardship	\$49,923
NA	Support to Students attending CRE-104-04	Stewardship	\$18,460
		<b>Stewardship Total</b>	<b>\$287,999</b>
CRE-72-04	Commercial Fish Plant Upgrades Value Added	Viable Fisheries	\$14,615
CRE-75-04	Value-Added Fish Processing Facility	Viable Fisheries	\$36,385
		<b>Viable Fisheries Total</b>	<b>\$51,000</b>

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<b>2004 R&amp;E Funds by Envelope</b>			
<b>Project #</b>	<b>Project Title</b>	<b>Envelope</b>	<b>Amount (US\$)</b>
	<b>GRAND TOTAL</b>		<b>\$1,087,061</b>

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## 2003 R&E Funds by Envelope

2003 R&E Funds by Envelope			
Project #	Project Title	Envelope	Amount (US\$)
URE-11-03	In-Season Management Teleconferences	Communications	\$7,000
		<b>Communications Total</b>	<b>\$7,000</b>
URE-01-03	Radio Tag Recovery – Lower Yukon River	Conservation	\$7,000
URE-02-03	Mountain Village Fall Season Gillnet Test Fishery	Conservation	\$15,000
URE-03N-03	Chinook Salmon Capture for Radio Telemetry Study	Conservation	\$60,000
URE-06-03	Kaltag Fall Chum/Coho Drift Gillnet Test Fishery	Conservation	\$22,500
URE-12-03	Enhance Mainstem Fall Chum Escapement	Conservation	\$15,800
URE-13-02	Ichthyophonous Impact Survival & Fecundity – Chin	Conservation	\$38,800
URE-15N-03	Kaltag Subsistence Chin. Drift Fishery Scale Sampling	Conservation	\$1,400
CRE-01-03	Yukon River Juvenile Migration Timing	Conservation	\$32,700
CRE-02-03	Radio Tag Recovery, Tr'ondek Hwech'in Trad. T.	Conservation	\$5,100
CRE-11N-03	In-season Management Fund (Test Fisheries)	Conservation	\$50,700
CRE-13-03	Chandindu River Salmon Enumeration Weir	Conservation	\$33,800
CRE-17N-03	Chinook Radio Tracking/Telemetry Pilot Project	Conservation	\$11,100
CRE-23-03	South McQuesten River Water Quality Monitoring	Conservation	\$9,000
CRE-27N-03	Chum Tagging Test Fishery – Porcupine River	Conservation	\$33,200
CRE-37N-03	Blind Creek Chinook Salmon Enumeration Weir	Conservation	\$23,600
CRE-63-03	Whitehorse Rapids Hatchery Coded Wire Tag	Conservation	\$27,700
CRE-71N-03	Salmon Habitat Mgmt Plan – City of Whitehorse	Conservation	\$6,800
CRE-77N-03	Chin. Aerial Tel. Survey – Cdn. Section YR Watershed	Conservation	\$57,800
CRE-78-032	Chin. Radio Tel. - Canadian Section YR Watershed	Conservation	\$119,800
CRE-79-03	MHC Variation & Stock ID (Chum) Yukon River	Conservation	\$33,800
CRE-95-03	Yukon Queen II Investigations	Conservation	\$12,200
CRE-106N-03	Chum Fishery Substitution	Conservation	\$9,900
		<b>Conservation Total</b>	<b>\$627,700</b>
CRE-05-03	Klondike River Sampling- Broodstock & Juv. Grow-out	Restoration	\$9,600
CRE-15-03	Juvenile Chinook/Coho Habitat Assessment	Restoration	\$31,200
CRE-19N-03	Lower Mayo River Chinook & Channel Assessment	Restoration	\$24,100
CRE-34N-03	Little Salmon Carmacks FN Salmon Habitat Surveys	Restoration	\$9,100

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CRE-59-03	Beaver Mgmt - Chum Spawning Sloughs - Kluane	Restoration	\$3,800
CRE-87N-03	Germaine Creek Demonstration Restoration Project	Restoration	\$28,000
		<b>Restoration Total</b>	<b>\$105,800</b>

<b>2003 R&amp;E Funds by Envelope</b>			
<b>Project #</b>	<b>Project Title</b>	<b>Envelope</b>	<b>Amount (US\$)</b>
CRE-07-03	2003 'First Fish' Youth Camp	Stewardship	\$700
CRE-16-03	Traditional/Local Knowledge Salmon Survey	Stewardship	\$6,700
CRE-26N-03	Weir Feasibility Study – Stewart River Watershed	Stewardship	\$10,100
CRE-29-03	Chum Spawning Ground Recoveries – Minto Area	Stewardship	\$9,000
CRE-33N-03	Big Creek Investigation	Stewardship	\$4,300
CRE-35-03	Klusha Creek & Tatchun Creek Beaver Management	Stewardship	\$9,200
CRE-43N-03	Compilation & Mapping Fisheries Data TTC TT	Stewardship	\$10,800
CRE-47-02	Teslin River Sub-basin Stewardship	Stewardship	\$27,000
CRE-50-03	McClintock River Watershed Sal. Management Plan	Stewardship	\$37,800
CRE-53N-03	Salmon Planning White River Traditional Territory	Stewardship	\$21,800
CRE-54-03	Takhini River Chinook Investigations and R&E Plan	Stewardship	\$10,100
CRE-55-03	Upper Nordenskiold River Salmon Restoration	Stewardship	\$10,100
CRE-58N-03	Traditional & Local Knowledge Survey – Kluane	Stewardship	\$10,100
CRE-62N-03	Juvenile (Salmon) Identification Field Book	Stewardship	\$3,300
CRE-64N-03	Wolf Creek Monitoring	Stewardship	\$3,400
CRE-65-03	McIntyre Creek Salmon Incubation Project	Stewardship	\$29,000
CRE-67-03	Yukon Schools Fry Releases & Habitat studies	Stewardship	\$2,700
CRE-98N-03	Yukon Stewardship Program	Stewardship	\$101,400
CRE-104N-03	Yukon Fisheries Field Assistant Program	Stewardship	\$37,900
		<b>Stewardship Total</b>	<b>\$345,400</b>
CRE-72-03	Comm. Fish Plant Upgrades Value Added Prod. -Ph 2	Viable Fisheries	\$13,500
CRE-75-03	Value Added Study – Phase 3 (Business Plan)	Viable Fisheries	\$26,800
		<b>Viable Fisheries Total</b>	<b>\$40,300</b>
	<b>GRAND TOTAL</b>		<b>\$1,126,200</b>

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**2002 R&E Funds by Envelope**

<b>2002 R&amp;E Funds by Envelope</b>			
<b>Project #</b>	<b>Project Title</b>	<b>Envelope</b>	<b>Amount (US\$)</b>
URE-11-02	In-Season Management Teleconferences	Communications	\$7,000
		<b>Communications Total</b>	<b>\$7,000</b>
URE-01-02	Radio Tag Recovery – Lower Yukon River	Conservation	\$8,000
URE-02-02	Mountain Vill. Fall Season Gillnet Test Fish.	Conservation	\$16,400
URE-04-02	Salcha River Chin & Chum Counting Tower	Conservation	\$52,200
URE-06-02	Kaltag F Chum/Coho Gillnet Test Fishery	Conservation	\$22,500
URE-08-02	Sub-dist. Y-5A F. Chum/Coho Test Fishwheel	Conservation	\$35,000
URE-09-02	Rampart-Rapids Fall Chum C.P.U.E.	Conservation	\$13,900
URE-12-02	Enhance Mainstem Fall Chum Escapement	Conservation	\$15,800
URE-13-02	<i>Ichthyophonous</i> – Chinook Study	Conservation	\$37,000
CRE-01-02	Juvenile Chin Out-migration Timing & Char.	Conservation	\$15,800
CRE-02-02	Radio Tag Recovery, TH Traditional Terr.	Conservation	\$3,200
CRE-05-02	Klondike River Sampling & Redd Mapping	Conservation	\$9,000
CRE-09-02	Chum Test Fishery/Live Capture Fishwheels	Conservation	\$32,200
CRE-10-02	Chinook Test Fishery	Conservation	\$25,700
CRE-13-02	Chandindu River Salmon Enum. Weir (2)	Conservation	\$31,400
CRE-23-02	McQuesten River Spawner Survey	Conservation	\$9,200
CRE-24-02	Lower Stewart R. Hab. Class. & Map. Pilot	Conservation	\$16,500
CRE-29-02	Chum Spawning Ground Recoveries - Minto	Conservation	\$6,100
CRE-30-02	Groundwater ID & Invest.-Upper Yukon R.	Conservation	\$12,500
CRE-39-02	Hess River Spawning Area Assessment	Conservation	\$12,500
CRE-57-02	Investigation Spawning Chum - Kluane Lake	Conservation	\$6,400
CRE-63-02	Whitehorse Rapids. Hatchery Coded Wire Tag	Conservation	\$23,800
CRE-71-02	Fisheries Habitat G/S Database – City Whs.	Conservation	\$9,100
CRE-78-02	Telemetry Cdn. Section Yukon River Basin	Conservation	\$113,900
CRE-79-02	Microsatellite Variation in Chum	Conservation	\$31,600
CRE-92-02	Method/Placer Miners to Monitor Sed. (2)	Conservation	\$12,400
CRE-95-02	Yukon Queen II Investigations	Conservation	\$9,700
		<b>Conservation Total</b>	<b>\$581,800</b>

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<b>2002 R&amp;E Funds by Envelope</b>			
<b>Project #</b>	<b>Project Title</b>	<b>Envelope</b>	<b>Amount (US\$)</b>
CRE-06-02	Klondike – Incub./Outplanting Facility Feas.	Restoration	\$25,500
CRE-08-02	Coal Creek Stream Study–Spawn/Rearing	Restoration	\$2,400
CRE-19-02	Monitor & Eval. McQuesten R. Logjam Div.	Restoration	\$3,400
CRE-20-02	McQuesten R. Watershed Assess/Rest Plan	Restoration	\$28,200
CRE-27-02	Pelly River Trib. Chin Habitat & Use Survey	Restoration	\$21,500
CRE-28-02	Mica Creek Salmon Habitat Restoration	Restoration	\$6,800
CRE-35-02	Klusha Cr. & Tatchun Cr. Beaver Mgmt.	Restoration	\$7,000
CRE-41-02	Chum Spawning Sites/Upper Teslin River	Restoration	\$6,300
CRE-42-02	Conserve/Restore Swift River Drainage B.C.	Restoration	\$17,300
CRE-45-02	Teslin River Chin Spawning Location	Restoration	\$11,300
CRE-54-02	Upper Takhini River Restoration Plan	Restoration	\$12,500
CRE-55-02	Upper Nordenskiold River Plan (4)	Restoration	\$9,500
CRE-56-02	Beaver Dams Upwelling Ground Water -Chum	Restoration	\$33,300
CRE-60-02	Chinook Utiliz. Upper White R. Watershed	Restoration	\$22,300
CRE-70-02	Restore Fish Passage / YT Highway Culverts	Restoration	\$26,700
CRE-86-02	Develop Protocol Restore Fish Hab–Plcr. Str.	Restoration	\$15,600
CRE-96-02	Salmon restoration/Fox, Laurier & Joe Creeks	Restoration	\$19,000
		<b>Restoration Total</b>	<b>\$268,600</b>

<b>2002 R&amp;E Funds by Envelope</b>			
<b>Project #</b>	<b>Project Title</b>	<b>Envelope</b>	<b>Amount (US\$)</b>
CRE-07-02	First Fish 2002, Youth Camp	Stewardship	\$2,500
CRE-15-02	Training & Chin/Coho Habitat Assessment	Stewardship	\$47,500
CRE-16-02	Traditional/Local Knowledge Salmon Survey	Stewardship	\$5,100
CRE-21-02	Salmon Habitat Signs at Fraser Falls	Stewardship	\$1,500
CRE-33-02	Carmacks Watershed Camp	Stewardship	\$3,200
CRE-40-02	Salmon Rearing Stream Signage	Stewardship	\$4,700
CRE-44-02	Teslin R. Watershed Salmon Info. Gathering	Stewardship	\$4,900
CRE-47-02	Teslin Stewardship & Beaver Management	Stewardship	\$8,800
CRE-50-02	McClintock R. Watershed Salmon Mgmt. Plan	Stewardship	\$25,000
CRE-58-02	Conserve/restore Chin Habitat - Tincup Ck.	Stewardship	\$4,400
CRE-65-02	McIntyre Creek Salmon Incubation Project	Stewardship	\$17,600

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CRE-67-02	Yukon Schools Fry Rel's. & Habitat Studies	Stewardship	\$2,500
CRE-68-02	FN Fisheries Tech & Stew. Cap Building	Stewardship	\$14,400
CRE-69-02	Yukon Salmon Stewardship Program	Stewardship	\$21,900
		<b>Stewardship Total</b>	<b>\$164,000</b>
CRE-72-02	Commercial Fish Plant Upgrades Val. Added	Viable Fisheries	\$12,700
CRE-75-02	Commercial Salmon Fishery Feasibility Study	Viable Fisheries	\$12,700
		<b>Viable Fisheries Total</b>	<b>\$25,400</b>
	<b>GRAND TOTAL</b>		<b>\$1,046,800</b>

## Appendix E: Participants in Development of 2003 Budget Priorities Framework and 2006 Update

Participants in development of the 2003 Budget Priorities Framework at the May 2003 workshop in Whitehorse, Yukon included the following. The workshop was facilitated by Edwin Blewett of Blewett & Associates, Vancouver, British Columbia.

	USA	Canada
Yukon River Panel Restoration and Enhancement Fund Sub-Committee	Mary Pete (US Co-chair) Gilbert Huntington Andy Bassich Julie Roberts John Lamont	Gord Zealand (Canadian Co-chair) Lorelei Smith Carl Sydney Gerry Couture
Technical staff	John Hilsinger Gene Sandone Jill Klein Bonnie Borba Jeff Bromaghin David Wiswar Susan McNeil	Sandy Johnston Al von Finster
Yukon River Panel Secretariat	Hugh Monaghan	

Participants in preparation of the updated 2006 Budget Priorities Framework, at the November 2006 meeting in Juneau, Alaska included the following. The meeting was facilitated by Jan Caulfield of Sheinberg Associates, Juneau, Alaska.

	USA	Canada
Yukon River Panel Restoration and Enhancement Fund, Budget Priorities Subcommittee	Elizabeth Andrews (US Co-chair) Ragnar Alstrom Andy Bassich Russ Holder Stanley Ned	Frank Quinn (Canadian Co-chair) Lorelei Smith Gerry Couture
Technical staff	Dan Bergstrom Gene Sandone Eric Volk	Sandy Johnston Patrick Milligan Al von Finster

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	USA	Canada
Yukon River Panel Secretariat	Hugh Monaghan	

## Appendix F: Definitions

For purposes of this Restoration and Enhancement Fund, Budget Priorities Framework 2006 Update:

“Conservation” means management of fish and wildlife populations and habitats and the regulation of users to ensure the quality, diversity, and long-term optimum productivity of fish and wildlife populations, with the primary goal of ensuring a sustainable harvest and its proper utilization - as defined under the Umbrella Final Agreement; planned management of a natural resource to prevent over-exploitation, destruction or neglect;

“Enhancement” means expanding a wild salmon stock beyond its natural production level; this can be accomplished through man-made improvements to natural habitats, or the application of artificial fish culture technology, that will lead to the increase of salmon returns (usually done with the intention of increasing future harvests);

“Restoration” means returning a wild salmon stock to its natural production level;

“Stewardship” means the careful and responsible management of something entrusted to one’s care; under the Yukon River Salmon Agreement, all management entities work to promote stewardship of salmon habitat and stocks.

“Viable Fishery” means existing and developing with a reasonable chance of succeeding as an independent fishery under normal management and conservation constraints; under the Yukon River Salmon Agreement, Yukoners may use the R&E Fund to support projects to create and maintain viable fisheries with economic, social and environmental benefits, which may include developing commercial fishery infrastructure and markets.