US AND CANADA YUKON RIVER

Joint Technical Committee Plan

MARCH 2005

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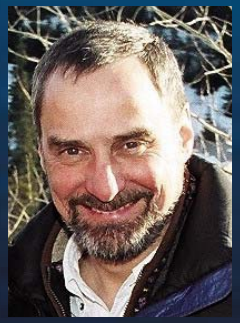
MESSAGE FROM THE CO-CHAIRS



John Hilsinger

Sandy Johnston

The Yukon River wild salmon runs are marvelous phenomena of nature. The Yukon River supports five species of salmon: Chinook, chum, pink, sockeye and coho and two races of chum salmon, summer and fall chum salmon. Of these, three (Chinook, summer and fall chum, and coho) are subject to intensive commercial and subsistence fisheries. Migrating salmon can travel from approximately a hundred miles to over 1,700 miles from the mouth at the Bering Sea to their spawning tributaries in Alaska, Yukon, and British Columbia. Summer chum salmon spawn in the lower and middle Yukon in Alaska; coho salmon spawn primarily in Alaska, but small numbers do migrate to Canada. Chinook and fall chum salmon spawn extensively in both the Alaskan and Canadian portions of the drainage. Increased demand on this resource challenges us to encourage conservation, promote restoration, and protect opportunities to participate in this unique fishery.

The planning process was initiated in 2002. The goals, issues, and needs contained in this plan provide a clear framework for strategies in the entire Yukon River basin. We believe these strategies will help guide our efforts in research, stewardship, and management of our shared resource into the future.

We want to thank the staff of all representative agencies and members of the public who worked to develop this plan. As with any dynamic plan, it will change according to circumstances.

These fisheries are a wonder of nature, if we responsibly conserve and restore them now, we can hand them as gifts to future generations.

Good Fishing,

John Hilsinger and Sandy Johnston
Joint Technical Committee Co-Chairs

JOINT TECHNICAL COMMITTEE PLAN

Photo Supplied by NOAA

JTC PLAN MISSION STATEMENT

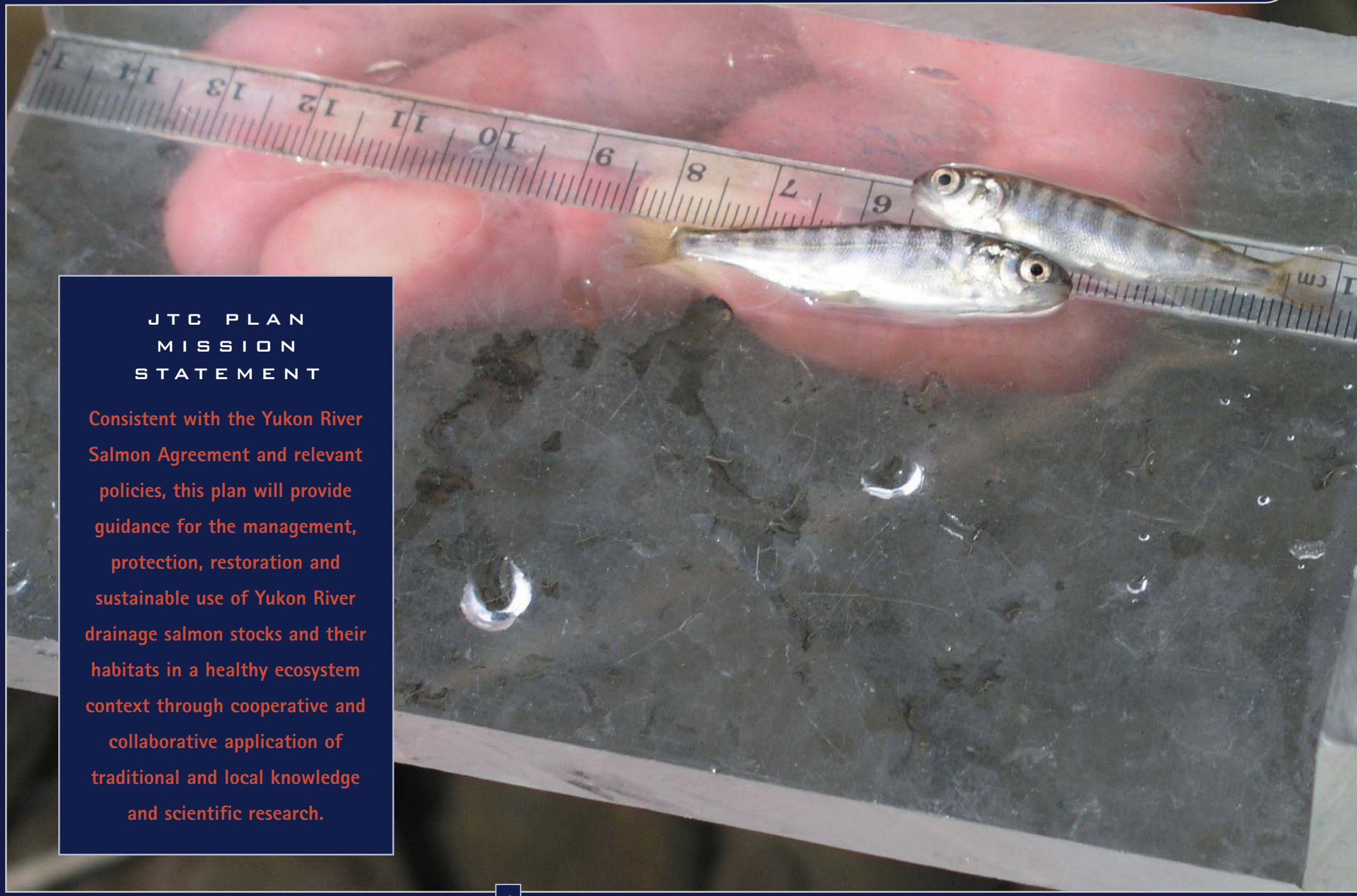
Consistent with the Yukon River Salmon Agreement and relevant policies, this plan provides guidance for the management, protection, restoration, and sustainable use of Yukon River drainage salmon stocks and their habitats in a healthy ecosystem context through cooperative and collaborative application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

JOINT TECHNICAL COMMITTEE

Established in 1985 as a scientific advisory body to the Advisors of both countries involved in the Yukon River Treaty negotiations, and now advising the Yukon River Panel, the Joint Technical Committee (JTC) applies scientific expertise to deal with complex problems. Comprised of representatives from US and Canadian government agencies and non-governmental organizations, the committee meets semiannually to discuss harvest and escapement goals, management trends, and preseason outlooks and postseason reviews. Research projects are cooperatively completed within the membership and communications are encouraged between managers and with the public. Expertise is contracted when necessary from outside the membership to conduct studies important to the fishery.

YUKON RIVER PANEL

The Yukon River Panel, comprised of representatives from the US and Canada, has a primary responsibility to review each country's fishery management performance. Besides monitoring the coordinated management and harvest sharing of Canadian-origin Chinook and chum salmon, the Panel may make recommendations for interim spawning escapement objectives, suggest improvements to management regimes and stock rebuilding plans, and to request research and management plans and programs. Another important task is to manage the Restoration and Enhancement Fund, which receives approximately $1.2 million annually. The Panel solicits and reviews proposals for projects for this fund and decides, after consideration of advice from the JTC, which projects to fund each year.



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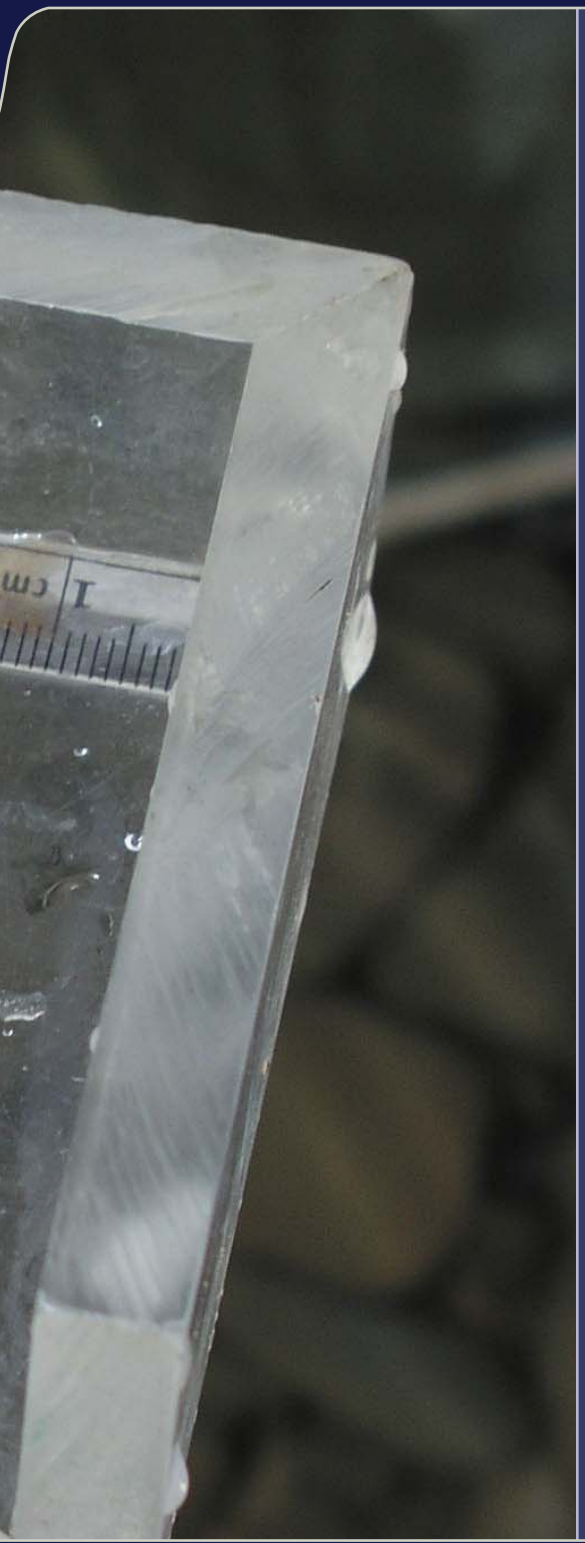

MOTIVE FOR PLANNING

The Yukon River Salmon Agreement, an annex of the Pacific Salmon Treaty, provides for salmon management, conservation and harvest allocation programs and projects. Twenty-one other documents were identified as relevant to JTC research and restoration in the Yukon River. The direction of these many mandates to the JTC can be summarized:

Conserve wild salmon stocks and habitats, Sustain optimum salmon production, Collect information on salmon behavior and health, Recommend escapement objectives and management regimes, Investigate new ways to evaluate rebuilding, Determine total return and escapement, Assess habitat and measures to protect and restore salmon habitat, and Collect data on major tributaries for the exploitation of Yukon origin salmon.

This plan will provide a focus and direction for JTC time and monies. Projects can be prioritized, and personnel and equipment allocated to those agreed most important. This plan can be used for projects not necessarily classed as research.

Cooperative research is made more constructive. Communication is encouraged during the planning process, misunderstandings can be rectified and discussion can help to educate. The plan's comprehensive listing of all research needs for the entire basin provides a framework for other plans in the region.

PLAN USAGE

This plan will guide the JTC, and the Yukon River Panel, on key research and conservation needs for the entire Yukon River basin. We will use the plan in each agency internally and to communicate with an international public. This plan can aid proponents and funding agents to identify basinwide priorities. Proponents applying for funding can use the plan to identify main objectives for projects and research. Likewise, funding agents can use the plan to make their request for proposals more specific and to prioritize submitted proposals.

This plan defines and organizes research and investigative priorities in the Yukon River drainage. This plan lists the goals, objectives and issues in order of priority. Goal 1, Assess and achieve fishery management objectives, is a higher priority than goal 2, Assess, conserve and restore salmon habitats. Goal 4, Improve understanding of salmon biology and ecology, has the lowest priority. Objectives under each of the goals are prioritized. For example, Goal 1, Objective 1, Monitor or project escapements by CMU, is a higher priority than Goal 1, Objective 2, Assess abundance inseason. Objective 7, Investigate and implement precautionary management, has the lowest priority for that goal. Issues under each objective are prioritized, but strategies for addressing each issue are not prioritized.

The JTC Strategic Plan, although written for a specific timeline, is dynamic or evergreen. Evergreen means it can be adjusted as needs of users and resources change; an evolving document to be continually revised as projects or completed tasks answer questions outlined in the plan. By keeping the strategies updated and timely, the plan will remain functional.timeline, is dynamic or evergreen. Evergreen means it can be adjusted as needs as users and resources change; an evolving document to be continually revised as projects come and go, and projects or completed tasks answer questions outlined in the plan. By keeping the strategies updated and timely, the plan will remain functional.

Photo Supplied by DFO

GOAL 1

• ASSESS AND ACHIEVE FISHERY MANAGEMENT OBJECTIVES

OBJECTIVES:

- Monitor or project escapements by Conservation Management Unit
- Assess abundance inseason
- Establish management objectives
- Improve management and research capability
- Monitor harvest by Conservation Management Unit
- Maintain and improve harvest management consultation
- Investigate and implement precautionary management

1.1

Monitor or project escapements by Conservation Management Unit

1.1.1 Estimate or index escapements

STRATEGIES:

- Reassess needs using results from genetic stock ID and radio tagging projects
- Identify CMU by species
- Complete an assessment of where escapement monitoring is necessary and how often a system or tributary needs to be monitored
- Evaluate cost and utility of various methods of counting escapement such as aerial surveys, sonar, weirs, towers, video, etc.
- Assess the number of projects by species with absolute counts, geographic distribution, strengths, and weaknesses
- Estimate the stock, biological or other, composition of escapements

1.1.2 Estimate the stock biological or other composition of escapements

STRATEGIES:

- Link to evaluations and assessments mentioned in 1.1.1
- Evaluate sampling methods to assure unbiased sampling
- Develop sampling protocols
- Assess abundance inseason
- Estimate or index abundance

1.2

Assess abundance inseason

1.2.1 Estimate or index abundance

STRATEGIES:

- Evaluate current program and develop plan for long-term abundance monitoring
- Develop an evaluation framework to assess the cost and utility of various methods of determining relative and absolute abundance
- Evaluate sonar and mark-recapture projects to determine how well they correlate with other measures of abundance and look for ways to make them more reliable
- Conduct a workshop to discuss these points

1.2.2 Estimate CMU composition of abundance

STRATEGIES:

- Define an on-the-grounds program and design an intermediate level of evaluation and planning
- Define and identify CMU (See 1.3.2)

  Evaluate current programs by area to optimize stock composition data collection
- Assess escapement to major tributaries or sub basins by monitoring mainstem abundance and stock composition
- Place escapement projects on selected tributaries to assure good geographical distribution and ground truth mainstem projects

1.2.3 Estimate characteristics of run timing

STRATEGY:

- Assess absolute versus index abundance

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Photo Supplied by USGS

Photo Supplied by USGS

Photo Supplied by DFO

1.3

Establish management objectives

1.3.1 Establish escapement goals and/or reference points by CMU

STRATEGIES:

- Explore and compare US sustainable salmon fisheries escapement policies and emerging Canadian Wild Salmon Policy
- Review all escapement goals for consistency with applicable policies as part of the overall escapement plan
- Set goals where feasible, monitor where goals are established. Goals need to be set through a consistent process – may use stock recruitment in combination with habitat parameters
- Identify information gaps that hinder analysis of appropriate goals
- Collect and catalog different methodologies for setting goals (put literature together and distribute)
- Devise a practical guide for precautionary approach

1.3.2 Define CMU

STRATEGIES:

- Review other definitions and uses of CMUs –for example, BC and Pacific NW
- Combine genetic baseline with management reality
- Identify data needed to establish CMUs and ensure they are collected
- Find examples of how CMUs are established

1.3.3 Identify CMUs – conditioned on definition

STRATEGIES:

- Review current management strategies and recommendations for improvement. Collect literature
- Identify data shortfalls
- Bring all appropriate data, geneticists, and managers together to identify

1.3.4 Establish or improve harvest strategies (mesh size, schedules)

STRATEGIES:

- Define harvest strategies from CMUs
- Complete mesh assignment from Panel
- Identify chronic management problems that need strategies
- Review and make recommendations to improve database so that management by CMU can be monitored effectively
- Compile and evaluate age composition data and stock timing through fisheries

1.3.5 Establish rebuilding plans as necessary

STRATEGY:

- Reiterate rebuilding schedules and needs identified in treaty including rebuilding of mainstem Yukon Chinook and chum salmon, and Fishing Branch chum salmon

1.4

Improve management and research capability

1.4.1 Improve run assessment capability

STRATEGIES:

- Work toward inseason subsistence harvest monitoring
- Develop inseason stock ID
- Evaluate cost effectiveness and accuracy of various assessment methods in season
- Evaluate customary trade between rural residents

1.4.2 Improve escapement assessment capability

STRATEGIES:

- Document existing and emerging techniques
- Assess existing projects and identify improvements required to bring them up to a common standard
- Assess sampling difficulties
- Combine techniques where necessary

1.4.3 Investigate new technology, methods and models

STRATEGIES:

- Evaluate Didson sonar
- Develop less intrusive sampling methods
- Evaluate effects of crew fatigue on data quality
- Investigate digital video at towers and weirs, and develop ways to measure fish using video
- Develop ways to improve efficiency such as using less personnel time, reducing fatigue, reducing the handling of fish, and reducing impediments to migration
- Develop and make available to researchers a documentation of new and emerging technologies

1.4.4 Investigate harvesting methods

STRATEGIES:

- Investigate and evaluate selectivity of current harvesting methods
- Develop options for reducing or eliminating harvest of certain components of the run as required
- Document gear used in various fisheries annually

1.4.5 Improve forecasting ability

STRATEGIES:

- Investigate relationship between high seas catches and returns to river
- Conduct high seas juvenile studies
- Develop inriver juvenile abundance indices

Photo Supplied by ADFG

Photo Supplied Jake Duncan

1.5

Monitor harvest by CMU

1.5.1 Estimate harvest by fishery inseason

STRATEGY:

- Estimate inseason subsistence catch

1.5.2 Estimate the stock, biological or other, composition of harvest

STRATEGIES:

- Improve inseason genetic stock ID
- Build database to analyze genetic/ASL data and to correlate with escapement
- Develop strategy to determine what harvest to sample

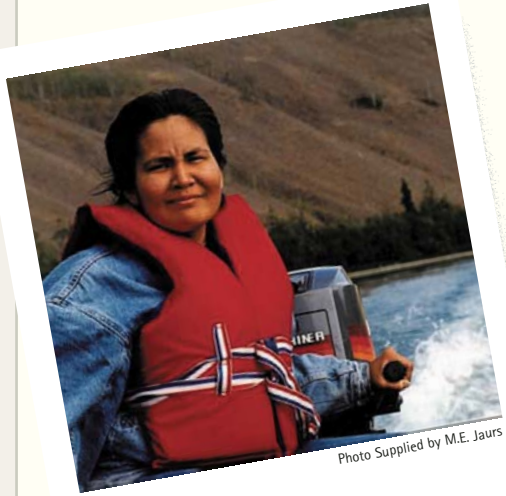

Photo Supplied by M.E. Jaurs

1.6

Maintain and improve harvest management consultation

1.6.1 Improve drainagewide consultation

STRATEGIES:

- Continue to promote participation in drainagewide conference calls and exchanges
- Encourage public attendance at Panel meetings
- Encourage greater knowledge and understanding among public of fishery, and habitat (see 2.2.2) regulations and regulatory processes

1.6.2 Coordinate management plans

STRATEGIES:

- Continue to coordinate management plans
- Identify specific issues to coordinate before fall JTC meetings

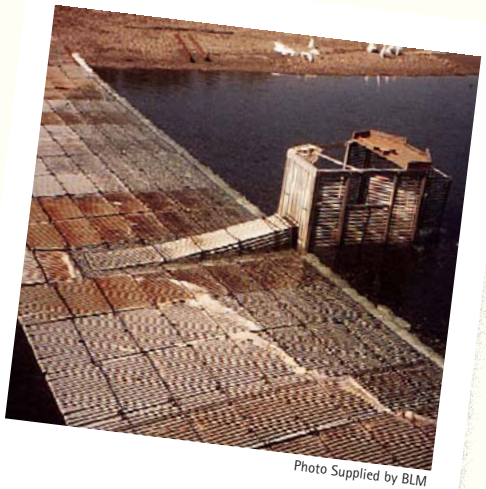

Photo Supplied by BLM

1.7

Investigate and implement precautionary management

1.7.1 Assess limitations of management tools

STRATEGIES:

- Compare success at meeting management targets with inseason management actions to see if changes need to be made
- Complete an assessment of each major run assessment tool
- Compare actual outputs/results with goals

1.7.2 Incorporate uncertainty into decision making

STRATEGIES:

- Collect available literature on precautionary management to develop definitions
- Develop criteria for evaluation of costs and benefits for precautionary management
- Review uncertainty analysis by specialists
- Conduct a risk analysis associated with major run assessment projects: risk of not achieving escapement goals and risk of not achieving harvest goals

1.7.3 Define precautionary approach

STRATEGIES:

- Discuss what degree of intuition should be used in times of uncertainty
- Review precautionary fisheries management, familiarize the JTC

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GOAL 2

• ASSESS, CONSERVE AND RESTORE SALMON HABITATS

OBJECTIVES:

- Identify, characterize and catalog salmon habitats
- Minimize future impacts to habitat
- Identify and implement restoration opportunities

2.1

Identify, characterize and catalog salmon habitats

2.1.1 Identify important features of habitat

STRATEGIES:

- Update Fisheries Information Summary System and Fish Distribution Database
- Update the Alaska Anadromous Waters Catalog
- Continue inventory of salmon streams
- Research physical and biological characteristics of spawning, rearing, and over wintering habitats of salmon
- Identify research and cataloging needs necessary to characterize smaller streams, and increase the overall number of research oriented projects
- Encourage research scientists to participate in the assessment of habitat

2.1.2 Develop habitat assessment protocols

STRATEGIES:

- Develop protocols to assess habitats
- Set up protocols according to habitat characteristics
- Conduct a workshop with knowledgeable people to determine what is needed for assessing habitat

2.1.3 Define boundaries of use over time

STRATEGIES:

- Suggest definition in terms of geographic use and distribution at all life stages and include past utilization
- Track changes over time from changing environments such as climate changes, glacial retreat, evapo-transpiration rates, and changes in stream flow
- Explore physical underpinnings of environment, how it relates to salmon production, and how that relationship changes over time

2.1.4 Develop models of habitat suitability and use

STRATEGIES:

- Modify a habitat suitability index model for Yukon River Chinook, chum, and coho salmon; and develop model of use
- Fill gaps in knowledge with additional primary or applied research and other existing information

Photo Supplied by DFO

Photo Supplied by USFWS

2.2

Minimize future impacts to habitat

2.2.1 Identify activities with potential to impact habitat

STRATEGIES:

- Identify emerging development issues with impact potential (where future oil, railway, pipeline, etc., lines will be) so data can be collected in advance
- Develop a list of permitting and licensing systems
- Encourage and participate in interagency meetings to influence future development plans

2.2.2 Identify and promote opportunities to develop and improve legislation, regulations, and other administrative arrangements

STRATEGIES:

- Communicate about habitat regulatory process on each side of the border (from 1.6.1 C)
- Use local and traditional knowledge and expertise to encourage more effective environmental guideline and controls (for example, use Community Stewards on Canadian side)

2.2.3 Identify and participate in available planning processes

STRATEGIES:

- Inventory and monitor land/water-planning processes on an ongoing basis, and include agency involvement in the annual JTC Report
- Include DNR Habitat staff in JTC

2.2.4 Assess legislation and regulations with the potential to affect habitat

STRATEGIES:

- Provide input into environmental regulatory processes at all levels
- Determine if the regulatory review framework addresses potential impacts such as motor boat use and the affect of sport fishery on stream banks

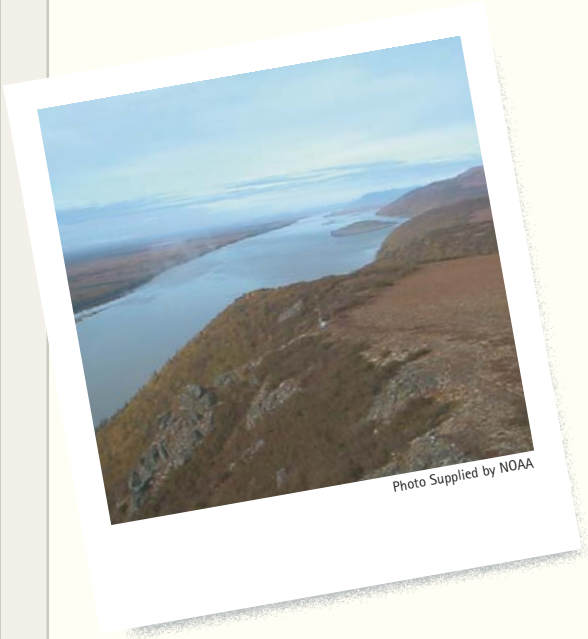

Photo Supplied by NOAA

2.3

Identify and implement restoration opportunities

2.3.1 Identify negatively affected habitats

STRATEGIES:

- Develop protocols for identifying, reporting, and cataloging negatively affected habitats
- Develop and maintain information management systems about negatively affected habitat and changes in those habitats over time
- Encourage development of natural process-based monitoring and management regimes

2.3.2 Develop, implement and evaluate restoration plans

STRATEGIES:

- Encourage participation in development of restoration plans that include assessment, intervention, and evaluation from the project level to the watershed level
- Develop a coherent framework for creating watershed salmon restoration and enhancement plans, and prioritize funding of projects that fit within those plans and have community support

2.3.3 Develop and evaluate restoration techniques

STRATEGIES:

- Encourage partnerships between local communities and recognized expertise to identify opportunities for development of restoration techniques and evaluate the success of the techniques
- Encourage development of restoration techniques appropriate to the specific circumstances and bring in appropriate fields of expertise to assist in their development
- Develop tools as necessary. Recognize regional techniques may vary

Photo Supplied by NOAA

Photo Supplied by NOAA

GOAL 3

OBJECTIVES:

- Develop mutual understandings between agencies and the public
- Build and maintain community capacity
- Encourage stewardship of the resource
- Promote public values of the salmon resource

• BUILD AND MAINTAIN PUBLIC SUPPORT OF, AND MEANINGFUL PARTICIPATION IN, SALMON RESOURCE MANAGEMENT

3.1

Develop mutual understandings between agencies and the public

3.1.1 Promote understanding and participation in the development of management plans, methods, and strategies

STRATEGIES:

- Develop a consistent consultation framework and schedule
- Rotate through the communities
- Encourage broader participation in weekly inseason teleconferences
- Encourage development and participation at exchanges
- Encourage public participation in Panel meetings
- Communicate annual Panel schedule

3.1.2 Develop inclusive communication strategy

STRATEGIES:

- Develop a positive, non-defensive strategy for JTC to disseminate information on subjects of broad public interest. JTC Report can list various websites
- Encourage proactive communication and positive stories in newspaper articles and websites
- Inventory available email distribution lists by subject so people can sign up, put it on the website and in the JTC Report
- Formalize distribution lists

3.1.3 Document and utilize traditional and local knowledge following protocols

STRATEGIES:

- Review all collected traditional and local knowledge, and review how it is used and investigate how it should be used
- Panel should specify how TEK collected from R&E funded projects will be used
- Panel needs to develop protocol for TEK data collection, being mindful of the spiritual side of salmon usage
- Be mindful of the need to consider and use TEK to the extent possible

3.1.4 Educate the public on agency missions and mandates

STRATEGIES:

- Demonstrate our missions and mandates by a positive approach and good products
- Develop public support and advocacy

Photo Supplied by DFO

Photo Supplied by ME Jarvis

3.2

Build and maintain community capacity

3.2.1 Utilize capabilities of communities

STRATEGIES:

- Promote programs that utilize capabilities, and work to enhance those capabilities (R&E projects, harvest monitoring and sampling, community stewardship, technician training courses)
- Utilize local people and other community resources in existing projects in the area
- Use graduates from college course certification program for technicians

3.2.2 Identify capabilities and needs of communities

STRATEGIES:

- Encourage proposals to R&E fund from communities
- Technical Contacts should maintain communications with communities to help assess capabilities and needs

3.2.3 Increase capabilities of communities

STRATEGIES:

- Technical Contacts can assist to assess needs and observe patterns in communities
- Technical Contacts can work with training opportunities for example, initiatives, curricula, workshops, and assist to make them available to communities
- Meet with communities to discuss needs and methods to increase capacity

3.3

3.3 Encourage stewardship of the resource

3.3.1 Educate industries with impact potential

STRATEGIES:

- Develop fact sheets – Best Management Practices, Best Practices Codes, or other guidelines or documents
- Participate at conventions, annual meetings, trade shows, and other meetings
- Identify opportunities to do the above
- Examine selectivity of various fisheries/methods

3.3.2 Participate in planning initiatives

STRATEGY:

- Recognize and promote responsible use of the resource

3.3.3 Recognize and promote responsible use of the resource

STRATEGIES:

- Develop recognition awards from the panel
- Consider impacts of research projects on fish and promote use of less intrusive sampling and handling techniques

3.4

3.4 Promote public values of the salmon resource

3.4.1 Educate public on the values of salmon and salmon habitat

STRATEGIES:

- Promote school programs for all grade levels, college courses, and other opportunities to present information
- Promote interpretive signage
- Promote viewing programs
- Increase membership in JTC, particularly from Canadian communities

3.4.2 Document cultural values of salmon resources by community

STRATEGY:

- Encourage initiatives to document cultural values of salmon resources

3.4.3 Identify opportunities to increase the values of salmon

STRATEGIES:

- Promote salmon viewing
- Develop to sell salmon leather articles

Photo Supplied by NOAA

Photo Supplied by ADFG

GOAL 4

• IMPROVE UNDERSTANDING OF SALMON BIOLOGY AND ECOLOGY

OBJECTIVES:

- Investigate relationships between salmon and their physical environment
- Investigate relationships between salmon and other organisms

4.1

Investigate relationships between salmon and their physical environment

4.1.1 Assess the influence of environment on productivity

STRATEGIES:

- Monitor temperature at strategic locations throughout the drainage (data loggers at project sites)
- Compile existing historical temperature records and hydrographs, and analyze trends over time
- Conduct technical workshop about the influence of environment on productivity
- Look at small isolated areas or special problem areas
- Encourage continuation of projects, and sources of funding like BASIS
- Summarize other research programs at JTC meeting
- Explore nutrient dynamics
- Use relationships between physical and environmental characteristics and salmon productivity to evaluate escapement goals
- Look at other measures of salmon production, for example the accumulation of marine-derived nutrients in tree cores and sediments
- Investigate elements of the environment that control productivity, maybe conduct a workshop and set up some study areas
- Determine the effects of beaver activity on stream and channel form, and on the upstream migration of juvenile and adult salmon
- Determine methods of identifying high quality ground water discharges draining to salmon rearing and spawning streams
- Evaluate the success of Fishway rearing by determining adult survival and smolt production
- Search funding sources to gather experts together to help design a Fishing Branch ecological study
- Fishway rearing survival and smolt production
- Look for funding to get experts together to help plan – design Fishing Branch ecological study with comparison stream

4.1.2 Assess the influence of salmon on environment

STRATEGIES:

- Determine the extent of marine derived nutrient (MDN) transfer to specific habitats
- Determine the effects of MDN transfer to specific habitats
- Determine the effect of spawning salmon on stream morphology

4.1.3 Describe contaminant dynamics

STRATEGIES:

- Assess the levels of contaminants in Yukon River salmon
- Evaluate the affects of contaminants on Yukon River salmon
- Identify the sources of contaminants in Yukon River salmon
- Identify methods to mitigate contaminants in Yukon River salmon

Pelly Crossing

Photo Supplied by NOAA

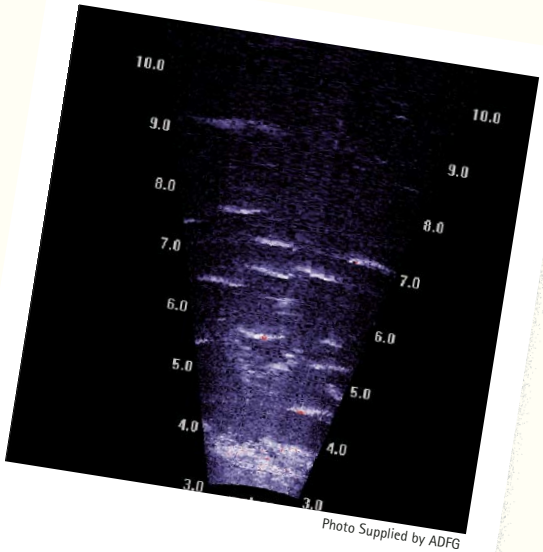

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Photo Supplied by USFWS

4.2 Investigate relationships between salmon and other organisms

4.2.2 Evaluate impacts of disease and parasites

STRATEGY:

- Continue *Ichthyophonus* study

4.2.3 Assess and monitor ecosystem structure and health

STRATEGIES:

- Compile existing biological data and traditional/local knowledge, including vegetation spatial data for salmon habitat utilization areas
- Compile existing historical water level records and analyze trends over time
- Monitor stream flow volumes throughout the drainage
- Identify and map surficial geology of drainage areas for the purposes of identifying hydrogeological trends
- Assess groundwater storage potential and hydraulic conductivity (discharge rate) of drainage basin geomorphology for salmon rearing and spawning streams

4.2.4 Investigate effects of competition

STRATEGIES:

- Determine the relationships between instream density and individual growth for juvenile Chinook salmon
- Determine the relationships between artificially propagated and wild juvenile Chinook salmon
- Determine early life feeding strategies of juvenile chum salmon
- Determine the effects of juvenile Chinook salmon densities on food organisms within streams

4.2.6 Determine predator-prey relationships

STRATEGIES:

- Determine the extent and intensity of predation by fish, birds and mammals on juvenile salmon
- Investigate the annual and seasonal importance of juvenile salmon for predators. Potential avenues of investigation include stable isotope and fatty acid analysis
- Investigate predator population function and proximal responses to variations in salmon prey abundance
- Investigate the occurrence and magnitude of juvenile salmon predation on other salmon species (for example, juvenile Chinook and coho salmon predation on emerging chum salmon fry)
- Determine the effect of channel structures on the success of predation on juvenile and adult salmon

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DEVELOPING THE PLAN

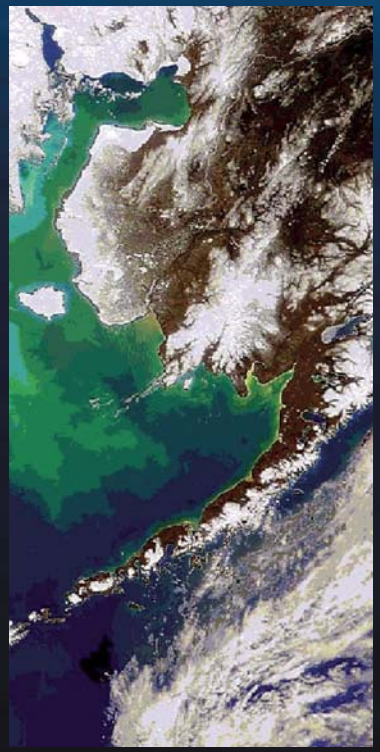

Photo Supplied by NOAA

Initially, a contractor facilitated the planning process. The first planning meeting was the week of February 21, 2001 in Whitehorse, Yukon. With the contractor's direction, the JTC used a specialized process and software to structure input. A glossary was written to define terms used within the plan. A report on the plan to date was submitted.

The JTC discussed the plan report at our fall 2002 meeting in Whitehorse. Work session discussions identified numerous research themes and needs, and were educational for JTC members with different backgrounds and interests, but the JTC thought the draft plan would benefit from additional work before proceeding to the next step. The JTC formed an ad hoc subcommittee tasked with reorganizing the plan, while maintaining its original content. The subcommittee combined two of the original goals, leaving four goals: fisheries management, habitat, public support and participation, and salmon biology.

Sub-committee members prioritized the goals, objectives and issues of the newly reworked plan in May 2003 and the following year listed all Yukon River projects under relevant issues. Each project's objectives were used to guide project placement within the plan. Analysis of information gaps helped subcommittee members develop stragegies for meeting objectives under each of the goals.

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Please feel free to contact us:

ALASKA DEPARTMENT OF FISH AND GAME (ADF&G)

Dan Bergstrom • 267-2171 • 267-2442 • dan_bergstrom@fishgame.state.ak.us
Bonnie Borba • 459-7260 • 452-1668 • bonnie_borba@fishgame.state.ak.us
Fred Bue • 459-7217 • 452-1668 • fred_bue@fishgame.state.ak.us
Hamachan Hamazaki • 267-2158 • 267-2442 • toshihide_hamazaki@fishgame.state.ak.us
John Hilsinger • 267-2417 • 267-2442 • john_hilsinger@fishgame.state.ak.us
(U.S. SECTION CHAIR)
Tracy Lingnau • 267-2121 • 267-2442 • tracy_lingnau@fishgame.state.ak.us
Susan McNeil • 267-2166 • 267-2442 • susan_mcneil@fishgame.state.ak.us
Paul Salomone • 267-2141 • 267-2442 • paul_salomone@fishgame.state.ak.us
James Simon • 459-7317 • 479-5699 • james_simon@fishgame.state.ak.us
Charles Swanton • 459-7225 • 456-2259 • charles_swanton@fishgame.state.ak.us

FISHERIES AND OCEANS CANADA (DFO)

Mary Ellen Jarvis • 393-6815 • 393-6738 • jarvism@pac.dfo-mpo.gc.ca
Sandy Johnston • 393-6729 • 393-6738 • johnstons@pac.dfo-mpo.gc.ca
(Canada Section Chair)
Pat Milligan • 393-6720 • 393-6738 • milliganp@pac.dfo-mpo.gc.ca
Al von Finster • 393-6721 • 393-6737 • vonfinsterA@ pac.dfo-mpo.gc.ca

NOAA FISHERIES

Dick Wilmot • 789-6079 • 789-6094 • richard.wilmot@noaa.gov

U.S. FISH AND WILDLIFE SERVICE (USFWS)

Jeff Adams • 456-0218 • 786-3895 • 456-0454 • jeff_adams@fws.gov
Jeffrey Bromaghin • 786-3559 • 786-3350 • jeffrey_bromaghin@fws.gov
Russ Holder • 455-1849 • 456-0454 • russ_holder@fws.gov

U.S. GEOLOGICAL SURVEY - BIOLOGICAL RESOURCES DIVISION (USGS-BRD)

Jim Finn • 786-3450 • 786-3636 • jim_finn@usgs.gov
Chris Zimmerman • 786-3954 • 786-3636 • czimmerman@usgs.gov

BERING SEA FISHERMEN'S ASSOCIATION (BSFA)

Karen Gillis • 279-6519 • 258-6688 • karen@cdqdb.org
Chris Stark • 474-6292 • 474-7204 • fntcs@uaf.edu

ASSOCIATION OF VILLAGE COUNCIL PRESIDENTS (AVCP)

Jennifer Hooper • 543-7341 • 543-5702 • jhooper@avcp.org

TANANA CHIEFS CONFERENCE (TCC)

Michael Smith • 452-8251 • 459-3851 • michael.smith@tananachiefs.org

YUKON RIVER DRAINAGE FISHERIES ASSOCIATION (YRDFA)

Jill Klein • 272-3141 • 272-3142 • yrdfa@alaska.com

U.S. BUREAU OF LAND MANAGEMENT (BLM)

Bob Karlen • 474-2315 • 474-2282 • bob_karlen@ak.blm.gov