



# **StreamNet Project**

BPA Project No.: 198810804

## **FY 2003 Work Statement**

Work to be performed under base level bridge funding

October 1, 2002 through September 30, 2003

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**Pacific States Marine Fisheries Commission**

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October 1, 2002

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## **Introduction**

StreamNet is a cooperative, multi-agency data compilation and data management project authorized by the Northwest Power Planning Council’s Fish and Wildlife Program (FWP). It is funded primarily by the Bonneville Power Administration as part of its program to protect, mitigate, and enhance fish and wildlife resources affected by the development and operation of hydroelectric facilities on the Columbia River and tributaries, as part of the Northwest Power Planning Council's Fish and Wildlife Program. Other funding has been obtained in the past from agencies including the Environmental Protection Agency and the National Marine Fisheries Service. The Pacific States Marine Fisheries Commission administers the project.

Three fourths of the project consists of sub-projects within the state fish and wildlife agencies, Columbia River Intertribal Fish Commission and US Fish and Wildlife Service to develop databases within the respective agencies and facilitate data transfer regionally. In addition to administratively housing the StreamNet sub-projects, these cooperating agencies also contribute in kind support. The kind and amount of support varies between agencies. All agencies provide at least some salary support for their StreamNet Project Leader (2 months from CRITFC, 1 month from ODFW, 3 months from IDFG, 8 months from MFWP, 10 months from FWS, and 12 months from WDFW). Several provide use of servers or other computer equipment and services that are not covered by charges for indirect costs. All contribute time by biologists and in some cases data entry staff to provide data to the project. MFWP provides \$65,000 worth of in-state travel, office space, computers and office supplies.

This document is the FY2003 Work Statement for the base components of the StreamNet Project. Not all tasks identified in the Work Statement apply to all participating agencies. Each participating agency contributes work to a subset of the project tasks, with their responsibilities detailed individually for each task. The intent of this format is to provide clarity concerning the total activities addressing each project task and the role of each project participant. This combined Statement of Work covers Federal Fiscal Year 2003, from October 1, 2002 through September 30, 2003.

The StreamNet Project compiles, manages and distributes information related to fish resources in the Columbia River basin, with additional information available for the rest of the Pacific Northwest. The state, tribal and federal fish and wildlife agencies collect and utilize data related to the region's fish and wildlife resources to meet their own mandates. A subset of these data, primarily the annually collected types of information that are routinely used to monitor trends within fisheries and populations and provide management information, are compiled by StreamNet into regionally standardized formats and publicly distributed. In this manner, data common to fisheries management but collected and stored in multiple formats by the individual agencies are standardized and made uniformly available basin wide. StreamNet also ties all data to the regional 1:100,000 scale routed hydrography (GIS stream network) so that different kinds of data can be compared on a geographic basis and mapped. The project utilizes the Internet as its primary means of data distribution, but also provides custom data services to FWP participants. The StreamNet web site provides access to information in a queryable database and also provides maps, individual data sets not contained in the queryable database, and library references. All data in the StreamNet database are referenced to source documents that are housed in the StreamNet Library.

Work priorities for FY 2003 include updating existing long term data sets, managing the data and infrastructure necessary to maintain and deliver data, maintaining the StreamNet Library, providing data services to regional entities associated with the Fish and Wildlife Program, and project administration. This year the project proposal was written to describe actions already underway plus new data types and data services that could be provided if deemed of regional priority and if funded. The Rolling Provincial Review process under which the proposal was being considered was delayed, however, so this statement of work contains only the minimum ongoing baseline activities of the project under a level funded bridge budget. Under base funding only, the majority of work remains focused on anadromous species as in the past. The proposal included increased emphasis on data related to resident species and on data types that the project has not been able to pursue previously due to limitations of staff time. If the review process authorizes those activities, this baseline work statement will be amended.

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## Objective 1 Data acquisition and development

Support the need for region wide fisheries data for research, monitoring, modeling, and management through acquisition and regional standardization of new information and updates to previous information for priority fishery data types. Data types may be addressed by all data providing agencies, or for specific data types by a single cooperating agency on behalf of the entire project. This Objective addresses both anadromous and resident fish species, although priorities may differ. The tasks under this objective are identified as high or low priority under the constraints imposed under base level funding. Work on the low priority types will largely be limited to preliminary development or scoping unless new funding is approved.

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Objective 1 Data acquisition and development

### Task 1 Anadromous distribution and life history (habitat use)

Document the occurrence, distribution and life history characteristics of anadromous fish species. Project participants have placed a high priority on updating these data during the fiscal year, utilizing a newly adopted Data Exchange Format (DEF). The new DEF represents a significant new workload, but will lead to more regionally consistent distribution information. This is priority 1 under base funding.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
IDFG	1	Convert Idaho's existing anadromous fish distribution into the new generalized fish distribution data exchange format.	9/30/03	Distribution table submitted in data exchange format.	Brown
ODFW	1	Update (to a minimal extent), maintain, correct and exchange anadromous fish distribution and documentation information. Also, evaluate the Oregon Museum collections database for potential utility in enhancing our historic distribution information.	Ongoing	Errors corrected, newly discovered distribution based on documented sightings, and distribution and documentation data based on these changes is exchanged	Bowers
WDFW	1	Continue updating data as received and actively solicit data as warranted. Convert tabular and spatial data to the current revised StreamNet DEF and submit to PSMFC.	12/31/02	Salmon, steelhead, bull trout data exchanged	O'Connor, Sikora

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Objective 1 Data acquisition and development

**Task 2 Resident fish distribution and life history (habitat use)**

Document the occurrence, distribution and life history characteristics of resident fish species. This will be a lower priority, except for Montana, under base level bridge funding. Existing resident fish distribution will be maintained, but development of new data or data for new species will be limited due to the funding level. This is lower priority under base funding, except for Montana.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
IDFG	1	Participate in the Westslope Cutthroat Trout Conservation Assessment. In response to a decision by the 9th District court to require a new status review for westslope cutthroat trout, the states of Idaho, Montana, Washington, and Oregon, along with the Fish and Wildlife Service and the Forest Service, have agreed to work together to prepare the new status review. IDFG/StreamNet will send staff to several workshops to facilitate the capture of data that will include distribution. The data will be prepared for inclusion into StreamNet.	9/30/03	Updated distribution data for westslope cutthroat trout.	Butterfield
IDFG	2	As a result of our participation in job 1 of this task, we will obtain the data from a similar effort for Yellowstone Cutthroat Trout. The data will be prepared for inclusion into StreamNet.	9/30/03	Updated distribution data for Yellowstone cutthroat trout.	Butterfield
IDFG	3	Update the StreamNet distribution database using other sources, including collection permit reports, historical survey records, and information from published reports.	9/30/03	Updated distribution data for species in our internal database.	Murdock
MFWP	1	Complete Distribution and Use Types dataset from data collected from biologists, documents and reports during 1999-2000 using LLID stream routes. Exchange the data to the StreamNet database in the approved DEF format.	01/01/03	Exchanged distribution data in DEF format	Carson
MFWP	2	Visit MFWP biologists in 2003 to collect 2001-2002 fish distribution and supporting survey data and references. Obtain data from federal biologists using our developed interface. Input all this information into the MRIS tables. Develop some QA/QC on data before distribution.	8/01/03	Data inputted and exchange.	Carson
ODFW	1	Maintain existing resident distribution information.	Ongoing	Existing resident distribution maintained and available	Bowers
WDFW	1	As time and funding permits, scope data availability and work with WDFW staff to enhance existing resident distribution data collections.	Ongoing, quarterly	Quarterly progress report, cutthroat data if possible	O'Connor, Sikora

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Objective 1 Data acquisition and development

**Task 3 Adult abundance in the wild**

Develop and maintain information on adult abundance for native fish species, resident and anadromous, including escapement, redd counts, peak spawner counts, trap counts, dam and weir counts, and resident fish populations (where calculated). Also included in this data category are data gathered during spawning ground surveys regarding straying of hatchery fish onto spawning areas, i.e., marked/unmarked ratio. Priority is given to updating these data through 2001. This is priority 1 under base funding.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Update mainstem Columbia and Snake River dam counts through 2002 and provide updated data to the StreamNet database.	3/31/03	Updated dam count data sets exchanged.	Forrest
CRITFC	2	Update available tribal spawning ground survey data.	6/30/03	Updated available spawning ground data sets.	Forrest
IDFG	1	Complete the compilation of the 2001 field season redd count data from IDFG. Included in these data are carcass counts and counts of live fish. Prepare the data for inclusion into StreamNet and submit.	4/1/03	Redd count data for the 2001 field season submitted to the StreamNet database	Brown
IDFG	2	Start compilation of the 2002 field season redd count data from IDFG. The data set will not be complete, however, because all reports may not yet be available.	9/30/03	Redd count data for the 2002 field season compiled.	Brown
MFWP	1	Collect all 2002 survey data during field office visits.	05/01/03	Data collection	Carson, Hutten
MFWP	2	Input 2002 data into MFISH, including trend, count and references. We will explore which DEF is appropriate for resident fish population surveys (Matches the Draft Juvenile Abundance Table)	06/01/03	Data inputted. DEF discussion with Steering Committee.	Carson
ODFW	1	Update existing anadromous, resident, and non-game abundance and index trends through 2001 and opportunistically collect new trend information. Compile and exchange marked-to-unmarked ratio data (relative to dam, weir, spawning ground, etc. counts) and/or hatchery-fraction data for an undetermined location in the Oregon portion of the Columbia basin.	12/31/02, 4/15/03, 9/15/03	All Columbia Basin trends where new information is available are updated with available information	Hurn
WDFW	1	Continue to update and enhance the existing natural spawner database (escapement estimates and/or detailed counts) for available species.	Ongoing, 8/31/03 final update	2001 anadromous data updated	Woodard, Sikora, (Smith)
WDFW	2	After we enhance the dam table with more records, consult the biologists to scope and collect any existing dam and weir counts that might not already be captured in our on-going Adult Abundance collection.	Ongoing, quarterly	Quarterly progress report, plan to capture data	Woodard, Sikora, (Smith)

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Objective 1 Data acquisition and development

**Task 4 Hatchery releases**

Develop and maintain information on the release of hatchery reared fish. Priority is given to updating anadromous release records using RMIS data for anadromous species through 2001. Release data for resident species under base funding will be developed only where the data are readily available (primarily Montana). Efforts this year will focus on creating cross references between PSC release codes and LLID stream location identifiers. We will explore means of providing unrolled data on specific release locations rather than more general PSC codes. This is priority 1 under base funding

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
FWS	1	For anadromous hatchery releases, compile FWS hatchery release data, with added CWT information. Transform data to format 040. Submit most current release year hatchery release data to PSMFC via USFWS WWFRO.	9/30/03	Database file in PSC format 3.2 submitted to the database	Pastor
FWS	2	For resident fish, explore availability of release data relative to FWS facilities. Provide resident fish production and release data to PSMFC.	9/30/03	Exchange of resident fish data to the StreamNet database	Pastor
IDFG	1	Crosswalk PSC codes for Idaho hatchery releases in the Regional Mark Information System (RMIS) to StreamNet's stream georeferencing system of LLIDs and measures.	9/30/03	Table with PSC to LLID measures conversion.	Butterfield
IDFG	2	Complete the crosswalk of IDFG catalog numbers to StreamNet's stream georeferencing system of LLID and measures.	9/30/03	Table with Catalog Number to LLID measures conversion.	Butterfield
MFWP	1	Explore current DEF for hatchery releases and provide Montana data in exchange format.	12/01/02	Exchanged Data set	Hutten
ODFW	1	Update anadromous hatchery releases through 2001.	7/30/03	Updated release data exchanged with StreamNet	Herber
Region	1	Assist contributing projects with cross referencing PSC codes with LLID codes.	Ongoing	Assistance provided as requested	Butcher
WDFW	1	For anadromous species, finish researching, compiling, converting existing WDFW anadromous release data as detailed, "unrolled" records. Submit the data directly to StreamNet (instead of via RMIS).	4/30/03	Salmon, steelhead historic and current unrolled release data through 2001	Sikora, (Lensegrav)
WDFW	2	WDFW resident stocking data is fractured in several collections by year. Work at researching, compiling, and converting data for any years we have finalized at a given time, until all collections are submitted. (Progress with this data set relies heavily upon initial improvements to our Lakes spatial layer).	Ongoing, quarterly	Quarterly progress report, data submission(s) if possible	Sikora, (Lensegrav)

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Objective 1 Data acquisition and development

**Task 5 Hatchery returns**

Develop and maintain information on the return, disposition and straying of adult fish returning to hatcheries, including information on coded wire tags. This is an anadromous related task only. Priority will be placed on updating total return and egg take data through 2001. Development of disposition data is lower priority and would require additional resources. This is priority 1 under base funding.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
FWS	1	Compile FWS hatchery return data for FWS hatcheries for the most recent return year and submit to the regional database. FWS will also account for all adults returning to federal hatcheries.	9/30/03	Updated HatchRet file	Pastor
IDFG	1	Complete compilation of the 2001 field season hatchery return data from IDFG and exchange with StreamNet database.	4/1/03	Hatchery return data for the 2001 field season submitted to the database.	Brown
IDFG	2	Start compilation of the 2002 field hatchery return data from IDFG. Data will be incomplete because all reports may not be available within this project year.	9/30/03	Hatchery return data for the 2002 field season begun.	Brown
ODFW	1	Compile data on returns to ODFW hatchery facilities (updated through 2001 returns where possible).	6/30/03	Updated return data exchanged with StreamNet	Herber
WDFW	1	Continue to update and enhance the existing hatchery return database for available species.	3 mos. after new DEF finalized	2001 anadromous data exchanged	Woodard, Sikora

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Objective 1 Data acquisition and development

**Task 6 Dams and Fish Passage Facilities**

Develop and maintain information on dam facilities. Primary emphasis is now on maintenance of existing information, with occasional updates as necessary. This is priority 1 under base funding.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
IDFG	1	Update LLID measures and geographic coordinates for Idaho dams in the National Inventory of Dams	12/30/02	Data table with updated location values.	Butterfield
MFWP	1	Provided an updated Montana dams spatial coverage and associated data in the StreamNet exchange format if additions, deletions or modifications are made.	3/31/03	Updated data set, if necessary	Hutten

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ODFW	1	Maintain and update, as needed, based on errors found in the Oregon dam and fish passage facilities information.	Ongoing	Corrected dam and fish passage facility information exchanged	Bowers, Brodeur
WDFW	1	Update the dam database adding records and improving field entries as warranted.	7/30/03	Updates including new records and/or field improvements	Sikora, (Lensegrav)

Objective 1 Data acquisition and development

**Task 7 Hatchery facilities**

Develop and maintain information on anadromous and resident hatchery facilities, including information on location, design, management and authorization. Primary emphasis is now on maintenance of existing information, with occasional updates as necessary. This is priority 1 under base funding.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
FWS	1	Update hatchery facility records as needed, Update hatchery water records as needed. Update FWS data sets with 2002 data and submit to PSMFC	9/30/03	Updated Hatchery file submitted to the StreamNet database	Pastor
IDFG	1	This is a maintenance item for IDFG. We will maintain this database by making modifications for staff changes or other necessary fields. Prepare any updates for inclusion into StreamNet.	As needed	Updated data in data exchange format.	Brown
MFWP	1	Update the StreamNet hatchery database with Montana's public and private facilities. Exchange with StreamNet upon completion.	12/15/02	Updated database exchanged	Hutten
ODFW	1	Maintain and update, as needed, based on errors found in the Oregon hatchery facilities information.	Ongoing	Corrected hatchery facilities information exchanged	Bowers, Brodeur
WDFW	1	Update the hatchery database adding records and improving field entries as warranted, including record updates for related tables (i.e. HatcheryXProduction data).	As needed, HatXProd 8/31/03	Updates including new records and/or field improvements	Sikora, (Lensegrav)

Objective 1 Data acquisition and development

**Task 8 Harvest**

Develop and maintain information on sport and commercial harvest. Higher priority is assigned to anadromous species. This is priority 1 under base funding.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Complete and update ocean and Columbia River catch data through 2002.	9/30/03	Updated harvest data sets exchanged.	Roger

IDFG	1	We will evaluate IDFG harvest records to determine the feasibility of sending harvest data to StreamNet. If possible within our existing work plan, we will submit harvest data to for inclusion into StreamNet	9/30/03	Report on feasibility to include IDFG harvest data.	Brown
ODFW	1	Compile and exchange Oregon sport harvest data through 2000, in three submissions.	12/31/03, 4/15/03, 9/15/03	All Columbia Basin sport harvest trends where new information is available are updated with available information	Hurn
WDFW	1	Re-submit any existing StreamNet Washington harvest data, updating it per StreamNet's current location coding format to validate and correct the conversion that was completed by non-WDFW personnel.	1/31/03	Enhancement to existing StreamNet data	Sikora
WDFW	2	Although we should only be in maintenance mode for this data set, WDFW re-organized their data collection process several times since our last StreamNet update (and it's still in flux) so it poses a large workload. As such, we need a large allotment of time before renewing this effort. As funding and time permits, compile freshwater harvest for key Columbia Basin salmonid stocks for both anadromous and resident data, using existing WDFW data sets (i.e. Angler Fish Database) and other sources. Standardize the data (to stock if possible), convert and submit it to PSMFC.	Ongoing, quarterly	Quarterly progress reports, data submission if possible	Sikora

Objective 1 Data acquisition and development

**Task 9 Habitat restoration / improvement projects**

Acquire data sets related to habitat restoration / improvement projects from the multiple agencies, tribes and organizations within the Columbia Basin and compile and maintain them in standardized, consistent formats. This data category is still being organized, but interest in this information is growing as there is no consistent source of this information on a regional basis. This is priority 2 under base funding, and will be addressed as time and other priorities allow.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
MFWP	1	Continue to collect, centralize and maintain all stream restoration projects data for Montana using the "Future Fisheries Interface" which StreamNet staff maintains and the Fisheries Division inputs data. Exchange data to the Region twice during the year.	3/31/03, 9/30/03	Updated data exchanged	Hutten
ODFW	1	Maintain and update, as needed, based on errors found in Oregon's existing tabular restoration data. Maintenance only; no new updates are planned.	Ongoing	Exchange corrected tabular restoration data	Brodeur

WDFW	1	If funding and time permits, finalize conversion of Washington's IAC's (Interactive Committee for Outdoor Recreation) PRISM database for WRIA 5 records and submit to StreamNet. Build an ArcView project file that incorporates Washington Salmon Recovery Funding Board data, basin-specific salmon habitat limiting factors (LFA) and potentially SaSI stock status. Assess if this tool allows managers to effectively compare relative expenditures (and the factors they intend to address) to identify priority issues in the basin and the utility of creating similar products for other basins.	Ongoing, quarterly	Quarterly progress report, data submission if possible	Sikora, (Lensegrav)
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Objective 1 Data acquisition and development

### Task 10 Barriers and diversion/screening

Develop and maintain data sets for barriers to fish migration and diversion structures with information on screening status. This category is still being organized. Existing data on adult barriers will be maintained and updated as practical. Other sources of data will be explored. Work on juvenile barriers, culverts and diversion screening may require additional resources. The primary emphasis is on anadromous species except in non-anadromous areas. This is priority 2 under base funding, and will be addressed as time and other priorities allow.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
IDFG	1	Participate in the Westslope Cutthroat Trout Conservation Assessment. In response to a decision by the 9th District court to require a new status review for westslope cutthroat trout, the states of Idaho, Montana, Washington, and Oregon, along with the Fish and Wildlife Service and the Forest Service, have agreed to work together to prepare the new status review. IDFG/StreamNet will send staff to several workshops to facilitate the capture of data that will include barriers. The data will be prepared for inclusion into StreamNet. Delivery is dependent on the Forest Service completing the database.	9/30/03	New barrier data for westslope cutthroat trout exchanged	Butterfield
IDFG	2	As a result of our participation in work component 1 of this task, we will obtain the data from a similar effort for Yellowstone Cutthroat Trout. The data will be prepared for inclusion into StreamNet. Delivery is dependent on the Forest Service completing the database.	9/30/03	New barrier data for Yellowstone cutthroat trout exchanged	Butterfield
MFWP	1	Continue to collect barrier location, species affected and other fields on stream barriers in Montana. Information will be collected on all species regardless of life history. Exchange Barriers data with the StreamNet database.	3/31/03	Data in DEF and exchanged to the StreamNet database	Hutten, Lindstrom

ODFW	1	Compile and exchange Oregon fish screening and diversion data assuming a new DEF is adopted. If no DEF is approved, data will be posted on the NRIMP site and linked to StreamNet as an 'as is' submission.	4/15/03	Exchanged screening/diversion information	Brodeur
ODFW	2	Update and maintain Oregon's barrier data and minimal fish barrier data development based on new barrier information.	Ongoing	Exchanged barrier location information and minimal fish barrier information, based on new barrier location information	Bowers, Brodeur
WDFW	1	As funding and time permits, review existing Washington state barriers and/or screening data and identify additions and corrections needed and plan for future exchanges.	Ongoing, quarterly	Quarterly progress report, data submission if possible	Sikora, (Lensegrav)

Objective 1 Data acquisition and development

### **Task 11 Juvenile data, abundance and outmigration**

Develop and maintain information on smolt production (as determined from smolt traps), juvenile abundance (as determined through snorkel, electrofishing, and other surveys), and smolt density model estimates. Primary emphasis will be on maintaining the existing smolt density model data and development of a DEF for these data. The rest of the work for this data category is still under development and will require additional resources to accomplish. This is priority 2 under base funding, and will be addressed as time and other priorities allow.

<b>Project</b>	<b>Job</b>	<b>Planned work elements</b>	<b>Date Due</b>	<b>Deliverable</b>	<b>Lead</b>
CRITFC	1	Seek to obtain tribal data on smolt abundance. Inform Steering Committee of data availability.	9/30/03	Report to Steering Committee. Available data sets exchanged	Forrest
IDFG	1	Depending on the adoption of an appropriate StreamNet juvenile data exchange format (see Task 3.4), prepare existing IDFG juvenile trapping data for inclusion in StreamNet.	9/30/03	Juvenile abundance data in data exchange format.	Murdock
IDFG	2	Code the IDFG General Parr Monitoring database to StreamNet's georeferencing for streams using LLID and measures.	9/30/03	General Parr Monitoring database with LLID and measures attached	Butterfield
MFWP	1	Pursue incorporation of resident fish survey data into the juvenile abundance DEF, if approved.	9/30/03	Potential data exchange if DEF is adopted	Carson
ODFW	1	Assist in development of a DEF and exchange 10 Oregon juvenile abundance and/or outmigration estimate records (not counts)	9/30/03	At least 10 Oregon Juvenile Abundance records exchanged, if DEF is approved	Hurn
WDFW	1	As funding and time permits, keep informed about other WDFW agency staff efforts to organize the juvenile data and scope existing juvenile data to plan future conversion and submission efforts.	Ongoing, quarterly	Quarterly progress report, data submission if possible	Sikora

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Objective 1 Data acquisition and development

### **Task 12 Age**

Develop and maintain information on age/sex composition of returning adults, primarily for anadromous species. This is a medium priority, with the primary focus on developing data for a few test locations as a means of testing data organization/format and utility. Remaining DEF issues will be resolved. This is priority 2 under base funding, and will be addressed as time and other priorities allow.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Use CRITFC age data on sockeye populations and Bonneville Dam sampling to evaluate and develop an age DEF.	9/30/03	A workable DEF format for age data.	Roger
FWS	1	Update age and sex data for the most recent return year.	9/30/03	Updated Age table	Pastor
IDFG	1	Complete the compilation of the 2001 field season age data using hatchery returns data from IDFG.	4/1/03	Age composition data for the 2001 field season.	Brown
IDFG	2	Start compilation of the 2002 field age data from IDFG. Data will likely be incomplete because all reports may not be available by the end of the fiscal year.	9/30/03	Age composition data (partial) for the 2002 field season.	Brown
ODFW	1	Compile age frequency data for an as-yet undetermined basin or hatchery in the Oregon portion of the Columbia Basin as a test case for this data type.	5/30/03	Determine target basin or hatchery and exchange all available age data	Hurn
WDFW	1	Stay in step with the other StreamNet cooperating agencies' efforts to research, compile, convert and submit age data for natural spawner data in one prototype subbasin (probably Lower Columbia R). This effort is to assess any problems with the existing format and standardization with other agencies' data , and plan for further data submittals.	9/30/03	Salmon and Steelhead Data for one test subbasin, plan for future work	Woodard, Sikora

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Objective 1 Data acquisition and development

### **Task 13 Production factors and run reconstruction**

Develop and maintain information on survival, production factors, spawner / recruit estimates, and run reconstruction. This is currently a low priority, but the existing spawner / recruit estimate data will be maintained. This is priority 2 under base funding, and will be addressed as time and other priorities allow.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Coordinate with ESA recovery planning and NWPPC subbasin planning efforts to capture available anadromous fish and bull trout productivity data for eventual DEF testing and inclusion in StreamNet.	9/30/03	Available productivity data sets.	Roger

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Region	1	Assist cooperating projects, as needed, in determining availability and potential acquisition of these data.	As needed	Assistance, and work with Steering Committee on decision on how to deal with these data.	Schmidt
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Objective 1 Data acquisition and development

### Task 14 Habitat

Acquire data sets related to fish habitat (including water quality, stream/watershed habitat quality, temperature, invertebrates, and miscellaneous habitat data) from the multiple agencies, tribes and organizations within the Columbia Basin and compile and maintain them in standardized, consistent formats or archive them in original format, as appropriate. This is currently a low priority under the existing contract, and data development will be pursued only on other funding. Data developed on other funding will be organized and included in the StreamNet database. This is priority 2 under base funding, and will be addressed as time and other priorities allow.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Coordinate with ESA recovery planning and NWPPC subbasin planning processes to capture watershed assessment data for DEF testing and eventual inclusion into StreamNet.	9/30/03	Available watershed assessment data sets	Roger
Region	1	Assist cooperating projects, as needed, in determining availability and potential acquisition of these data.	As needed	Assistance, and work with Steering Committee on decision on how to deal with habitat data	Schmidt

Objective 1 Data acquisition and development

### Task 15 Genetics

Develop and maintain information on genetic information and data sources for areas where genetics data exist. Efforts this year will concentrate on organizing existing information, and then working on a Data Exchange Format. This is priority 2 under base funding, and will be addressed as time and other priorities allow.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Work through the coast-wide genetics work group to update the genetics data catalog.	9/30/03	Updated genetics data catalog.	Forrest
MFWP	1	Obtain results from genetic analysis from the University of Montana Genetics Lab for sampled populations of Montana's species of special concern.	Ongoing	Updated genetics database	Carson
MFWP	2	Update fish distribution table when new genetic samples affect fields / records. Finalize a GeneticSample table field to facilitate querying purity	Ongoing	Up-to-date distribution data	Carson
MFWP	3	Exchange data to the StreamNet regional database when a DEF is approved by the Steering Committee.	When possible	Exchanged genetics data	Carson

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Objective 1 Data acquisition and development

**Task 16 Other data sets**

On an opportunistic basis, conduct scoping or exploratory level work on the availability of other types of fish related data, as requested by FWP participants. Actual acquisition, standardization, georeferencing and distribution of these data would be dependent on funding for new work. This is priority 2 under base funding, and will be addressed as time and other priorities allow.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
IDFG	1	We will work with IDFG and other agency staff to facilitate either the incorporation of their data into StreamNet or independently posting their data on the StreamNet web site.	Ongoing	Potentially various independent data sets	Butterfield
MFWP	1	Will explore as opportunities arise	Ongoing	Data made available as opportunities arise	All staff
ODFW	1	Develop data sets outside Oregon StreamNet's base efforts if requested by subbasin planners.	Ongoing, if requested	Initial Subbasin Planning related data sets developed	Hurn
ODFW	2	Compile and exchange Oregon's carcass placement results for 2001 as an 'as-is' data set.	8/31/03	2001 Carcass placement information accessible via StreamNet website	Hurn
Region	1	Advise and assist data developers with other data sets not currently in the StreamNet system. Low priority, and within current resources only.	On request	Assistance or advice to data Developers	Butcher, Banach
Region	2	Acquire data sets from other entities where the data would be useful in relation to the fisheries data available in the StreamNet database and for regional planning and management needs. This may include data for resident species as located through the resident fish data inventory conducted last fiscal year. Initial efforts may be only exploratory in nature, and will only be pursued within existing resources and as data become available.	Ongoing, opportunistic	Knowledge of available data sets, and acquired data sets posted on the StreamNet web site in original format.	Banach
Region	3	Evaluate data resources discovered during FY02 that were originally obtained by the precursor projects to StreamNet (CIS and NED). These resources include data and reports on floppy disks, and hard copy reports. Determine the types of data that are available in each format and that are already included in the StreamNet database. Determine the feasibility and value of reclaiming lost data and the workload required. Prepare a report making recommendations to the Steering Committee for the possible inclusion of those data not already included in the StreamNet database.	5/1/03	Report on work required to recapture CID/NED data.	Banach

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## Objective 2      **Data management and delivery**

Provide high quality data management services, with specific emphasis on the creation of regionally consistent data sets and the timely delivery of data to users in formats that meets their policy, planning, monitoring, and management needs

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Objective 2      Data management and delivery

### **Task 1      Maintain and enhance the tabular database systems at the project and regional levels**

Maintain functional tabular database programs at the agency and regional levels to make consistent tabular data sets for anadromous and resident fish available through the StreamNet online database system. At both the regional and agency levels, provide database management and administration necessary for accomplishing StreamNet objectives, to include: 1) maintaining and updating the hardware and software systems necessary to support the StreamNet project, and 2) enhancing or optimizing StreamNet database structures and capabilities.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Develop prototype electronic data exchange procedures with the Yakama Nation to simplify updates of fish abundance data.	6/30/03	A prototype system to update Yakama fish abundance for StreamNet directly from tribal Databases	Forrest
IDFG	1	Complete the administrative programs to convert locally held data to StreamNet data exchange format. This includes: redd counts, hatchery returns, hatchery facilities, and references. Depending on the adoption of an appropriate StreamNet juvenile data exchange format (see Task 3.4), juvenile trap data may also be included.	9/30/03	Functioning program modules that automate the transfer of IDFG data into StreamNet data exchange format.	Murdock
IDFG	2	Prepare documentation of the Idaho Fish and Wildlife Information System (IFWIS). IFWIS is the information system at IDFG that contains the locally held and compiled StreamNet data. Documentation should include resource diagrams, entity relationship diagrams, database standards document, programming standards document, and database metadata.	9/30/03	Documents, charts and graphs that document the IFWIS infrastructure and database.	Murdock
IDFG	3	Maintain existing modules of IFWIS, including the spawning ground, juvenile trapping, collecting permit reports, and the reference programs. This includes maintenance of data integrity in the IFWIS database.	Ongoing	Functioning databases and applications at IDFG/StreamNet	Murdock
IDFG	4	Maintain the hardware and software that comprises IFWIS. Provide system administration, backup and recovery, and security.	Ongoing	Functioning hardware and software infrastructure at IDFG/StreamNet	Murdock



IDFG	5	Build additional IFWIS components, interfaces or tools as required to complete other tasks. Specific jobs will be identified on an as needed basis, but may include tools to evaluate existing trend-based data.	Ongoing, as needed	New or updated databases and applications for managing the internal IDFG/StreamNet data.	Murdock
MFWP	1	Provide a high-quality, state-level data management system, emphasizing coordination with StreamNet regional staff, MFWP and other state and federal natural resource agencies to encourage the use of consistent data attributes and data sets among all agencies.	Ongoing	well-coordinated and integrated data management systems	Hess-Herbert and staff
ODFW	1	Maintain and enhance all existing Oregon tabular database systems, including the ODFW Library software, the Incidental Fish Observation Database, the Fish Presence Survey Database, and the Oregon Fish Finder Database. This work includes metadata development and maintenance, and QA/QC activities.	Ongoing	Necessary development and modifications to keep these systems functional	Herber, Cooney, Brodeur
Region	1	Maintain and upgrade as necessary the StreamNet database servers and software. Administer the SQL Server database. Maintain and optimize database structure and function. Advise on software acquisition for the StreamNet regional office.	Ongoing	Functional and improved database servers and software	Kinney
WDFW	1	Work with internal WDFW staff to improve the agency data collection efforts to allow more efficient compiling in the internal intermediate WDFW StreamNet database and/or StreamNet databases.	Ongoing	Consultation, tools, databases, programming as warranted	Sikora, Woodard
WDFW	2	Coordinate activities to maintain all new and existing internal WDFW-StreamNet tabular databases, general WDFW-StreamNet procedures and specifically StreamNet data submission procedures. Coordination between agencies with co-compiling responsibilities (i.e. CRITFC's efforts in the Yakima watershed). Maintain the hardware and software necessary to support the database system.	Ongoing	Tabular data, coordination, functional database system including adequate documentation	Sikora, Woodard

Objective 2 Data management and delivery

**Task 2 Maintain and enhance the GIS and hydrography database systems at the project and regional levels**

Maintain functional Geographic Information System programs at the agency and regional levels to make consistent GIS layers for anadromous and resident fish available through the StreamNet online database system. At both the regional and state levels, provide GIS management and administration necessary for accomplishing StreamNet objectives, to include: 1) maintaining regional and agency-level GIS systems, including hardware and software, and 2) maintaining a regionally consistent hydrography layer at the 1:100,000 scale.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
IDFG	1	Maintain existing ArcView tools, including the data request project, the Geographic Information Locator program, the Idaho Projector extension, and the Fish Tools project.	Ongoing	Functioning GIS applications.	Butterfield
IDFG	2	Maintain the hardware and software that comprise IDFG/StreamNet GIS. Provide system administration, backup and recovery, and security.	Ongoing	Functioning hardware and software.	Butterfield
IDFG	3	Build additional GIS data sets, interfaces or tools as required to complete other tasks. Specific jobs will be identified on as needed basis.	Ongoing, as needed	Potentially new ArcView data sets and tools.	Butterfield
IDFG	4	Complete the migration to ArcGIS 8.2. We will continue to maintain and support ArcView 3.x.	12/30/02	New license manager installed and access to ArcGIS by all IDFG/StreamNet and IFWIS staff.	Butterfield
MFWP	1	Maintain the MFWP StreamNet GIS system.	Ongoing	Functioning GIS system	Hess-Herbert
ODFW	1	Maintain and enhance all existing Oregon GIS database systems. This work includes metadata development and maintenance, and QA/QC activities.	Ongoing	Necessary development and modifications to keep these systems functional	Bowers
Region	1	Integrate the functioning of the GIS system with the StreamNet fisheries and habitat database in support of the query system. Maintain up-to-date cross tables used via the StreamNet web interface to select information by geographic area.	Ongoing	Cross tables up to date and online delivery of data by geographic criteria	Butcher
Region	2	Maintain functioning GIS software at the regional office (two seats) + server products, including installing new software and making upgrades to old software, fulfilling contract obligations to ESRI (software vendor), and keeping abreast of GIS software developments that could be beneficial to the project.	Ongoing	Functional regional GIS system	Butcher

Region	3	Maintain a regionally consistent 1:100,000 hydrography layer (the PNW Reach File) for internal use and for public access, through consultation with the state stewards of the hydrography.	Ongoing	1:100,000 hydrography layer and documentation available for project use and on line	Butcher
Region	4	Maintain and improve the LLID/NHD hydrography conversion tool. Immediate need is to complete error trapping routines and polish the final application.	3/31/03	Completed LLID/NHD conversion tool.	Butcher
Region	5	Increase data usability with new GIS software and by converting from coverage format to geodatabase format.	11/30/02	GIS database converted to geodatabase format.	Butcher
WDFW	1	Perform any work required to spatially-enable data following standard procedures. Coordinate activities to maintain all new and existing WDFW internal spatial layers related to StreamNet tabular and spatial submissions including but not limited to 100K hydro (streams and lakes), marine areas, distribution, production (hatchery and dam), and release site layers. Manage regionally standard location codes (LLIDs) and cross-reference files that spatially enable data. Submit any spatial layer as warranted to coordinate with tabular exchanges. Maintain the hardware and software necessary to support all system functions.	Ongoing	Spatial Layers, spatially enabling cross-references, tabular coordination, functional GIS system including adequate documentation.	Hudson, Sikora, (Lensegrav)

Objective 2 Data management and delivery

**Task 3 Data management and coordination**

This task includes GIS and tabular data management at the regional and cooperating project levels after they have been developed. Once data are submitted to the regional database, assure they fit established formats, perform appropriate error checks, and load the data into the StreamNet database and perform routine management of the data. The region and contributing agencies will collaborate to fix problems and assure seamless loading of data into the database. The cooperating projects will perform similar functions for their data.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
IDFG	1	On an opportunistic basis, coordinate with IDFG fishery programs to facilitate the use of data standards that are consistent with StreamNet and other regional standards.	Ongoing	Increased coordinate and cooperation between StreamNet and IDFG fishery projects.	Butterfield
IDFG	2	Prepare metadata for all locally held GIS layers.	9/30/03	FGDC compliant metadata.	Butterfield
IDFG	3	Maintain and update the StreamNet hydrography, including additions and modifications to the LLID stream and lake layers. Submit all changes to PSMFC for inclusion into the StreamNet database.	Ongoing	Updated hydrography in LLID format.	Butterfield

IDFG	4	Coordinate with PSMFC to assure all data submissions are in StreamNet data exchange format.	Ongoing	Effective communication and coordination between IDFG/StreamNet and PSMFC regarding data deliverables.	Brown
IDFG	5	Conduct a review of IDFG redd count trends. We have identified that some historic redd counts have changed significantly in location, length or method, yet remain in the same StreamNet trend. We will evaluate each existing trend and create new trends where necessary. When completed, the updated data will be prepared for and updated in StreamNet.	9/30/03	Newly defined redd count trends. New data set submitted for inclusion into StreamNet.	Murdock, Brown
MFWP	1	MFWP Staff will assist staff as needed.	Ongoing	Quality checked and accurate exchanged data	all staff
MFWP	2	Maintain, update and enhance MFWP GIS data layers, provide these data as distributed files, on the web or as part of map requests. Integrate the use of GIS into management decision making processes.(Most of this work is conducted outside the StreamNet contract with MFWP dollars).	Ongoing	Up-to-date data layers; responsive to creation of new data layers	all staff
ODFW	1	Work with regional staff as necessary to assure seamless loading of data into the regional database.	Ongoing	Errors and problems related to data exchange resolved	All staff
Region	1	Update and append data as submitted by StreamNet participants. Isolate erroneous or duplicative data and work with source agencies to correct problems. Produce downloadable versions of StreamNet databases. Maintain logs of data submissions and major database changes.	Ongoing	Maintained StreamNet database with data submission logs up to date.	Kinney
Region	2	Whenever new tabular data with a spatial component are submitted to the project (e.g., fish distribution, hatchery facilities, etc.), create regional GIS layer(s) from this information where possible. Verify correct format, accuracy and logical consistency of spatial data sets and attributes through coordination with state GIS contacts and then load data to the regional database in coordination with the database manager. Post mappable layer(s) for the online query system and as downloadable layer(s) for StreamNet GIS users.	Ongoing	Data with sound spatial referencing available on the StreamNet web site	Butcher
Region	3	Maintain a library of StreamNet GIS layers for internal use and as downloadable data on the web site with complete documentation (metadata).	Ongoing	GIS data library and metadata available on the StreamNet website	Butcher
Region	4	Obtain and refine layers such as ESUs, ecoregions, or elevations, and create cross tables for use by the query system.	Opportunistic	GIS layers and tabular cross-reference tables to support enhancements to the web query system	Butcher

Region	5	If possible, update the Hatchery Releases database with data from the Regional Mark Information Center or directly from state agencies where information is available. Data must be in either StreamNet data exchange format or a modified PSC data exchange format prior to rolling CWT release records into single records by tag code. Reconcile known redundancies in the hatchery release table resulting from acquisition of data from multiple sources.	Ongoing	StreamNet hatchery release data as current as possible.	Kinney
Region	6	Assist the database manager with the spatial component of data and its implementation online, as needed.	Ongoing, as needed	Sound spatial component of the StreamNet database	Butcher
Region	7	Assist data contributing agencies in development of data, including formatting, coding, data entry, error checking, and submitting to the regional database.	Ongoing	Assistance to data providers	Butcher, Banach, Kinney
Region	8	Examine the StreamNet database for errors and report any found to the appropriate entity for correction.	Ongoing	The list of database errors encountered by users is current and leads to corrections.	Kinney, Banach
Region	9	For the reaches not yet converted, update georeferencing for the Protected Areas and Smolt Density Model data from river reach numbers to LLIDs, where possible. All obvious locations have been converted. The remainder are the ones with ambiguous or unclear location descriptions.	Ongoing	Improved georeferencing for Protected Areas and Smolt Density Model data.	Butcher
WDFW	1	Work with regional staff as necessary to assure seamless loading of data into the regional database and improve the data submission process.	Ongoing	Cooperation, feedback, re-submittals of data or extra documentation as warranted	Sikora, Woodard, Hudson
WDFW	2	Provide metadata for tabular and spatial data according to any guidelines adopted by the Steering Committee.	Ongoing	Metadata, as warranted	Sikora, Hudson, Woodard,

Objective 2 Data management and delivery

**Task 4 Data exchange standards**

Establish and maintain data exchange standards to ensure consistent content and format of data that originate from multiple data sources. Monitor adopted and proposed data exchange formats for data categories described under Objective 1. This task will provide coordination and technical assistance regarding interpretation of database structures and codes.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Participate in DEF review and development issues to maintain workable exchange standards.	Ongoing	Maintenance of useful and consistent data exchange standards.	Forrest

FWS	1	Review and comment on DEF issues brought to the Steering Committee	Ongoing	Contribution to Steering Committee review of DEF	Pastor
IDFG	1	Provide lead development of a DEF for juvenile data.	9/30/03	New data exchange format for juvenile data.	Butterfield
IDFG	2	Participate in the development or modification of other data exchange formats.	Ongoing	New or updated data exchange formats.	Butterfield
IDFG	3	Participate in the development for a protocol for developing or modifying data exchange formats	Ongoing	New protocol for developing or modifying data exchange formats.	Butterfield
MFWP	1	MFWP StreamNet will participate in the design, development and maintenance of standard codes and data exchange formats. This will occur through involvement on the Steering Committee and technical work groups.	Ongoing	Reviewed DEF's	Hess-Herbert, other staff
ODFW	1	Monitor adopted and proposed data exchange formats and provide comments, feedback, and/or recommended changes as necessary.	Ongoing	DEFs monitored and commented on as needed.	All Staff
ODFW	2	Develop and submit a draft DEF for carcass placement efforts. Due date presumes completion of the formal DEF development process, and may be delayed if the process is delayed.	2/15/03	Carcass Placement DEF proposed	Hurn
Region	1	Assist with the design and implementation of data exchange standards as they relate to the spatial aspect of data in the StreamNet database.	Ongoing	Sound formats for spatial referencing of data	Butcher
Region	2	Maintain and update the StreamNet Data Exchange Format as necessary to incorporate additions and modifications agreed to by the Steering Committee. Record accepted revisions in the DEF document. At least one update of the DEF document will be made during the year.	As needed	Updated Data Exchange Format	Banach
Region	3	Complete the white paper begun in FY02 that examines the implications of a major simplification of the StreamNet Data Exchange Format. A simplified DEF, using much flatter tables, could greatly ease data submittal for StreamNet participants and potentially speed data flow to the regional database. It may also permit much easier data capture from people outside of the StreamNet project. However, potential complications of such an approach could include data integrity problems, unacceptable workload shifting, and a variety of other issues. Explore these issues and create a report on the potential benefits and detriments of a simplified DEF.	5/2/03	White paper on DEF simplification	Banach

Region	4	Assist with development of XML schema based data exchange options for both incoming and outgoing data. Develop a written recommendation on how to utilize XML to maximize exchange of data for consideration by the StreamNet Steering Committee for future action.	6/1/03	Report to Steering Committee recommending how to utilize XML.	Kinney, Wilke
WDFW	1	Engage in data exchange standards and format (DEF) discussions. Initiate discussions as warranted when WDFW's data cannot be accurately converted and provide an adequate status report to the StreamNet Regional staff when it's time to let them lead the continuing discussion.	Ongoing	DEF and data standards feedback.	Sikora, Woodard, Hudson

Objective 2 Data management and delivery

**Task 5 StreamNet Internet site**

Continue to maintain and enhance the existing client-server system to provide access to StreamNet data products through the Internet at both the regional and cooperating project levels. The StreamNet home page will continue to be utilized as the project's primary data delivery vehicle. Priority will be given to incorporating data developed through Objective 1 and providing access to reference materials secured through Objective 3. GIS systems will be used to promote data sharing, data transfer, communication, and to pilot efforts that improve efficiency in data migration to the StreamNet database. Appropriate training on the use of the system will be provided through a combination of on-line help and in-person training sessions.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
MFWP	1	Review the StreamNet web site as requested and provide comments	Ongoing	Comments and suggestions	Hess-Herbert
ODFW	1	Manage and maintain Oregon's web-based data integration, communication, and transfer systems sites and their links to StreamNet.	Ongoing	Oregon's web-based systems are maintained, updated, & improved, Oregon data and reports are posted, and links to SN are maintained	Herber, Bowers, Brodeur
ODFW	2	Monitor and provide feedback on existing and new StreamNet Internet features.	Ongoing	StreamNet site is monitored and feedback is provided to StreamNet	All staff
Region	1	Maintain the GIS Data, Map, and PNW Reach File Internet pages.	Ongoing	Up-to-date GIS and hydrography information available on line	Butcher
Region	2	Maintain, update, and improve the Internet mapping component to the StreamNet web site to allow users to access StreamNet data through interactive map interfaces. Improvements might include such items as adding DRGs or aerial photos to the IMS applications, and showing trend locations in the web query system.	Ongoing	Functional Internet mapping application	Butcher

Region	3	Guide development and enhancement of the StreamNet web query system from the perspective of data users. Review changes to the web query system to ensure they are implemented appropriately and do not create unforeseen problems.	Ongoing	Improved web query system	Banach, Schmidt
Region	4	Maintain and enhance the look and usability of the current web-based query system. Incorporate 5 <sup>th</sup> and 6 <sup>th</sup> field HUC GIS coverages into the web query system and Internet mapping applications.	Ongoing	Functional and enhanced query Capability	Wilke
Region	5	Convert the core query system to an open ColdFusion environment	3/1/03	Faster, more open and easily modifiable system	Wilke
Region	6	Deploy new query system components and data categories that are approved by the Steering Committee	Ongoing	Enhanced functionality and new data categories available	Wilke
Region	7	Maintain logs of web query history and error events. Track and report Internet site usage by month and investigate web query system errors encountered.	Ongoing	Logs and reports of StreamNet website and query system usage; decreased error rate	Wilke
Region	8	Maintain and upgrade StreamNet web server and software.	Ongoing	Web server up 99.5+% of time.	Wilke
WDFW	1	As time permits, review new products and features of the StreamNet Internet site. Provide feedback on content, suitability, navigability and data currency issues, especially issues related to providing static or dynamic map capabilities.	Ongoing	Feedback to the Regional StreamNet staff	Sikora

Objective 2 Data management and delivery

**Task 6 Tool development and maintenance**

Provide programming services to project participants to support efficient data entry and transfer. Tools may be developed at the regional or agency levels.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Develop and test data handling applications to ease transfer of tribal data sets to the StreamNet system.	9/30/03	Prototype data transfer applications.	Forrest
MFWP	1	Maintain and enhance the edit/entry interface for fisheries survey data distributed to individuals with a MFWP Collector's permit, including federal land management agencies.	As needed	Modifications as requested.	Carson
MFWP	2	Maintain U of M system for genetics analysis input, Future Fisheries for restoration project data entry, and other interfaces upon request if they relate to StreamNet workplan.	Ongoing	Usable interfaces	Carson, Hutten



ODFW	1	Develop and maintain tools as needed to aid and support Oregon's data management and delivery. Efforts this year will focus on the initial development of a corporate information system targeting Oregon's trend and barrier/dam interfaces.	9/15/03	Corporate system initiated with the Trend and barrier/dam Interfaces functional	Herber
Region	1	On an as-needed basis, update or develop tools to assist with data entry and data management. Assist StreamNet data compilation agencies with trouble-shooting, modification, or development of data input interfaces. Tools might include input interfaces, error checking routines, geographic locators, etc.	Ongoing, as needed	New tools to streamline data acquisition and improve data searching and reporting.	Wilke
WDFW	1	Review and give feedback on StreamNet's tools. Also build internal tabular and GIS tools and procedures to efficiently manipulate data. Share experiences with such tools and the tools themselves with StreamNet participants upon request.	Ongoing	Internal tools and instructions, feedback for StreamNet or external tools	Brown, Hudson, Sikora

Objective 2 Data management and delivery

**Task 7 Respond to data / information requests**

Receive and respond to requests for data and information, source materials, and custom products. Response to requests will be honored within the limits of available resources, with priority given to information requests having direct relevance to the Fish and Wildlife Program. Other priorities will include implementation of the Endangered Species Act and federal, state, and tribal natural resource management activities.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Respond to data requests as they are received.	Ongoing	A log of data requests received and their disposition	Forrest
IDFG	1	Respond to requests for data and information, source materials, custom products and technical assistance. Response to requests will be honored within the limits of available resources. Priority will be given to requests having direct relevance to the Fish and Wildlife Program, including Subbasin Planning, Monitoring and Evaluation, CBFWA, the Council, BPA and other FWP projects. Other priorities will include implementation of the Endangered Species Act, other federal and state regulations, such as NEPA, and natural resource management agencies. All requests will be logged.	Ongoing	Data and other products delivered to "customers".	Butterfield
MFWP	1	Receive and respond to requests for data, source materials, and custom products. Respond to requests within the limits of available resources, with priority given to information requests having direct relevance to the F&WP.	Ongoing	Completed requests	all staff

ODFW	1	Provide responses to data / information requests	Ongoing	Requests are cataloged and fulfilled within existing resources	All staff
Region	1	Respond to requests to the StreamNet project from F&WP participants for data, maps, GIS products or general assistance. Provide assistance, including custom map work where feasible. Direct users to other resources if requests exceed project capabilities.	Ongoing	Assistance provided	Banach, Butcher
Region	2	Respond within one day whenever possible to users who request information or assistance. Requests may be for help in navigating the StreamNet web site to find desired information, help in learning to use the on-line data query system, help in finding information not contained in StreamNet, assistance finding GIS layers, providing unique or customized data, or a variety of other types of requests.	Ongoing	Satisfied requests	Banach, Butcher
WDFW	1	Generate maps, data reports, and electronic copies of data sets as requested. Provide PRIORITY data support for subbasin assessments and other new elements of the NWPPC Fish & Wildlife Program, within existing resources.	Ongoing	Requested data provided (if it already exists)	Varies by data set

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### Objective 3 Library and reference services

Provide professional library services to the Columbia Basin's fish and wildlife decision-makers, planners, managers, and researchers by acquiring and cataloging StreamNet source documents and other related material; and by providing open and efficient access to these materials

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Objective 3 Library and reference services

#### Task 1 Collection development

Develop a collection of materials applicable to the mission of StreamNet. Collect, catalog and organize materials to document data sources, Fish and Wildlife Program activities and reports, and other gray literature for access by regional scientists, agencies, interested parties, and other libraries. Project participants will submit reference documents for all data to be included in the collection. (Note: The consensus seems to be to have reference submission here, and NOT include it under Data Development.)

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Coordinate source material submissions for data compiled by participants.	9/30/03	Updated catalog of materials	Oftedahl

CRITFC	2	Develop a collection of materials related to the Columbia Basin, including reports from other Fish and Wildlife Program projects, other agency documents as they relate to the Basin, and other published and unpublished materials as requested by clients.	9/30/03	Updated, expanded collection of materials.	Oftedahl
CRITFC	3	Maintain and develop a collection of journals related to fisheries and aquatic sciences as well as other related scientific topics.	Ongoing	Current collection of journals available to library users	Liberty
CRITFC	4	Format the library reference table of StreamNet documents for inclusion in the StreamNet database. New updates will be sent to the regional database monthly after that.	Monthly	Updated reference table	Oftedahl,
IDFG	1	Provide copies of documents and reports referenced in data submissions.	Ongoing	Reference documents included in StreamNet Library collection	Butterfield
MFWP	1	Update the StreamNet library with references and publications from the Fisheries Division Library on an annual basis.	date to be determined	CD of new data to the StreamNet library	Carson
MFWP	2	Collect and catalog supporting references to document the sources of the distribution information and other data types developed under Objective 1 and to connect the data to references. Submit updated references to the StreamNet Library	12/31/02	Updated references submitted to StreamNet Library	Carson
ODFW	1	Provide originals/copies of all documents and reports referenced in the compilation of new StreamNet data holdings, but not already housed in the StreamNet Library.	Ongoing	Literature provided (or made accessible) to the StreamNet Library.	Hurn
Region	1	Enhance the StreamNet data reference system by repairing or establishing procedures for updating and reconciling data-related references between the StreamNet database at PSMFC and the StreamNet Library database housed at CRITFC.	Ongoing	Reduced confusion and enhanced accessibility to data references	Kinney
WDFW	1	Engage in discussions to finalize procedures to submit spatial data references. Continue to collect documents used as source materials for any data in Objective 1. Documents will be assigned reference numbers and forwarded to the StreamNet library as per established StreamNet guidelines.	Ongoing	References, feedback	Varies by dataset

Objective 3 Library and reference services

### **Task 2 Provide access to collection**

Provide user access to the materials described in Task 3.1 by providing facilities for storage of paper and electronic copies of documents, an online catalog of all documents in collections, and staff to answer location questions and respond to requests.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Provide and maintain an appropriate facility for the storage and public use of the StreamNet Library collections.	9/30/03	Library open to public	Oftedahl
CRITFC	2	Catalog and organize the materials for ease of use by clients and staff.	9/30/03	Current catalog of materials	Oftedahl
CRITFC	3	Provide access to the catalog of materials via the Internet and update the online catalog on at least a monthly basis.	Monthly	Updated website and catalog	Oftedahl
CRITFC	4	Develop and execute a plan to place electronic documents in the catalog and on the library website.	9/30/03	Access to electronic documents	Nock
CRITFC	5	Develop and keep a schedule of open times and reference desk staff hours.	9/30/03	Staff available to patrons	Nock

Objective 3 Library and reference services

### **Task 3 Library services**

Manage the StreamNet Library and provide library services to the StreamNet user community, Fish and Wildlife Program, and the general public.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Provide information and reference services to library clients	Ongoing	Information provided as requested	Nock
CRITFC	2	Provide information about services and hours to library clients via print and Internet	Ongoing	Updated website and brochure	Oftedahl
CRITFC	3	Provide interlibrary borrowing services for library patrons to access materials not yet owned by the StreamNet Library.	Ongoing	Information or materials provided to patron	Nock
CRITFC	4	Provide access to hardcopy and electronic files of draft and final documents related to subbasin planning and the NPPC amendment process.	Ongoing	Collection is current	Oftedahl, Nock
CRITFC	5	Identify changes and new features that will improve delivery library Services	Ongoing	Recommendations to improve delivery of services	Oftedahl, Nock, Liberty

Objective 3 Library and reference services

### **Task 4 Inter-library coordination**

Engage in networking activities with other agency and regional library service providers to provide better access to other collections that will enhance the StreamNet Library and to avoid unnecessary duplication of effort and materials

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Provide interlibrary lending services for other libraries to access the library's unique collection	9/30/03	Material circulation	Nock
CRITFC	2	Maintenance of memberships in appropriate library and subject-related associations. Ex. IAMSLIC, NRIC, OFWIM, etc.	9/30/03	Presentations, reports, professional development	Oftedahl
CRITFC	3	Provide consultations for groups and other agencies on library organization and services.	9/30/03	Services as requested, detailed in Reports	Oftedahl
CRITFC	4	Coordinate with other StreamNet libraries, library clients and other libraries to improve service to clients and limit duplication of effort.	9/30/03	Improved services	Oftedahl
CRITFC	5	Work with subbasin planning groups and TRTs to identify modifications and new uses to make information related to these processes easier to retrieve	9/30/03	Recommendations to Steering committee	Oftedahl, Nock

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## **Objective 4 Services to the Fish and Wildlife Program**

Provide technical data services to Fish and Wildlife Program decision-makers and appropriate Fish and Wildlife Program projects

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Objective 4 Services to the Fish and Wildlife Program

### **Task 1 Data and services to support the Fish and Wildlife Program (Base project level only)**

Provide data management assistance to the Fish and Wildlife Program, as requested. Services may include custom development of data, provision of data from the StreamNet database to support FWP activities (such as planning, monitoring and evaluation, etc.), and general advice and technical assistance with database management, data delivery, and GIS. Under base funding, requests under this objective will have to be balanced against other ongoing activities.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
IDFG	1	Participate in Subbasin Planning work by providing data and information management advice as requested, based on our available time and funds.	As requested	Assistance to subbasin planning efforts	Buterfield
MFWP	1	Work with Montana's CBFWA representative involved with subbasin planning and provide data, map products and assistance as needed. Upload Sub-basin Planning website information when requested by contractor	Ongoing	Services as requested	Hess-Herbert

ODFW	1	Provide tabular and/or spatial technical assistance and data services to Fish and Wildlife Program participants, as requested	Ongoing	Technical assistance and data services provided upon request	Herber, Bowers
Region	1	As requested, generate customized maps and information for subbasin planners or monitoring programs from StreamNet data or other data provided by the planners, as long as this work can be accomplished within existing resources.	On request	Maps and data provided to planners	Butcher, Banach
Region	2	Assist subbasin planners and others with the use of the StreamNet database system, including GIS data and the spatial component of the StreamNet database.	On request	Data flow to subbasin planners, monitoring programs, etc.	Banach, Butcher
Region	3	Participate in regional discussions of Monitoring and Evaluation to coordinate the use of StreamNet data in support of M&E efforts.	On request	Contribution of StreamNet data and services to M&E activities	Schmidt
WDFW	1	Participate in Subbasin Planning work by providing data and information management advice as requested, based on our available time and funds.	Ongoing	Standardized data, advice	O'Connor (Woodard)

Objective 4 Services to the Fish and Wildlife Program

**Task 2 Archive function for regional data sets, as requested**

Work with regional entities to aid in the capture and distribution of data generated through Fish and Wildlife Program activities and to help determine the most appropriate means of storing and disseminating them. Where data do not fit in existing StreamNet data sets, develop archive functions to, at a minimum, make data available 'as is', regardless of their current form.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Work with ESA recovery planning and NWPPC subbasin planning efforts to ensure data and technical literature are captured and made regionally accessible.	Ongoing	Strategies to store data and literature in a permanent form, regionally accessible over time.	Roger
MFWP	1	Be available to Montana entities as a source of information and assistance for capturing F&WP-related data, as needed.	As needed	Data sets identified and obtained	Hess-Herbert, Carson
ODFW	1	Support and participate in state-level and regional data management initiatives	Ongoing	Participate in regional data management initiative to improve data management in within Oregon and the region.	Cooney
Region	1	Maintain an archive or data warehouse capability on the StreamNet web site to house and distribute data in their native formats for other projects under the FWP. This service will be for projects lacking the capability of posting their own data and for data that do not fit the established Data Exchange Format.	As requested	Data sets available on the StreamNet web site.	Banach

Region	2	Participate in regional discussions on Subbasin Planning to identify data that may become available through the planning process. As data are identified, begin development of data standards and formats, and processes to effectively acquire the data without duplication of effort.	Ongoing, opportunistic	Plans for acquiring data sets produced by Subbasin Planning, and draft data standards	Schmidt
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Objective 4 Services to the Fish and Wildlife Program

**Task 3 Protected Areas**

StreamNet will a) maintain and provide access to the Council’s Protected Areas data set, b) archive the official version as a historic record, c) in consultation with the Council, respond to requests for information concerning Protected Areas, and d) modernize georeferencing and make data available through online mapping.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
Region	1	Maintain the Protected Areas database within the StreamNet database.	Ongoing	Protected Areas data available in StreamNet query system	Kinney
Region	2	As time allows, work to resolve the remaining ambiguous location of Protected Areas to the LLID system.	Ongoing	Improved locational coding for currently unresolved locations	Butcher

**Objective 5 Project management and coordination**

Provide effective leadership that ensures the production of high quality information products targeted at critical applications and the development of these products in a timely, cost-effective manner.

Objective 5 Project management and coordination

**Task 1 Manage project activities**

Administer all aspects of the project at the regional and cooperator levels, including oversight of budget, personnel (including training and staff development), work statement preparation and implementation, coordination among participating agencies, active participation in steering committee work, and project reporting.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Provide guidance to project activities	Ongoing	Attend and participate in Steering Committee meetings and activities	Roger, Oftedahl
CRITFC	2	Provide project management and staff supervision, including budgeting, reporting, etc.	Ongoing	Reports prepared on time and activities conducted within budget.	Roger

FWS	1	Represent FWS in Steering Committee meetings. Produce quarterly reports w/in 30 days of quarter end. Produce FWS component of FY2001 final report. Create FWS StreamNet budget & statement of work for FY2003. Contribute FWS portion of Project Renewal documents.	Ongoing	Project administration	Pastor
IDFG	1	Administer all aspects of the project at the regional and cooperator levels, including oversight of budget, personnel and training, professional organizations, work statement preparation and implementation, coordination among participating agencies, active participation in steering committee work, and project reporting.	Ongoing	Work statements, budgets and other work described in progress reports.	Butterfield
MFWP	1	Provide supervision of Montana StreamNet staff and project. Produce quarterly reports within 1 month after the end of each quarter. Produce final report within 2 months of the end of the contract period. Participate in Steering Committee meetings. Collaborate on developing a final detailed Statement of Work for FY03 and other documents, as requested.	Ongoing	reports, productive staff, appropriate input	Hess-Herbert
ODFW	1	Administer all aspects of the project for Oregon, including budget oversight, personnel, work statement preparation, staff work plan preparation, project implementation and coordination, reporting, and participation with the Steering Committee and technical issue working groups.	Ongoing	Successful project administration	Cooney
Region	1	Project Administration: Perform ongoing administration of the StreamNet project, to include budget development and tracking, contract monitoring, personnel functions, inventory control, etc.	Ongoing	Functional project	Schmidt
Region	2	Reporting: Submit quarterly progress reports to BPA within one month of the end of each quarter and submit an annual report within two months of the end of the fiscal year.	Quarterly	Reports	Schmidt
Region	3	Maintain effective relationship with the StreamNet Steering Committee. Organize and conduct quarterly Steering Committee meetings to facilitate project oversight and setting direction/goals. Coordinate regional project activities with Steering Committee involvement and direction.	Ongoing	Effective guidance and coordination with Steering Committee	Schmidt
WDFW	1	The WDFW StreamNet state coordinator will participate in all Steering Committee and StreamNet Project management activities, including meetings and follow-up work assignments (progress reports, Statements of Work, budgets).	Ongoing	Steering Committee participation, quarterly and annual reports, budgets, SOW	O'Connor (Sikora)
WDFW	2	The state coordinator and the state data manager will jointly manage all aspects of StreamNet in WDFW, including budget, personnel, work scheduling, and product delivery.	Ongoing	Effective project management	O'Connor, Sikora



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Objective 5 Project management and coordination

**Task 2 Participate in Fish and Wildlife Program development activities**

Work with regional entities to assist in the area of data management as requested to support development of Fish and Wildlife Program projects and programs. Organize, facilitate, and/or participate in appropriate coordination meetings with BPA, CBFWA, the Council, ESA officials, ISAB/ISRP, and/or staff and management of participating organizations to identify ways StreamNet can effectively contribute to the Fish and Wildlife Program (FWP) and facilitate capture and dissemination of data. Participate in advisory groups, task forces, and other groups whose purpose is enhancing the effectiveness of the Fish and Wildlife Program relative to its data development activities.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Participate in various NWPPC planning and management work groups to improve and coordinate regional information management programs.	Ongoing	Reports to Steering Committee on regional information management needs and opportunities.	Roger
MFWP	1	Provide input, advice, recommendations, review, as needed and requested	Ongoing, as needed	Requested services	Hess-Herbert
ODFW	1	Work with regional entities to assist in the area of data management as requested to support development of Fish and Wildlife Program projects and programs. Organize, facilitate, and/or participate in appropriate coordination meetings with BPA, CBFWA, the Council, ESA officials, ISAB/ISRP, and/or staff and management of participating organizations to identify ways StreamNet can effectively contribute to the Fish and Wildlife Program (FWP) and facilitate capture and dissemination of data. Participate in advisory groups, task forces, and other groups whose purpose is enhancing the effectiveness of the Fish and Wildlife Program and its data development activities.	Ongoing	Participate as need	Cooney
Region	1	Work with regional entities to contribute data management expertise toward development of activities within the scope of the Fish and Wildlife Program. Serve as a data management resource to the FWP.	On request	Input and assistance to Fish and Wildlife Program	Schmidt
WDFW	1	Assist in any pertinent coordination efforts.	Ongoing	Participation and assistance	O'Connor

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Objective 5 Project management and coordination

**Task 3 Coordinate with other related activities**

Maintain communications between StreamNet and other applicable regional and state-level fish and wildlife activities and agencies beyond the Council's Fish and Wildlife Program to identify means for collaborative data collection, storage, and dissemination. Collaborative data activities will include tribal fishery programs within the Columbia Basin, federal land managers' fishery programs, state fish and wildlife agencies, and, with respect to water use and stream development, state water resource management and environmental quality agencies. Collaboration with coast-wide and private data collection/compilation efforts will be pursued when this supports overall project goals.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Participate in various regional inter-agency planning and management work groups to improve and coordinate regional information management programs.	Ongoing	Reports to Steering Committee on regional information management needs and opportunities.	Roger
IDFG	1	On an opportunistic basis, coordinate with other state, federal, or tribal agencies to enhance the collection and management of data related to management of natural resources.	Ongoing	Results described in progress reports.	Butterfield
MFWP	1	Maintain communication between state and regional entities	Ongoing	Communication	Hess-Herbert
ODFW	1	Establish / maintain working relationships with data collection projects within and outside ODFW to promote efficient and beneficial data sharing.	Ongoing	Coordinate as needed.	Cooney
Region	1	Coordinate with agencies and organizations involved with habitat restoration work in the Columbia Basin regarding data needs, standards and formats, storage and delivery. Work toward achieving regional consistency in restoration project data.	Opportunistic	Coordinated efforts and databases among regional data managing entities.	Banach
Region	2	Coordinate with regional entities on habitat data needs and availability. Begin developing an approach toward capturing high priority data types. Development of habitat data may require additional resources.	Opportunistic	Beginnings of coordinated stream habitat database	Banach
Region	3	Participate with regional entities in the development of effective regional data management programs and approaches, such as through SAIC or RPA 198. Provide input based on years of StreamNet experience with management of data sets on a regional basis, along with insights into challenges, obstacles and costs. Support effective regional data management and delivery at reasonable cost with avoidance of unnecessary duplication of effort. Support and encourage regional data needs assessments.	Opportunistic	Contribution to regional data management efforts	Schmidt

Region	4	In order to broaden the scope and utility of the StreamNet database, develop appropriate proposals for data development activities that would compliment the main StreamNet data holdings. Ensure proposed work is not currently conducted by other entities. (Examples may include traditional StreamNet data types outside of the Columbia River basin, macroinvertebrates, water temperature, and habitat restoration.) Conduct of such work will be dependent on availability of additional resources. Once awarded, efforts will conform to the approved contract. Such work will be coordinated with this work plan so that activities under this task do not impede accomplishment of the remainder of the work plan. This task is necessitated by the fact that project staff have time available that is not covered by the BPA contract.	Ongoing	Project proposals	Schmidt
WDFW	1	Assist in any pertinent coordination efforts.	Ongoing	Collaboration and assistance	O'Connor

Objective 5 Project management and coordination

**Task 4 Prepare and present public and professional information related to the StreamNet Project.**

As needed, produce public information materials and participate in various meetings and forums (public or professional) to explain the project's capabilities and purpose and to generate support and additional data sources. Activities may include brochures, demonstrations, posters and talks to public, policy or professional groups and organizations.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Prepare and present demonstrations and descriptions of the library services available through StreamNet.	Ongoing	Reports on activities to the Steering Committee	Oftedahl
MFWP	1	Seek opportunity to provide information on the StreamNet project in public and professional settings.	Ongoing	Well-organized and appropriate information provided	All staff
ODFW	1	Produce public informational documents on StreamNet data activities for natural resource oriented publications, give oral presentations to relevant user groups, and participate in various meetings and forums.	Ongoing	Develop, author, and/or present at least 3 StreamNet related informational pieces.	Cooney
Region	1	Prepare and deliver presentations to scientific and professional meetings to demonstrate project capabilities and accomplishments and to solicit additional data and involvement or coordination with the project.. Expected results would be enhanced visibility for the project, increased participation and data flow from agencies, improved coordination, and avoided duplication of effort.	Opportun- istic	Presentations	Staff

Region	2	Develop materials to support the project. Improve public materials such as the StreamNet brochure, data inventories, etc. as needed. Maintain and update explanatory materials such as the Query System User Guide and documents that explain data categories and structures. Prepare and deliver StreamNet E-Newsletter at least twice as information becomes available.	As needed.	Materials for distribution	Schmidt
WDFW	1	Participate as opportunities arise to highlight StreamNet programs & data. Report key contacts and results to Regional Project Manager to keep Manager apprised on opportunities pursued in Washington state.	Ongoing	Participation, information materials, reports	O'Connor (Sikora)

