



StreamNet Project

BPA Project No.: 198810804

FY 2005 Work Statement

October 1, 2004 through September 30, 2005

Bruce Schmidt

Pacific States Marine Fisheries Commission

Cooperators:

Phil Roger, Columbia River Intertribal Fish Commission

Bart Butterfield, Idaho Department of Fish and Game

Janet Hess-Herbert, Montana Fish Wildlife and Parks

Cedric Cooney, Oregon Department of Fish and Wildlife

Steve Pastor, U.S. Fish and Wildlife Service

Dick O'Connor, Washington Department of Fish and Wildlife

October 1, 2004

Table of Contents		Pg.
Introduction.....		2
Objective 1. Data Development and Update.....		5
Objective 2. Data Management and Delivery.....		16
Objective 3. Library / Reference Services.....		26
Objective 4. Services to Fish and Wildlife Program Activities.....		29
Objective 5. Project Management / Coordination.....		34

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 through the Northwest Power and Conservation 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 (from one or two months to full time). 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. For example, MFWP provides \$65,000 worth of in-state travel, office space, computers and office supplies.

The StreamNet Project compiles, standardizes, 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.

This document is the FY2005 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 2005, from October 1, 2004 through September 30, 2005.

There are four primary components of the StreamNet Project, plus administration: data development, data management, Library services, data services to the Fish and Wildlife Program, and project administration. These are represented as Objectives in this statement of work

For FY-05, data development activities will be delayed to allow focus on quality assessment of the existing data in the StreamNet databases. This work will be primarily performed by the state and federal cooperators under the data management objective to assure that all data meet the overall data quality goals. Once the data are reviewed, cleaned and corrected as necessary, emphasis will shift to obtaining, QA and posting of the most recent data. This approach will lead to data updates being delayed, but it is the only way to provide enough time to conduct a thorough review of existing data. Any delays are reflected in the due dates for individual data types in the individual jobs.

Data management activities in FY-05 in addition to the data quality assessment will include maintenance and improvement of the hardware and software that support the databases, Geographic Information Systems (GIS) and Internet data delivery systems.

Library services will continue as in previous years. A primary function of the StreamNet Library is obtaining, cataloging and distributing reference documents for all data included in the StreamNet database. The library is constantly increasing its collection of documents, journals and reports relative to fish and wildlife management, and includes probably the largest collection of agency (gray) fish and wildlife literature in the Columbia basin. Additional services include interlibrary loans and direct service to library patrons.

Data services to support the Fish and Wildlife Program will focus on developing means to capture and disseminate data that were developed through the Subbasin Planning effort recently completed through the Northwest Power and Conservation Council (NPCC). Support will be provided to the Collaborative Systemwide Monitoring and Evaluation Project being conducted by the agencies of the Columbia Basin Fish and Wildlife Authority (CBFWA), the Pacific Northwest Aquatic Monitoring Program, and federal monitoring programs as requested. The project will also participate in efforts to develop a regional approach to data management and dissemination, such as through the Northwest Environmental Data-network (NED).

The FY-05 Statement of Work represents a base level of activity for the StreamNet Project, due to level funding. Work to develop other kinds of fish related data within the Columbia Basin are well within the ability of the project if other funding becomes available. The StreamNet Project maintains core capabilities in database design, data management, GIS and Internet data delivery. Development of new data types is dependent only on the availability of data technician time to locate, obtain and standardize the data, and direction from regional entities.

Following are the jobs that will be performed by the StreamNet participants in FY-05, organized by Objective and Task:

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 level base funding. Work on the low priority types will largely be limited in scope or effort unless new funding is approved. Primary focus this fiscal year will be to Quality Check the data in the StreamNet databases and to correct as necessary. Data updates will be delayed during the QC process.

Objective 1 Data acquisition and development

Task 1 Anadromous distribution and life history (habitat use) at the 1:100,000 scale

Document the occurrence, distribution and life history characteristics of anadromous fish species. Project participants made major updates last fiscal year utilizing the new Data Exchange Format (DEF). Maintenance of this data set will continue. This is a high priority data set.

<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, capture and update 100K anadromous fish distributions.	Ongoing	Updated generalized fish distribution data.	Brown
ODFW	1	Update, maintain, correct and exchange anadromous fish distribution and documentation information.	Ongoing	Generalized fish distribution data exchanged in DEF format.	Bowers
WDFW	1	Convert newest Washington anadromous fish distribution data to StreamNet format (once streams layer can accommodate 24K streams). Exchange data when completed.	30 days after O. 1, T. 9, J. 1	Submission of 24K anadromous fish distribution data	Hudson, Sikora

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. Existing resident fish distribution will be maintained, and project participants will begin expanding data for additional species. This is high priority for Montana and Idaho, and new data will be developed by the other states as time allows.

<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, capture and update 100K resident fish distributions.	Ongoing	Updated generalized fish distribution data.	Brown
MFWP	1	Complete Distribution and Use Types data sets from data collected from biologists, documents and reports during 2002-2003 using LLID stream routes and Montana's lakes coverage and water code system. Exchange with StreamNet. Complete distribution and use type data sets for 2003-2004. Update entire state. Focus on target species during the year if opportunity arises. Exchange the data to the regional database in the approved DEF format.	12/01/04, 9/01/05	Exchanged distribution and use type data	Carson
MFWP	2	Visit MFWP, other state and federal fisheries biologists in 2005 to collect 2003-2004 fish distribution and supporting survey data and	05/01/05	Data entered into MFISH	Carson, Hutten
MFWP	3	Work with FWP Fisheries Division to assist in the development of fisheries field collection survey standards.	Ongoing	Standardized field collection form to be used by MFWP; will add in the collection of data going into MFISH	Carson, Hutten, Anderson
MFWP	4	Explore commonly used habitat fields collected on streams to see if there is a core set related to fish distribution data.	Ongoing	Exploratory; could include new fields in MFISH distribution database	Carson, Hutten, Anderson
ODFW	1	As time and funding permits update, maintain, correct and exchange resident fish distribution and documentation information.	Ongoing	Generalized fish distribution data exchanged in DEF format.	Bowers
WDFW	1	Using formal fish distribution mapping parties, organize the effort to update Washington west slope cutthroat distribution data and compile that data in concert with the existing federal data that was compiled in	06/30/05	Complete and standardized WDFW internal west slope cutthroat distribution files	O'Connor, McTeague
WDFW	2	Convert and exchange the west slope cutthroat data when complete.	45 days after O. 1, T. 2, J. 1	Submission of 24K west slope cutthroat distribution data	McTeague, Sikora

WDFW	3	Incorporate any Washington bull trout distribution data updates resulting from the regional 5-year bull trout status review.	11/30/04	Complete and standardized WDFW internal bull trout distribution files	O'Connor
WDFW	4	Convert and exchange the bull trout data when complete.	60 days after O. 1, T. 9, J. 1	Submission of 24K bull trout distribution data to the Regional database	McTeague, Sikora
WDFW	5	Scope data availability and work to compile, convert and exchange distribution data for other priority resident species (including coastal cutthroat and rainbow trout).	Ongoing, quarterly	Report of progress in quarterly progress reports, data submission if possible	O'Connor

Objective 1 Data acquisition and development

Task 3 Adult abundance in the wild

Develop and maintain (update) 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 by other agencies). This is a high priority data type. 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. These are lower priority 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 2003 and provide updated data to the StreamNet database.	3/31/05	Updated dam count data sets exchanged to Regional database	Forrest
CRITFC	2	Update available tribal spawning ground survey data.	6/30/05	Updated spawning ground data sets exchanged to the Regional database	Forrest
IDFG	1	Compile and submit the 2004 field season redd count data from IDFG.	4/1/05	2004 redd count data exchanged to PSMFC	Brown
IDFG	2	Compile and submit the 1997- 2004 dam and weir counts data from IDFG.	9/30/05	Dam/weir count data exchanged to PSMFC	Brown
MFWP	1	Receive all 2004 stream and lake fish survey data during field office visits; data may be one time visits, index streams and/or results from gill nets in lakes and reservoirs.	08/01/05	Data provided in DEF if DEF developed; ancillary datasets if not	Carson, Hutten
MFWP	2	Input 2003 data into MFISH, including trend, count and references.	08/01/05	Submit in DEF (if developed) or as an independent data set	Carson, Hutten

ODFW	1	Maintain existing anadromous, resident, and non-game abundance and index trends. Any updates will be the result of QA/QC efforts, and easily incorporated trend data.	4/15/05, 9/15/05	Updated Columbia Basin trends are updated and submitted with available information	Waters
WDFW	1	Update and enhance the existing natural spawner database (escapement estimates and/or detailed counts) for available species. Convert and exchange data.	7/31/05	Submission of 2004 anadromous abundance data	Groesbeck, Woodard
WDFW	2	Continue maintaining and updating adult trap databases on all traps in Region 5 (lower Columbia River).	4/30/05	Complete and standardized WDFW internal adult trap files	Groesbeck

Objective 1 Data acquisition and development

Task 4 Hatchery releases

Develop and maintain (update) information on the release of hatchery reared fish. Emphasis this year will be on developing release data before release information is rolled up into PSC location codes. Release data for resident species under base funding will be developed only where the data are readily available (primarily Montana). Efforts will be made to complete cross references between PSC release codes and LLID stream location identifiers. This is a high priority data set.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
FWS	1	Acquire and process hatchery release information from national fish hatcheries in the region.	on going	CRiS SR80s file updated, data exchanged to PSMFC	Pastor
IDFG	1	Work with IDFG Fisheries staff to identify hatchery release locations and incorporate hatchery release data into StreamNet.	Ongoing	Hatchery release locations and data exchanged to PSMFC	Brown
MFWP	1	Exchange Montana's hatchery release data after development of a resident DEF and/or modifications to the existing anadromous hatchery release DEF. Number of years and number of waters will need to be	08/01/05	Exchanged data	Hutten
ODFW	1	Compile and submit anadromous hatchery releases through 2003, and 2004 where available, in an unrolled format if possible.	7/30/05	Hatchery release data	Herber
WDFW	1	Convert and exchange anadromous fish hatchery release data, unrolled.	60 days after O. 1, T. 9, J. 1	Submission of 1995-Current anadromous release data)	Sikora
WDFW	2	Complete compilation and QC for resident fish hatchery stocking data once lakes location issues are settled.	Six months after O. 1, T. 9, J. 1	Complete, standardized WDFW internal resident fish release files; data submission if possible	Sikora
WDFW	3	Work with other WDFW staff to create an integrated hatchery release/stocking dataset from which StreamNet data exchanges can be much more readily made.	Ongoing	Accurate and efficient data	Cox, Sikora

Objective 1 Data acquisition and development

Task 5 Hatchery returns

Develop and maintain (update) information on the return, disposition and straying (e.g., from other hatcheries) 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 2002. Development of disposition data is lower priority and would require additional resources. This is a high priority data set.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
FWS	2	Complete work on the new program to convert information from the FWS CRIS format to the new StreamNet hatchery returns format.	9/30/05	dBASE program to convert to new data structure	Pastor
IDFG	1	Compile and submit the 2004 field season hatchery return data from IDFG	4/1/05	2004 hatchery return data exchanged to PSMFC	Brown
ODFW	1	Compile data on returns to ODFW hatchery facilities (updated through 2003 returns where possible).	6/30/05	Hatchery return data	Herber
WDFW	1	Complete the conversion of old DEF hatchery returns data to the new DEF for all species and sites. Exchange data when complete.	10/31/04	Submission of hatchery returns data in the new DEF	Woodard
WDFW	2	Work jointly with other WDFW hatchery data unit staff to create a more efficient means to improve the internal WDFW hatchery returns data system and simplify data flow from this database into the conversion and exchange process.	12/31/04	Accurate and efficient data	Cox, Woodard
WDFW	3	Help WDFW regional biologists with run reconstruction efforts in order to better feed the WDFW-StreamNet master databases and meet other urgent needs of the agency.	Ongoing	Accurate and efficient data	Woodard

Objective 1 Data acquisition and development

Task 6 Dams and Fish Passage Facilities

Develop and maintain information on dam facilities. Update information as necessary. This is a high priority data set.

<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, capture and update dam and fish passage facility data.	Ongoing	Updated dam and fish passage data exchanged to PSMFC	Brown
MFWP	1	Update dam facilities data, as necessary	06/01/05	Updated dams spatial and tabular data in DEF.	Hutten
ODFW	1	Maintain existing dam and fish passage facilities information. Any updates will be the result of QA/QC efforts, and easily incorporated dam and fish passage data.	Ongoing	Corrected dam and fish passage facility information	Bowers

WDFW	1	Update the dam database, adding records and improving field entries as warranted.	07/30/05	Submission of updated dam information, if warranted	Sikora
------	---	---	----------	---	--------

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. Update information as necessary. This is a high priority data set.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
FWS	1	Collect and add any revised information on National Fish Hatcheries.	9/30/05	Updated CRiS sr80s file	Pastor
IDFG	1	On an opportunistic basis, capture and update hatchery facility data.	Ongoing	Updated hatchery facilities data exchanged to PSMFC	Brown
MFWP	1	Update the StreamNet hatchery database with Montana's public and private facilities.	06/01/05	Exchange with StreamNet upon completion.	Hutten
ODFW	1	Maintain and update, as needed, based on errors found in the Oregon hatchery facilities information, including facility location information..	Ongoing	Corrected hatchery facilities information exchanged	Bowers
WDFW	1	Update the hatchery database, adding records and improving field entries as warranted, including record updates for related tables (i.e. HatcheryXProduction data). Convert and exchange data when	2/28/05	Submission of hatchery facilities data	Sikora

Objective 1 Data acquisition and development

Task 8 Harvest

Develop and maintain (update) information on sport and commercial harvest. Higher priority is assigned to anadromous species.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Update available ocean and mainstem Columbia River harvest numbers through 2004, as available.	9/30/05	Updated harvest data exchanged to the Regional	Roger
IDFG	1	Compile and submit the 1997- 2004 freshwater harvest data from IDFG.	9/30/05	Idaho freshwater harvest data exchanged to PSMFC	Brown
ODFW	1	Maintain existing harvest trends. Any updates will be the result of QA/QC efforts, and easily incorporated trend data.	4/15/05, 9/15/05	All Columbia Basin sport harvest trends updated and submitted.	Waters

Objective 1 Data acquisition and development

Task 9 Hydrography

Maintain a regionally consistent routed hydrography layer at the 1:100,000 scale. This LLID based hydrography is the basis for georeferencing and displaying locations for all other data in the StreamNet database, and as such is an essential data set. Data will be updated as necessary. Exploratory work will be initiated in preparation for the eventual, inevitable move to the 1:24,000 scale hydrography being developed by other entities.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
IDFG	1	Maintain and update, as necessary, the 1:100,000 scale hydrography files for Idaho.	Ongoing	Updated 1:100,000 scale Hydrography	Butterfield
MFWP	1	Using the NHD, continue to update the routes using the updated NHD layer, including lakes; quality check the cross-reference between the LLID system and MFWP's water code system. Pursue any needs developed by the Steering Committee for a 1:24 K product.	As needed	Updates to StreamNet regional hydrography, if necessary	Carson
ODFW	1	Maintain and update, as necessary, the 1:100,000 scale hydrography files for Oregon.	Ongoing	Functional and current Oregon 100K hydrography, with data changes exchanged.	Bowers
ODFW	2	Assist regional staff with the development of a hybrid 100k and 24k hydro layer that will enable display of all distribution data in a linear	Ongoing	Work on hybrid 100k / 24K hydro layer.	Bowers
WDFW	1	Build and submit a "hybrid" layer containing 24K representation of all 100K Washington streams PLUS 24K-only streams containing StreamNet data.	12/31/04	Submission of 24K hybrid hydro layer	Hudson
WDFW	2	Finalize creation and QC of a 24K spatial/tabular lakes dataset to support data compilation and exchange for resident fish releases and other data under Objective 1.	Three months after O. 1, T. 9, J. 1	Completed 24K lakes dataset exchanged to the regional database	Sikora

Objective 1 Data acquisition and development

Task 10 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. Preliminary work has been completed on this data type, but regional priority has not been assigned to developing these data. Work continues on improving the data structure and DEF, primarily through work being done by a related project in California. This currently remains a low priority data type under current base funding, but is ready should a higher priority be assigned by regional entities.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Provide tribal PCSRF project information	3/31/05	Tribal PCSRF data files provided to NOAA Fisheries for inclusion in the PCSRF	Forrest
MFWP	1	Continue to collect, centralize and maintain all stream restoration projects data for Montana using the "Future Fisheries Interface".	3/31/05, 9/30/05	Exchange data to the Region twice during the year.	Hutten
MFWP	2	If the opportunity arises, participate in any regional activities related to restoration projects.	Ongoing	Participation	Hess- Herbert
ODFW	1	Maintain and update as needed based on errors identified in Oregon's existing tabular restoration data. This is maintenance; no new updates are planned.	Ongoing	Corrected tabular restoration data exchanged.	Wegner
WDFW	1	Complete conversion and exchange of Washington habitat restoration project information extracted from IAC's PRISM system and 2000-2002 NWIFC PCSRF data, given that a final DEF exists for this data category. Scope out additional content from WDFW's LIP initiative and other sources as time permits.	60 days after O. 1, T. 9, J. 1	Submission of restoration project data	Sikora (new hire)

Objective 1 Data acquisition and development

Task 11 Barriers

Develop and maintain data sets for barriers to fish migration. 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 and culverts may require revisions to the DEF. The primary emphasis is on anadromous species except in non-anadromous areas. This is a low priority data set under current 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	On an opportunistic basis, capture and update barrier data.	Ongoing	Updated fish barrier data exchanged to PSMFC	Brown
MFWP	1	Maintain 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	08/01/05	Exchange Barriers data with the StreamNet database.	Hutten
ODFW	1	Update and maintain Oregon's Barrier data and minimal Fish Barrier data development based on new barrier information, including information from non-ODFW sources.	Ongoing	Exchange new barrier location information (with minimal fish barrier information)	Bowers
ODFW	2	Initiate integration of juvenile and downstream passage information (only if a DEF is approved by the Steering Committee for this type of	Ongoing	Exchange new barrier passage information	Bowers
WDFW	1	Scope existing Washington state barriers datasets for a pilot data submission this FY. Data sources will at least include the SSHIAP and TAPPS databases.	9/30/05	Submission of barriers data	Sikora (new hire)

Objective 1 Data acquisition and development

Task 12 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 a low priority data set under current 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	Provide tribal juvenile abundance and/or outmigration data as time and availability allow.	9/30/05	Juvenile fish data, if available, exchanged to the Regional database	Roger

ODFW	1	Maintain existing juvenile data records. Any updates will be the result of QA/QC efforts and easily incorporated trend data.	Ongoing	Corrected juvenile abundance and outmigration information exchanged	Waters
WDFW	1	Continue maintaining and updating smolt trap databases on all traps in Region 5 (lower Columbia River). Scope out a pilot data conversion and exchange effort for Cedar Creek data.	12/31/04	Progress reported in quarterly reports, data submission if possible	Groesbeck

Objective 1 Data acquisition and development

Task 13 Age

Develop and maintain information on age/sex composition of returning adults, primarily for anadromous species. Emphasis on this data type will increase once the draft DEF is tested and finalized. This is a low priority under current 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	Provide CRITFC age data on sockeye populations and Bonneville Dam sampling	9/30/05	Available fish age data sets exchanged to the Regional database	Roger
FWS	1	Finish work on the new program to transform age information from the CRiS format to the new StreamNet format.	9/30/05	program to do transformation Completed	Pastor
IDFG	1	Compile and submit the 2004 field season age data from IDFG.	4/1/05	2004 age composition data.	Brown
ODFW	1	Maintain existing age data trends. Any updates will be the result of QA/QC efforts and easily incorporated trend data.	Ongoing	Corrected age information exchanged	Waters
WDFW	1	Update and exchange age data records gleaned from hatchery returns and adult abundance exchanged data.	11/30/04 and 8/31/05	Submission of age data with hatchery returns and adult abundance tables	Woodard, Groesbeck

Objective 1 Data acquisition and development

Task 14 Production factors and run reconstruction

Develop and maintain information on survival, production factors, spawner / recruit estimates, and run reconstruction. This is a low priority data type under current base funding, but the existing spawner / recruit estimate data will be maintained. Current effort will focus on what aspects of this kind of data are most needed.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Provide productivity data from subbasin planning and other technical analyses as available	Ongoing	Available productivity datasets exchanged to Regional database	Roger

Objective 1 Data acquisition and development

Task 15 Diversion Screening

Explore the availability of data on diversion screening. Capture data on screens as time and other priorities allow. The DEF will need to be finalized before much can be done with this data type. This is a low priority data set under current base level funding.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
MFWP	1	If available, collect diversion screening data from the MFWP Habitat Bureau collected as a result of FRIMA activities in Montana.	07/01/05	Exchange if there are any data and if it is an appropriate format	Carson
ODFW	1	Compile Oregon fish screening and diversion data. Data will be posted on the NRIMP site and linked to StreamNet as an 'as is' submission until a DEF is adopted.	4/15/05	Make screening/diversion information available.	Tardiff
ODFW	2	Capture GPS coordinates for water diversions and fish screens in the Willamette subbasin.	9/15/05	Accurate coordinates for fish screens and diversions	Wegner
WDFW	1	As funding and time permits, review existing Washington diversion screening data, identify additions and corrections needed and plan for future exchanges. Possible data sources include Yakima Screen Shop, SSHIAP, TAPPS, HPA databases.	Ongoing	Progress reported in quarterly reports, data submission if possible	Sikora (new hire)

Objective 1 Data acquisition and development

Task 16 Other data sets

On an opportunistic basis, develop other types of data as available or as requested by FWP participants. This relates to data relevant to StreamNet objectives which would be developed by StreamNet cooperators. Actual acquisition, standardization, georeferencing and distribution of these data will be dependent on available time and funding. These data may be included in the DEF in the future, or may be obtained and distributed as independent data sets in 'as is' condition. This is a low priority under current 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	Provide appropriate non-standard data sets developed through other activities as opportunities arise.	Ongoing	Available miscellaneous data sets of interest to participants in the NPCC Fish and Wildlife Program made available through the StreamNet web site	Roger, Forrest
IDFG	1	On an opportunistic basis, develop other types of data.	As Requested	New data sets exchanged or posted as independent data	Butterfield

MFWP	1 Provide updated genetic results information on Montana's species of concern. Explore providing data on Whirling Disease results; fishing pressure data on Montana's lakes and streams and other data sets if appropriate.	08/01/05	data for independent data sets page of StreamNet	Carson, Hutten
ODFW	1 Work with ODFW and other agency staff to facilitate either the incorporation of their data into StreamNet or independently posting their data on the StreamNet web site (opportunistically, and as time allows).	As requested or available	Potentially various independent data sets made available as opportunities arise	Cooney
Region	1 Advise and assist data developers with other data sets (those being compiled by StreamNet cooperators but not currently in the StreamNet DEF or the database). Low priority, and within current resources only.	On request	Assistance or advice to data developers	Hare, Banach

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 meet their policy, planning, monitoring, and management needs. A primary data management effort this year will be to Quality Check the data already contained in the StreamNet databases and correct as necessary, which may delay the delivery of data updates.

Objective 2 Data management and delivery

Task 1 System Administration

Manage and maintain the computer systems (hardware and software) necessary for supporting the tabular and GIS data systems at the regional and cooperating agency levels, including system backup.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Manage, maintain and enhance the computer systems (hardware and software) necessary for supporting the StreamNet Library, including system administration, backup and recovery, hardware and software upgrades, and security.	Ongoing	Reliable hardware and software systems support CRITFC obligations to the StreamNet Library	Forrest
IDFG	1	Manage, maintain and enhance the computer systems (hardware and software) necessary for supporting the tabular and GIS data systems, including system administration, backup and recovery, hardware and software upgrades, and security.	Ongoing	Functional StreamNet computer system at IDFG.	Murdock

MFWP	1 Manage, maintain and enhance the computer systems (hardware and software) necessary for supporting the tabular and GIS data systems, including system administration, backup and recovery, hardware and software upgrades, and security.	Ongoing	Functioning systems	Hess- Herbert
ODFW	1 Manage, maintain and enhance the computer systems (hardware and software) necessary for supporting the tabular and GIS data systems, including system administration, backup and recovery, hardware and software upgrades, and security.	Ongoing	Functioning hardware and software infrastructure for ODFW-NRIMP/StreamNet	Herber, Bowers
Region	1 Maintain and update, as necessary, the hardware and software, including ArcView and other tools, extensions and projects, that constitute the regional Geographic Information System. Provide system administration, backup and recovery, and security.	Ongoing	Functional, updated GIS	Hare
Region	2 Maintain and upgrade the StreamNet web server and software, including programming, system security, etc.	Ongoing	Web server up and operational 99.5+% of the time	Wilke
Region	3 Assist with development of XML schema based options for both incoming and outgoing data. Continue exploration of how XML can enhance data exchange.	Ongoing, as time allows	Increased use of XML in data acquisition and delivery.	Wilke, Kinney
Region	4 Maintain database servers and SQL Server software and databases; installing updates, patches and service packs as they become available. Manage logins and permissions. Routinely backup all databases. Assist with system administration and purchasing.	on going	Functional system to provide secure data.	Kinney
WDFW	1 Manage, maintain and enhance the computer systems (hardware and software) necessary for supporting the tabular and GIS data systems, including system administration, backup and recovery, hardware and software upgrades, and security.	Ongoing	Functional, updated spatial and tabular database systems	Sikora, Woodard, Hudson

Objective 2 Data management and delivery

Task 2 Application and Interface Development

Develop computer applications and interfaces that facilitate the entry, management and dissemination of tabular and GIS data at the regional and cooperating agency levels. This will include development of new applications and tools as well as maintenance or modification of existing applications.

<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/or maintain computerized databases, applications and interfaces that facilitate the entry, compilation, management and dissemination of tabular and GIS data.	Ongoing	Computer hardware and software systems necessary to maintain CRITFC contributions to the StreamNet project	Forrest
IDFG	1	Develop and/or maintain computerized databases, applications and interfaces that facilitate the entry, compilation, management and dissemination of tabular and GIS data.	Ongoing	Computer databases, applications, and interfaces used to compile and manage StreamNet compatible data at IDFG/StreamNet.	Murdock
MFWP	1	Develop and/or maintain computerized databases, applications and interfaces that facilitate the entry, compilation, management and dissemination of tabular and GIS data.	Ongoing	Functioning systems	Hess- Herbert
ODFW	1	Develop and/or maintain computerized databases, applications and interfaces that facilitate the entry, compilation, management and dissemination of tabular and GIS data.	Ongoing	Functioning applications and interfaces for ODFW-NRIMP/StreamNet	Herber, Bowers, Tardiff
ODFW	2	Continue development of a corporate information system.	Ongoing	Functional interfaces as part of a corporate system.	Herber
Region	1	Maintain and improve the LLID/NHD hydrography conversion tool. Immediate need is to complete error trapping routines and polish the final application.	Ongoing	Improved NHD/LLID Conversion Application	Hare
Region	2	Create an Online Event Mapper to allow users to create event tables based on 1:100,000 scale hydrography over the Internet	4/01/05	Online Event Mapper	Hare
Region	3	Develop and/or maintain computerized databases, applications and interfaces that facilitate the entry, compilation, management and dissemination of tabular and GIS data.. Assist cooperating agencies with tool development, as requested. Tools may include input interfaces, error checking, geographic locators, etc.	Ongoing, as needed	Functional tools	Wilke

WDFW	1	Develop and/or maintain computerized databases, applications and interfaces that facilitate the entry, compilation, management and dissemination of tabular and GIS data.	Ongoing	Efficient processes to compile and convert data	Hudson, Sikora
WDFW	2	Develop and implement a comprehensive routine to extract information from WDFW spatial data layers and transform that information into data structures more compatible with existing StreamNet exchange format structures.	12/31/04	Implementation of routine to support accurate and efficient data flow	Hudson, Sikora

Objective 2 Data management and delivery

Task 3 Data (content) Management

Manage data at the regional and cooperating agency levels to assure timely and accurate data flow from source to final distribution. Activities include exchange of data to PSMFC, data loading, updating data, quality assurance procedures, metadata development, etc.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Perform comprehensive QA/QC on all datasets maintained by CRITFC.	Ongoing	Written description of QA/QC practices implemented by CRITFC for information maintained as part of the StreamNet project	Forrest, Oftedahl
FWS	1	Add data, check quality, transform data to DEF, and exchange data with StreamNet.	9/30/05	FWS data maintained in DEF	Pastor
IDFG	1	Conduct a data quality review of all exiting IDFG redd count, dam/weir counts, freshwater harvest, hatchery returns and age composition data. Where necessary, edit these data sets to improve their accuracy and quality.	9/30/05	Newly reviewed and updated updates for redd count, dam/weir count, freshwater harvest, hatchery returns and age composition data.	Brown
MFWP	1	Manage data at the agency level, develop and maintain FGDC compliant metadata for GIS data, and exchange data to PSMFC according to deadlines specified in this work statement.	Ongoing	Quality data delivered	All staff
ODFW	1	Manage ODFW-NRIMP and StreamNet data, including metadata development/maintenance, QA/QC activities, and work with regional staff as necessary to assure seamless loading of data into the regional	Ongoing	Data appropriately managed, errors and problems related to data exchange resolved.	All staff

ODFW	2 Perform comprehensive QA/QC on all Oregon Trends, Age, Harvest, Dams, and Barrier datasets.	Ongoing	Data appropriately managed, errors and problems related to data exchange resolved.	Waters
ODFW	3 Coordinate and work with internal ODFW staff to improve the agency data collection efforts to allow more efficient compiling into internal intermediate NRIMP-Oregon StreamNet databases and/or StreamNet databases at the regional scale.	Ongoing	Consultation, tools, databases, programming as warranted	All staff
Region	1 Assist data contributing agencies in development of data, including formatting, coding, data entry, error checking, and submitting to the regional database.	Ongoing, as needed	Assistance to data providers	Hare, Banach, Kinney
Region	2 Examine the StreamNet database for errors and report any found to the appropriate entity for correction. Continue to improve error-checking capabilities.	Ongoing	Report data errors and consistency problems to originating agency for correction so that users encounter fewer errors.	Kinney, Banach
Region	3 Whenever new tabular data with a spatial component are submitted to the Region (e.g., fish distribution, hatchery facilities, etc.), create regional GIS layers 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 layers to the online query system, the ArcIMS interactive mapping system, and as downloadable layers for StreamNet	Ongoing	Spatial Data available to the public	Hare
Region	4 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 available through the StreamNet web site are current	Hare
Region	5 Obtain and refine layers such as ESUs, ecoregions, or elevations, and create cross tables for use by the query system.	Opportunistic	Improved GIS	Hare
Region	6 Assist the database manager with the spatial component of data and its implementation online	As needed	Improved spatial location of features	Hare
Region	7 Coordinate efforts by the StreamNet partners to maintain and update, as necessary, the 1:100,000 scale hydrography files for the states and the PNW region.	Ongoing	Up to date 1:100,000 scale hydrography	Hare

Region	8 Coordinate efforts by the StreamNet partners to create a hybrid 1:100,000 / 1:24,000 scale hydrography for the states and the PNW region. Implement these changes at the Regional office.	Ongoing	Creation of a hybrid 1:100,000 / 1:24,000 scale hydrography layer.	Hare
Region	9 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	Improved Query System	Hare
Region	10 Update and append data as submitted by StreamNet participants. Maintain logs of data submissions and major database changes. Manage logins and permissions. Produce downloadable versions of the StreamNet databases to keep in synch with the updated regional databases. Create views and stored procedures for use by the web query system and in the data loading process. Routinely backup all databases. Create and revise database structures and indexes. Develop and run QA/QC processes on new and existing data tables to Isolate missing, erroneous or duplicative data and work with source agencies to correct problems.	on going	Maintained StreamNet database and data submission	Kinney
Region	11 Assist the StreamNet Librarian to export the library reference database of StreamNet documents for routine inclusion in the StreamNet database for use by the web query system.	on going	Monthly reconciliation of the StreamNet Library database with the StreamNet tabular databases.	Kinney
Region	12 Work with the Steering Committee to complete a document describing the QA/QC processes followed by project cooperators	9/30/05	QA/QC document	Schmidt
WDFW	1 Manage data at the agency level, develop and maintain FGDC compliant metadata for GIS data, and exchange data to PSMFC according to deadlines specified in this work statement.	Ongoing	Accurate, up to date, documented data, maintained in StreamNet Compatible format, exchanged as appropriate	Sikora, Woodard
WDFW	2 Provide and update geo-reference field data as needed for all StreamNet data submissions. Improved geo-references generally contribute to multiple Objective 1 data categories.	Ongoing	Improved location coding for all Objective 1 data	Sikora
WDFW	3 Create standardized storage formats and protocols for area biologists to use with data collected at various fish collection facilities.	Ongoing	Standardized formats and protocols, leading to accurate and efficient data flow	Woodard

WDFW	4	Continue collecting GPS locations and converting all index sampling areas from alpha naming to a standardized LLID plus River Mile (RM)	11/30/04	Complete and standardized location coding for WDFW internal files; data submission to the Regional database if warranted	Woodard
WDFW	5	Generate a MS Access table that contains links to GPS Index area maps, survey card database and master escapement database.	12/31/04	Access table, leading to accurate and efficient data flow	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. The formal process for creating new and revising old DEFs may require significant amounts of time, potentially more than a year, for complex data categories.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Work cooperatively through the Steering Committee, following the DEF Process document, to revise existing and develop new DEFs to assure regional data consistency and allow for inclusion of new data types.	Ongoing	Updates, as needed, to the DEF document.	Roger
IDFG	1	Work cooperatively through the Steering Committee, following the DEF Process document, to revise existing and develop new DEFs to assure regional data consistency and allow for inclusion of new data types.	Ongoing	Updated and new DEFs submitted to the Steering Committee	Butterfield
MFWP	1	Work cooperatively through the Steering Committee, following the DEF Process document, to revise existing and develop new DEFs to assure regional data consistency and allow for inclusion of new data types.	Ongoing	Agreed upon standards of data exchange	Hess- Herbert
ODFW	1	Monitor adopted and proposed data exchange formats and provide comments, feedback, and/or recommended changes as necessary. Work cooperatively through the Steering Committee, following the DEF Process document, to revise existing and develop new DEFs to assure regional data consistency and allow for inclusion of new data types. New or modifications to existing DEFs will be submitted as warranted.	Ongoing	DEFs monitored and commented on as needed.	All staff
Region	1	Work cooperatively through the Steering Committee, following the DEF Process document, to revise existing and develop new DEFs to assure regional data consistency and allow for inclusion of new data types. The regional Biologist will serve as the primary coordinator of the DEF process and is responsible for updating and publishing the official DEF	Ongoing, as needed	Data Exchange Format is maintained and updated as new data types are added	Banach

Region	2 Investigate the use of the "TypeID" field in StreamNet time series data in relation to other fields. Propose fixes if appropriate, and adopt through the DEF modification process.	6/30/05	Improved description of time series data in the StreamNet database.	Banach, Schmidt
Region	3 Initiate work on a new DEF for Fish Sightings data. Review the approach being taken in California and in coordination with the cooperating projects, adapt for use in the Columbia Basin.	2/28/05	Initiation of new Fish Sightings DEF process, with quarterly reports of progress	Banach
WDFW	1 Work cooperatively through the Steering Committee, following the DEF Process document, to revise existing and develop new DEFs to assure regional data consistency and allow for inclusion of new data types.	Ongoing	Updated and new DEFs submitted to the Steering Committee	O'Connor, Woodard, Sikora
WDFW	2 Co-lead (with MFWP) final development and implementation of a hatchery release DEF that accommodates both resident and anadromous	12/31/04	Resident fish release data DEF completed as draft and submitted to the Steering Committee	Sikora, O'Connor

Objective 2 Data management and delivery

Task 5 StreamNet Internet sites

Continue to maintain and enhance the StreamNet Internet sites. Provide access to StreamNet data products through the Internet at both the regional and cooperating project levels. The StreamNet home page (www.streamnet.org) 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. The site will also be used to archive data sets developed by FWP participants for data that do not fit within the StreamNet DEF, including the means to index and search the archive.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Provide ongoing review of the StreamNet website through routine use of the site, providing feedback to StreamNet staff at PSMFC on any problems, errors or needed improvements.	Ongoing	Comments and suggestions to StreamNet Regional staff regarding the StreamNet web	Roger
IDFG	1	Provide ongoing review of the StreamNet website through routine use of the site, providing feedback to StreamNet staff at PSMFC on any problems, errors or needed improvements.	Ongoing	Input to the StreamNet Steering Committee and PSMFC StreamNet staff regarding potential improvements to the StreamNet web site	Butterfield
MFWP	1	Provide ongoing review of the StreamNet website through routine use of the site, providing feedback to StreamNet staff at PSMFC on any problems, errors or needed improvements.	Ongoing	Review as needed	Hess- Herbert

ODFW	1 Monitor and provide feedback on existing and new StreamNet internet features.	Ongoing	StreamNet site is monitored and feedback is provided to StreamNet	All staff
ODFW	2 Manage and maintain Oregon's web-based data integration, communication, and data transfer systems 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	Bowers, Brodeur, Herber
Region	1 Maintain and improve the StreamNet Internet site, including correcting errors, adding or fixing links, improving performance, improving looks and usability, etc.	Ongoing	Maintained and improved functionality and usability of the StreamNet Internet site.	McGill
Region	2 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	3 Conduct a thorough review of the web query system. Identify and address errors and omissions in data delivery. Improve help files.	3/31/05	Web query system with improved usability and improved data delivery.	Staff
Region	4 Review and rearrange the links pages on the StreamNet web site.	12/31/04.	Improved links pages.	Staff
Region	5 Maintain the GIS Data, Map, and PNW Reach File Internet pages.	Ongoing	GIS Data available to users over the internet	Hare
Region	6 Maintain, update as necessary, 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	Internet Mapper maintained and available	Hare
Region	7 Research integration of 4th, 5th and 6th field HUC boundary layers into a single region-wide dataset. Plan improvements to the web-query system and internet map application as this improved base data becomes available.	As possible	Improved base data	Hare
Region	8 Deploy new query system components and data categories that are approved by the Steering Committee	Ongoing, as needed	Enhanced functionality and new data categories available	Wilke

Region	9	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. Site usage reported in quarterly	Wilke
Region	10	Maintain and enhance the functionality, look and usability of the StreamNet web-based query system.	Ongoing	Functional and enhanced query capability	Wilke
WDFW	1	Provide ongoing review of the StreamNet website through routine use of the site, providing feedback to StreamNet staff at PSMFC on any problems, errors or needed improvements.	Ongoing	Feedback provided to PSMFC on functionality of StreamNet web site	O'Connor

Objective 2 Data management and delivery

Task 6 Respond to data / information requests

Receive and respond to requests for data and information, source materials, and custom products at the regional and cooperating agency levels. 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.

Project	Job	Planned work elements	Date Due	Deliverable	Lead
CRITFC	1	Respond to requests for data, maps, technical assistance, source materials, or custom data products at the agency level, within the capabilities provided by base funding. Requests will be logged and	Ongoing	Information services and products provided, as requested	Roger, Forrest
FWS	1	Respond to requests for information.	On request	Information provided on request	Pastor
IDFG	1	Respond to requests for data, maps, technical assistance, source materials, or custom data products at the agency level, within the capabilities provided by base funding. Requests will be logged and reported in quarterly reports.	Ongoing	Summary of requests completed provided in the StreamNet quarterly reports	Brown
MFWP	1	Respond to requests for data, maps, technical assistance, source materials, or custom data products at the agency level, within the capabilities provided by base funding. Requests will be logged and	Ongoing	Requests satisfied, details reported quarterly	All Staff
ODFW	1	Respond to requests for data, maps, technical assistance, source materials, or custom data products at the agency level, within the capabilities provided by base funding.	Ongoing	Requests are cataloged and fulfilled within existing resources	All staff

Region	1 Respond within one business day to requests for data, information or help. Log and report responses to all requests received.	Ongoing	Fulfilled user help requests, with requests summarized in the quarterly reports	Staff appropriate to request
Region	2 Finalize a standard user request tracking database structure so that all StreamNet partner agencies can use the same format for reporting responses to requests for data and other information or help.	12/31/04	More consistent user request reporting for the StreamNet project's quarterly and annual reports.	Banach
WDFW	1 Respond to requests for data, maps, technical assistance, source materials, or custom data products at the agency level, within the capabilities provided by base funding. Requests will be logged and reported quarterly.	Ongoing	Requests satisfied, details reported quarterly	All staff

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. Provide a repository for the source documents for the data contained in the StreamNet database.

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 contained in the StreamNet

<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	9/30/05	Updated, expanded collection of materials	Oftedahl
CRITFC	2	Develop a collection of materials related to the Columbia Basin, including reports from other Fish & Wildlife Program projects, other agency documents as they relate to the Basin, and other published and unpublished materials as requested by clients.	Ongoing	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

IDFG	1 Obtain reference documents for all data developed under Objective 1 and submit them to the StreamNet Library for inclusion in the collection and catalog.	Ongoing	Documents delivered to StreamNet library	Brown
MFWP	1 Obtain reference documents for all data developed under Objective 1 and submit them to the StreamNet Library for inclusion in the collection and catalog.	Ongoing	Reference provided on CD	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.	Waters, Wegner
ODFW	2 Continue organization of ODFW Library documents and update the library bibliography with new titles as they are identified.	Ongoing	ODFW Library contents shelved and the bibliography	ODFW Library
WDFW	1 Obtain reference documents for all data developed under Objective 1 and submit them to the StreamNet Library for inclusion in the collection and catalog.	Ongoing	Documents delivered to the StreamNet library.	All staff

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 the collection, 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 appropriate facilities for the storage and public use of the StreamNet Library collections.	9/30/05	Library open to public	Oftedahl
CRITFC	2	Catalog and organize the materials for ease of use by clients and staff	9/30/05	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	Maintain and Implement a plan to place electronic documents in the catalog and on the library website.	9/30/05	Access to electronic documents provided	Liberty
CRITFC	5	Develop and keep a schedule of open times and reference desk staff	9/30/05	Staff available to patrons during business hours	Liberty

Objective 3 Library and reference services

Task 3 Library services

Manage the StreamNet Library and provide library services to the StreamNet user community, the Council's 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	Liberty
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 patrons	Liberty
CRITFC	4	Provide access to hardcopy and electronic files of draft and final documents related to subbasin planning and the NPPC amendment	Ongoing	Material indexed to subbasin planning and made available	Oftedahl, Liberty
CRITFC	5	Identify changes and new features that will improve delivery library services	Ongoing	Recommendations to improve delivery of services	Oftedahl, 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.	9/30/05	Material circulation, as	Hannon
CRITFC	2	Maintain memberships in appropriate library and subject-related associations. Ex. IAMSLIC, NRIC, OFWIM, etc.	9/30/05	Presentations, reports, professional development	Oftedahl
CRITFC	3	Provide consultations for groups and other agencies on library organization and services	9/30/05	Services as requested, detailed in reports	Oftedahl, Liberty
CRITFC	4	Coordinate with other StreamNet libraries, library clients and other libraries to improve service to clients and limit duplication of efforts	9/30/05	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. Committee	9/30/05	Recommendations for improvements made to Steering	Oftedahl, Liberty

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.

Objective 4 Services to the Fish and Wildlife Program

Task 1 Data and Data Services to Support the Fish and Wildlife Program

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. Work under this task will have to be based on time available, particularly for larger requests.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Support Fish and Wildlife Program activities, such as R, M & E, subbasin assessment, etc., by providing data and maps and technical information management advice or assistance as requested, within available time and budget under base level funding.	Ongoing	Recommendations and comments to NPCC programs concerning improved information management	Roger
IDFG	1	At the agency level, support Fish and Wildlife Program activities, such as R, M & E, subbasin assessment, etc., by providing data and maps of existing StreamNet data and technical information management advice or assistance as requested, within available time and budget under base level funding.	Ongoing	Technical assistance and data services provided on request	Butterfield
IDFG	2	Provide data inventory services to the Coordinated Systemwide Monitoring and Evaluation Project (CSMEP).	Ongoing	Data inventory compiled into CSMEP C1 tables.	Brown
MFWP	1	Support Fish and Wildlife Program activities, such as R, M & E, subbasin assessment, etc., by providing data and maps and technical information management advice or assistance as requested, within available time and budget under base level funding.	As requested	Technical assistance and data services provided on request	Hess- Herbert
ODFW	1	At the agency level, provide tabular and/or spatial data, technical advice/assistance and data services to Fish and Wildlife Program participants, as requested. Support F&W Program activities, such as R, M & E, subbasin assessment, etc., within available time and budget under base level funding.	Ongoing	Technical assistance and data services provided upon request	Cooney

Region	1	At the regional level, support Fish and Wildlife Program activities, such as R, M & E, subbasin assessment, etc., by providing data and maps of existing StreamNet data and technical information management advice or assistance as requested, within available time and budget under base level funding.	Ongoing, opportunistic	Data or assistance provided, as requested	Banach
Region	2	Participate in and assist regional Monitoring and Evaluation efforts to provide data management guidance, provide any relevant StreamNet data, and to initiate work to obtain new data types necessary for R,M&E. Since no specific requests or funding have been received for this, work may be limited to scoping and advising. Development of new data types to serve R,M&E will be initiated only as current time and funding permit, or as current work priorities are reprioritized by regional	On request	Participation in R,M&E activities to scope data needs, provide existing data, and advise on data management and developing new data types	Schmidt
WDFW	1	At the agency level, support F&W Program activities, such as R, M & E, subbasin assessment, etc., by providing data and maps of existing StreamNet data and technical advice/assistance, within available time and budget under base level funding.	As requested and possible	Technical assistance and data services provided on request	O'Connor

Objective 4 Services to the Fish and Wildlife Program

Task 2 Participate in Fish and Wildlife Program Development Activities

Participate in planning, development and/or coordination meetings with regional entities to provide assistance in the area of data management, as requested, to support development of Fish and Wildlife Program projects and programs. Provide input on ways StreamNet can effectively contribute to the programs and general advice about data management. Participate in advisory groups, task forces, and other groups whose purpose is to enhance 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	Participation in regional groups, as appropriate.	Roger
CRITFC	2	Develop strategies for ESA recovery planning and NWPPC subbasin planning efforts to ensure data and technical literature are captured and made regionally accessible. This will be done "as possible" under base level funding.	Ongoing	Strategies to store data & literature in a permanent form that is regionally accessible over time.	Roger, Oftedahl
MFWP	1	At the agency level, 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.	As needed / requested	Participation in development of FWP programs, as requested	Hess- Herbert

ODFW	1	At the agency level, 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.	Ongoing	Participate as need	Cooney
Region	1	At the regional level, 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.	Opportunistic	Participation in development of FWP programs, as requested	Schmidt
Region	2	Continue participation on the Program Team for the Council's project to develop a Northwest Environmental Data-network to convey recommendations based on experience in the development of a regional approach to data dissemination.	Ongoing	Provide input to development of NED	Schmidt
Region	3	Continue participation in the Pacific Northwest Aquatic Monitoring Partnership for watershed and fishery data coordination. Participate in other R, M & E groups, including the Action Agencies, Federal Caucus and CBFWA, to provide support and data management expertise.	Ongoing	Provide input to developing a regional approach to obtaining and managing watershed data	Schmidt
Region	4	Participate with CBFWA in support of data management efforts, including work with the Collaborative Systemwide Monitoring and Evaluation Project.	Ongoing	Contribution toward creating a regional scope data management group	Schmidt
WDFW	1	At the agency level, 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.	Opportunistic	Participation in development of FWP programs, as requested	O'Connor

Objective 4 Services to the Fish and Wildlife Program

Task 3 Support to Subbasin Planning

At the regional and cooperating agency levels, work with subbasin planners to provide needed information from the StreamNet database and to capture data developed as part of the subbasin planning process.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Continue to provide data and analytic support to Oregon subbasin planners as needed, and as base funding resources allow.	Ongoing	Technical advice and analyses concerning subbasin plans through the NPCC amendment process and beyond.	Roger

MFWP	1	Work with subbasin planners to determine type of data within the Montana subbasin plans and opportunities for incorporating those data into StreamNet. Assist in providing data on the FWP website.	12/01/04	Assistance to subbasin planners, as requested	Hutten
ODFW	1	At the state or local level, and within existing resources, work with subbasin planners to capture data developed as part of the subbasin planning process. Develop data sets outside Oregon StreamNet's base efforts if requested by subbasin planners.	As needed	Requested data provided and newly developed data captured, as resources allow.	Waters, Wegner
Region	1	At the regional level, and within existing resources, work with subbasin planning groups to provide needed information from the StreamNet database. Work with regional entities and subbasin planning groups to provide data management expertise and services related to capturing data developed during the subbasin planning process and making them readily available. Assist with archiving subbasin planning data, and means of publicly distributing them, as requested. This effort will have to be scaled to fit within existing resources and available time.	Ongoing, as possible	Begin capturing data being developed under Subbasin Planning	Schmidt
WDFW	1	At the state or local level, and within existing resources, work with subbasin planners to capture data developed as part of the subbasin planning process.	As requested and possible	Data and follow-up assistance provided to the Subbasin Planning effort	O'Connor, Woodard

Objective 4 Services to the Fish and Wildlife Program

Task 4 Archive and deliver independent data sets, as requested

Work with participants 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, post data in the archive as independent data sets in their native formats.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Date Due</u>	<u>Deliverable</u>	<u>Lead</u>
CRITFC	1	Continue efforts to capture and archive subbasin planning data and literature, as base funding allows.	Ongoing	Proposals for systematically archiving subbasin planning material	Roger, Oftedahl
IDFG	1	On an opportunistic basis, work with FWP supported projects in the state to assist them with submission of their data sets to StreamNet for archiving and dissemination as independent data sets.	Opportunistic	FWP project data made available through StreamNet	Butterfield
IDFG	2	Work with the Idaho Supplementation Studies project to increase the use of the IDFG/StreamNet Spawning Ground Survey and Juvenile Trapping programs by IDFG biologists. Create automated export of these data to StreamNet DEF for inclusion in the StreamNet database.	Ongoing	Increased use of the Spawning Ground Survey and Juvenile Trap programs with eventual electronic flow of data to PSMFC	Murdock

MFWP	1	Work with FWP supported projects in the state to assist them with submission of their data sets to StreamNet for archiving and dissemination as part of the formal DEF or as Independent Data Sets.	As needed / requested	FWP project data made available through StreamNet	Hutten
ODFW	1	Work with FWP supported projects in the state to assist them with submission of their data sets to StreamNet for archiving and dissemination as part of the formal DEF or as Independent Data Sets.	As needed	Independent datasets captured and exchanged.	Waters, Wegner
Region	1	Coordinate with BPA and BPA contractors, StreamNet cooperators, and others to capture data sets, reports, and other electronic materials for inclusion on the StreamNet Independent Data Sets Internet page. Post these items on the Independent Data Sets page.	Ongoing, opportunistic	Additional independent data sets posted on the StreamNet web site in original format.	Banach
Region	2	Review StreamNet Links web pages. For Internet sites that provide on-line data, add the sites to the Independent Data Sets page.	12/31/05	Non-StreamNet on-line data sources searchable from the StreamNet web site.	Banach
Region	3	Solicit feedback on the use of the Independent Data Sets submission tool. Make changes to the tool and IDS web page as appropriate. Assist users with the IDS page and the IDS submission tool.	Ongoing, opportunistic	Improved, more user-friendly Independent Data Sets tool.	Banach
WDFW	1	Work with FWP supported projects in the state to assist them with submission of their data sets to StreamNet for archiving and dissemination as part of the formal DEF or as Independent Data Sets.	Opportunistic	FWP project data made available through StreamNet	O'Connor, Woodard

Objective 4 Services to the Fish and Wildlife Program

Task 5 Protected Areas

StreamNet will a) maintain and provide access to the Council's Protected Areas dataset, 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 these data available through online mapping. If the Council so directs, work with subbasin planners to record any desired changes to the protected status of individual streams.

<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. Provide access to the Protected Areas data through the online database and through the interactive map application. As time allows, work to resolve the remaining unresolved location issues that resulted from conversion of the data from the 1:250,000 scale to the 1:100,000 regional hydrography.	Ongoing	Protected Areas data remain publicly available. The remaining location issues are resolved.	Kinney, Hare

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 StreamNet project at the regional and cooperating agency 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>
All	1	Project oversight and guidance. Participate cooperatively in the StreamNet Steering Committee to guide the direction of the project, coordinate within respective agencies and resolve policy and technical	Ongoing	Project guidance provided, recommendations to improve project function and services	Project leaders
All except FWS	2	Supervise project staff at the cooperator level to provide guidance and staff development.	Ongoing	Supervision of staff members in each cooperating projects	Project leaders
All	3	Manage expenditures to accomplish the jobs in the Statement of Work within the approved budget.	Ongoing	Project goals accomplished within budgeted resources	Project leaders
All	4	Develop the annual project proposal and budget within submission deadlines.	7/15/05	Input received from cooperating projects and budget and SOW submitted to BPA on time	Project leaders
All except Region	5	Report accomplishment of the work outlined in the annual Statement of Work through quarterly progress reports submitted to PSMFC within 20 days of the end of each quarter.	20 days after end of quarter	Quarterly reports submitted to PSMFC on time.	Project leaders
All except Region	6	Submit the draft FY-04 annual progress report for the sub project to PSMFC within 50 days of the end of the fiscal year.	11/19/04	Annual report of CRITFC activities submitted to PSMFC.	Project leaders
Region	5	Report accomplishment of the work outlined in the annual Statement of Work through quarterly progress reports submitted to BPA within 30 days of the end of each quarter.	10/31/04, 1/31/05, 4/30/05, 7/31/05	Quarterly report submitted to BPA on time	Schmidt
Region	6	Submit the FY-04 annual progress report to BPA within 60 days of the end of the fiscal year.	11/30/04	Annual Report submitted to BPA on time	Schmidt

Objective 5 Project management and coordination

Task 2 Coordinate with Related Activities Beyond the FWP

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	On an opportunistic basis, coordinate with other state, federal, or tribal agencies and various local inter-agency planning and management work groups beyond the FWP to enhance the collection and management of data related to management of fish and wildlife resources.	Opportunistic	Coordination with agencies and groups beyond the FWP	Roger
IDFG	1	On an opportunistic basis, coordinate with other state, federal, or tribal agencies and various local inter-agency planning and management work groups beyond the FWP to enhance the collection and management of data related to management of fish and wildlife resources.	Opportunistic	Assistance provided and activities reported in quarterly and annual progress reports	Butterfield
MFWP	1	Coordinate with other state, federal, or tribal agencies and various local inter-agency planning and management work groups beyond the FWP to enhance the collection and management of data related to management of fish and wildlife resources.	Ongoing	Coordination of StreamNet activities with other programs outside the FWP	Hess- Herbert, all
ODFW	1	On an opportunistic basis, coordinate with other state, federal, or tribal agencies and various local inter-agency planning and management work groups beyond the FWP to enhance the collection and management of data related to management of fish and wildlife resources.	Ongoing	Coordinate as needed.	Cooney
Region	1	On an opportunistic basis, coordinate with other state, federal, or tribal agencies and various regional inter agency planning and management work groups beyond the FWP to enhance the collection and management of data related to management of fish and wildlife resources.	Opportunistic	Participation and advice to organizations not involved with the Council's FWP	Schmidt
WDFW	1	On an opportunistic basis, coordinate with other state, federal, or tribal agencies and various local inter-agency planning and management work groups beyond the FWP to enhance the collection and management of data related to management of fish and wildlife resources.	Opportunistic	Coordination, activities reported in quarterly and annual progress reports.	O'Connor

Objective 5 Project management and coordination

Task 3 Professional and Public Involvement

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, issue papers, 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>
All except Region	1	Produce informational documents on StreamNet data activities for natural resource oriented publications and the public, give oral presentations to relevant user groups either public or professional, and participate in various meetings and forums in support of project goals.	Ongoing, opportunistic	Publications, presentations in support of project goals	Project leaders
Region	1	Publish at least two editions of the StreamNet Newsletter during the fiscal year, providing readers with information about StreamNet activities, available data, data updates, new data services, etc.	12/31/04 and 7/1/05	Two StreamNet Newsletters. Informed StreamNet user community.	Banach
Region	2	Prepare and deliver presentations to scientific and professional meetings to demonstrate project capabilities and accomplishments, advertise StreamNet services, and to solicit additional data and coordination.	Opportunistic	Presentations given	Schmidt
Region	3	Developed and distribute 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 explaining data categories and structures, as necessary.	As needed	Explanatory materials produced	Schmidt
