



StreamNet Project

BPA Project No. 198810804

Fiscal Year 2002 Second Quarter Progress Report

January 1, 2002 through March 31, 2002

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

Table of Contents	Pg.
Introduction.....	2
Objective 1. Data Development and Update, Priority Data Sets....	3
Objective 2. Data Development and Update, Other Data Sets.....	14
Objective 3. Data Management and Delivery.....	21
Objective 4. Library / Reference Services.....	38
Objective 5. Services to Fish and Wildlife Program Activities.....	41
Objective 6. Project Management and Coordination.....	46
Supplemental Information: Work accomplished outside SOW.....	53

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) and is funded primarily by the Bonneville Power Administration. The project is administered by the Pacific States Marine Fisheries Commission. Three fourths of the project consists of sub-projects within the state fish and wildlife agencies, Columbia River Intertribal Fish Commission and the US Fish and Wildlife Service to develop databases within the respective agencies and facilitate data transfer regionally.

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, located at CRITFC in Portland, OR.

Work priorities for FY 2002 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 distinction between anadromous and resident fish data in the data development objectives was dropped, and the annual statement of work was reorganized to reflect that change in approach. This year, the agencies indicate in each individual job whether the work is directed toward anadromous or resident species for each particular data type. This change is a change in organization, not project direction. The majority of work remains focused on anadromous species due to the sport and economic value of these species and because of associated Endangered Species Act aspects. However, efforts are also underway to develop increased information on resident species distribution, and increased effort is directed toward identifying resident species information that may be developed by other projects funded through the FWP and obtaining those data for archiving so that they are more widely available.

This report documents accomplishments made by the project and its cooperators during the second quarter of Fiscal Year (FY) 2002. Since the cooperating agencies work on different jobs throughout the year, and not all agencies address the same jobs in their respective portions of the Work Statement, the work accomplished in this quarter varies by cooperator. Jobs that did not have any work addressed during the quarter are not included in this report.

Activities in the second quarter of FY 2002 included routine development, maintenance and posting of various data sets, as well as routine administrative activities to continue project function. Key highlights of activities by each of the project participants this quarter included:

CRITFC: Activities in the second quarter have been more routine than the previous quarter. Data trends are updated through 2000 and the Library continues planned activities. Frequent discussions continue with the Power Planning Council and NMFS to coordinate planning efforts and related data management activities. The Yakama Nation has requested StreamNet assistance to streamline data reporting and provide additional data reports from its web-based system. This is an encouraging development that we hope to use to develop a prototype application for other tribes to consider adopting.

IDFG:

1. Idaho StreamNet made great progress in aiding IDFG regional field biologists to compile their data with StreamNet geo-locational standards. Our GIS and database tools were installed in three IDFG field offices. This will ease the migration of IDFG fishery data into StreamNet, making more data available with greater speed. For example, using our tools IDFG fish research staff began to digitize all of their historical redd count and carcass count survey data.
2. We began to obtain the enhanced infrastructure to build a truly complete field-to-StreamNet data management system. Using contributed IDFG funds (non-StreamNet), we purchased two new servers that will be the core of our new system.
3. The tools we have developed for the Idaho Supplementation Study (ISS) were presented to the non-IDFG cooperators in ISS. The reaction was very favorable and both federal and tribal agencies agreed to use our tools in the upcoming year. This will be a major advantage having other agencies compiling their data in StreamNet compatible formats.
4. We updated the Idaho carcass count database for 1996 through 2000.

MFWP: The Montana StreamNet project is the smallest project of the four basin states, due primarily to the lack of anadromous fish that high in the Columbia Basin. Primary data accomplishments during the second quarter included exchange of Hatchery Facilities and Montana Dams databases to the Regional StreamNet database. Montana also saw adoption of the Fish Distribution DEF as a primary accomplishment for the project.

ODFW: 1. We successfully compiled, processed, and entered updated trend information for most Columbia Basin trends in Oregon, and all other trend data supplied prior to December 19, 2001, and submitted this information to StreamNet on February 13, 2002.

2. Using funding provided by the Governor's Natural Resources Office and Oregon Watershed Enhancement Board, we continued to update 1:100,000 scale fish habitat distribution data in the entire anadromous zone of Oregon, and also to develop fish habitat distribution data at the 1:24,000 scale for this same area. Most field data collection was completed during this quarter with only minor reviews and modifications remaining. We still must process all the hardcopy information into electronic format. This effort will greatly improve the accuracy of StreamNet's fish distribution data.

3. We replicated the Viable Salmon Population Project data-store database and provided it to NMFS, in support of the Willamette-Lower Columbia TRT. We also presented our findings at the WLC TRT Retreat. This effort provided significant data and technical support to the TRT by completing the development of a TRT-focused data system and populating that system with existing StreamNet data, as well as new information that was acquired directly from data developers.

4. Oregon staff spent a considerable amount of time reviewing and commenting on proposed DEF modifications, particularly those related to fish distribution.

5. Using StreamNet funds, we continued to develop distribution data for cutthroat trout in the Hood basin at the 1:100,000 and 1:24,000 scale. Efforts were also made to acquire and combine cutthroat related information from other areas in order to build a 'first-cut' cutthroat distribution layer for the Oregon portion of the Columbia basin.

6. We accomplished normal project activities, including completion of quarterly reports, attendance and participation in the StreamNet Steering Committee and Technical Committee meetings, and responding to direct requests for information.

USFWS: The smallest component of the StreamNet Project, FWS is responsible for providing specific hatchery related data and representing FWS on the StreamNet Steering Committee. Key accomplishments the second quarter included compilation of 2002 hatchery release information for the national fish hatcheries in the Columbia Basin, beginning to resolve problems with 2001 release data in preparation for exchanging the data to PSC, and transformation of 2001 hatchery return and age data into DEF and submission to the StreamNet regional database.

WDFW: 1. During the second quarter, WDFW StreamNet staff developed and entered Lower Columbia River tributary chum escapement figures for the year 2000 return. These and other chinook and chum data were also provided to biologists for use in updating subbasin reports for various tributaries.

2. Staff completed creation and population of a smolt/adult fish data system for capturing results from 1998-2001 interception efforts at the Cedar Creek trap. The trap data are now ready to be used in conversion and exchange work with StreamNet, once we determine if the

existing EscData format is most appropriate, or whether the proposed FishSurvey exchange format will be a better “fit”.

3. Hatchery data work focused on hatchery returns data; year 2000 data was updated and sent to StreamNet. In addition, a draft “improved” data exchange format for hatchery returns data was presented to the Steering Committee for deliberation. While the existing format is adequate, the proposal we built includes additional data items that are commonly requested by users that contact us for returns data.

4. Staff worked on several smaller initiatives involving priority resident fish data. Assistance was provided to the Yakima Ecological Interactions Team to spatially enable resident fish sampling sites to enable fish presence modeling work in the upper Yakima Basin. Sampling sites for both cutthroat trout and bull trout were also digitized in order to help build a spatial database for recent sampling on Lower Columbia R. tributaries. Finally, resident fish sampling datasets from Stock Assessment work in the Pend Oreille area of the Upper Columbia were analyzed in context with existing StreamNet data exchange formats to determine the most appropriate way to make these data regionally available through the StreamNet Project. That assessment will be completed after the sampling season ends in early October.

Region (PSMFC): In addition to project administration and infrastructure maintenance, the regional component of the project at PSMFC accomplished the following key actions in the second quarter:

1. A new web server was put into production this quarter, significantly improving speed and reducing down time.
2. Two new Internet mapping applications were implemented that allow on-line mapping and querying of the StreamNet database based on selections made on a map. These were made possible by the increased speed of the new server and use of ArcIMS software.
3. The ability to query the StreamNet database by the newly defined 2001 NWPPC Provinces and Subbasins was implemented. Also added was the ability to query data by larger "regions" outside the Columbia basin.
4. An NHD/LLID conversion tool was finalized. This allows conversion between either stream network system, in either direction. Very few problems with this application remain, and they will be addressed on an as-needed basis.
5. The following data updates were posted on-line: a. Hatchery Returns data from WDFW and USFWS; b. Washington hatchery facility updates; c. Dam facility information from ODFW and MFWP; d. Escapement data (Adult Returns, Dam/Weir Counts & Freshwater Harvest) from ODFW; e. Habitat Restoration data from MFWP; and, f. Updated Washington bull trout distribution.
6. We transferred Protected Area and Smolt Density Model data locations from river reach numbers (1:250,000 scale) to LLID locations (1:100,000 scale) where possible (86% of all records). We developed a QA procedure to assess the results of this work and ran a random QA, finding that the work was 97.4% (plus or minus 1%) accurate. This QA work helped identify a series of fixable errors, which will be corrected during quarter 3 in order to bring the confidence level in the conversion closer to 100%.
7. We replaced the custom query system web server with a ColdFusion web server. Both stability and performance improved. Cold Fusion has also allowed us more flexibility and faster implementation of query system changes.
8. Regional staff responded to 55 requests for information or help during the quarter
9. StreamNet Program Manager began work with the SAIC group to implement a regional data management evaluation.

Following are specific accomplishments for the Objectives and Tasks as listed in the FY 2002 StreamNet Statement of Work (<http://www.streamnet.org/about-sn/pub-docs/SN-2002-ws.pdf>). Planned work is presented *verbatim*, with actual accomplishments listed to the right.

Objective 1 Data Development and Updates, Priority Data sets

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. These priority data types will 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.

Objective 1 Data Development and Updates, Priority Data sets

Task 1 Distribution and life history (use type)

Document the occurrence, distribution and life history characteristics of native fish species, both resident and anadromous. Project participants have placed a high priority on updating these data during the fiscal year, utilizing newly re-defined use types.

Project Job Planned work elements

Accomplishments, Second Quarter 2002

IDFG 1 Compile available IDFG data on fish distribution into the IDFG/StreamNet Fish Information System. These data will come primarily from Collecting Permit reports and IDFG files being digitized via a BLM Challenge Cost Share grant. Both of these data entry efforts are independent of StreamNet. Other data will be collected from incidental observations in other tasks. Convert these data into StreamNet data exchange format and send to PSMFC as they become available.

We completed and delivered the metadata to accompany the Salmon and Clearwater bull trout data to USFWS.

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.

This task is ongoing. Data was not exchanged as the DEF was not finished in time. We discussed the Distribution DEF at the Steering Committee Meeting and at the technical committee meeting. We reached agreement on a DEF and PSMFC staff will put together the final format.

MFWP 2 Visit MFWP biologists in 2002 to collect 2000-2001 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.

This task is ongoing. We meet with several of the National Forest to assist them in setting up their fishery databases.

ODFW 1 Update, maintain, correct and exchange anadromous and resident fish distribution information (DistUse and DistPresence tables). Efforts will focus particularly in the Upper portion of the basin (NE Region, upstream of the Hood River basin).

1. The GIS Analyst worked on updating the metadata for version 6 of Oregon's 1:100K distribution datasets.
2. The 24K Project GIS Coordinator posted all updated distribution data and metadata (100K and 24K) to the ODFW GIS Data website and notified all persons who have expressed interest in knowing when the data is updated via e-mail.

ODFW	2	Update (and modify if needed) the Fish Presence Survey database which helps populate the DistPresence table. These data will update the distribution data developed under Task 1.1.	<p>1. Oregon Data Entry Technician entered fish presence survey data for the South Willamette Watershed District during this quarter. As of 3/15/2002, we have 6,356 records in the Fish Presence Survey database. Data entry was halted temporarily as the technician completed another temporary job appointment.</p> <p>2. The GIS Analyst processed Aquatic Inventory Project fish presence GIS data into documentation format. He also assigned SpeciesID and RunID values for cutthroat accordingly depending upon whether the observations fell within the range of Winter Steelhead (coastal cutthroat), John Day basin (Westslope) or the Alvord Lake Basin (Lahontan). He followed a similar model for developing Rainbow data, except he assigned SpeciesID = Redband for closed basin HUCs. He processed records for chinook, coho, Bull Trout, Brook and Brown trout, unknown salmonids and Mountain Whitefish. Lastly, he submitted over 6,100 records to the Oregon Database Manager for inclusion in the Documentation database that will be submitted to StreamNet by the end of the 2002 calendar year.</p>
Region	1	Assist data contributing agencies in development of data, including formatting, coding, data entry, error checking, and submitting to the regional database.	<p>Work continued on modifications to our fish sightings and distribution tables. We are continuing the attempt to work one state at a time. PSMFC and Oregon worked on changes needed from the perspective of ODFW. The issue of developing standard definitions for the distribution data was not resolved during the quarter.</p>
WDFW	1	Incorporate field updates for Washington fish distribution and use data (when provided) into WDFW's GIS database, with emphasis on bull trout and other sensitive salmonids this year. Update tabular files via export from the GIS database. Convert spatial and tabular data to new StreamNet exchange formats and submit to PSMFC.	<p>Related to fish distribution, Lensegrav analyzed the USFWS' ARC/INFO coverage of Bull Trout distinct population segments (DPS) for Anne Blakely (WDFW), making corrections as warranted. He also provided GIS assistance to Molly Hallock (WDFW) for her Bull Trout (and cutthroat) sampling location work. This sampling/survey work is ongoing and ultimately it will be captured for StreamNet to support the assessment of distribution presence.</p>

Objective	1	Data Development and Updates, Priority Data sets	
Task	2	Adult abundance in the wild Develop and maintain information on adult abundance for native fish species, resident and anadromous, including escapement, redds counts, peak spawner counts, trap counts and dam and weir counts. 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 2000.	
<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Accomplishments, Second Quarter 2002</u>
CRITFC	1	Update existing tribal escapement data through 2001	The Yakama Nation asked whether StreamNet could assist them to improve Web-based reporting for their tribal fishery data system. Several discussions were held with their staff, CRITFC and Regional StreamNet staff to clarify their needs. Two applications were identified as potential prototype projects: 1) applications to automatically generate DEF input from the Yakama data system for updating existing StreamNet trends; 2) creating new report formats to make additional Yakama data available to users.
CRITFC	2	Update mainstem Columbia and Snake River dam counts through 2001 and provide updated data to the StreamNet database.	Mainstem dam counts were updated through spring 2001 salmon runs.
IDFG	1	Submit 1998, 1999, and 2000 field season redd count data.	<ol style="list-style-type: none"> 1. Our previous review of existing redd count data found that redd count surveys had often changed dramatically over time in regard to location, size and methodology, yet were not assigned new trends. We determined that a review of trend assignment, including breaking up existing trends into multiple new trends, was necessary. During the second quarter we worked to develop a system, methodology and tools for analyzing redd count surveys and their assignment to StreamNet trends. 2. We completed the editing and adding of records to our redd count database for all years before 1989. 3. We found and entered carcass data associated with redd counts in the Salmon River drainage for 1996 through 2000.
IDFG	2	Compile year 2001 field season redd count data and submit to PSMFC.	Only a portion of the 2001 field season redd count data were available. Data for 30 of approximately 100 trends were entered into our data management system.
MFWP	1	Complete input of 1999-2000 data, including trend, count and references; exchange to StreamNet.	Work continued on this ongoing job.
MFWP	2	Collect all 2000-2001 survey data during field office visits.	Work continued on this ongoing job.

MFWP 3 Input 2000-2001 data into MRIS, including trend, count and references. Provide data in data exchange format to regional StreamNet staff if completed.

ODFW 1 Update existing abundance and indices trends (escapement, redd counts, trap counts, peak/other spawning counts, etc.) where data collection continues for anadromous and resident species through 2000 and modify as needed to adhere to any new data exchange standards. Three data submissions are planned.

Work continued on this ongoing job.

1. Oregon's Database Analyst reviewed the Resident Fish Project Matrix sent by StreamNet and determined that all but 1 of the 7 projects had already been contacted for resident information. She created and submitted a spreadsheet similar to the Regional resident data matrix and added fields to provide information that Regional StreamNet was interested in, including a) what types of data are provided, b) availability of the data, and c) how one would go about requesting the data. She also talked with Chris Brun, and Lawrence Schwabe, and received their bull trout data. There is one more biologist to contact, but he is unavailable until after April 1. The Database Analyst also created a table of resident data projects conducted on water bodies shared by other states. She sent the table to Bart Butterfield (Idaho StreamNet) asking for his help in identifying who is responsible for entering the data from the projects into StreamNet. His reply confirmed our belief that work on the Snake is conducted mostly by IDFG, and will be captured by Bart and his crew.
2. Oregon identified 1,189 records that need to be updated through 2000. This number includes Columbia Basin Trends, as well as all other Trends in Oregon. The Database Analyst continued contacting data contributors to obtain updated data. By the end of this quarter, the Database Analyst had compiled, processed, and entered updated trend information for most Columbia Basin trends in Oregon, and all other trend data supplied prior to December 19th 2001. A StreamNet data submission was made on 2/13/02.
3. The Database Analyst responded to numerous questions and concerns from Region staffers (Mike Banach and Bill Kinney) concerning trend information.
4. The Database Analyst reviewed all the subbasin summaries for Oregon available on the CBFWA web site for the purpose of identifying abundance data that is suitable for the StreamNet Database. Nothing was found related to abundance data, but timing, barrier, hatchery/fraction, and origin information was identified in some of the subbasin summaries. Since Oregon's 1:24K Fish Habitat Distribution Project is also looking for this kind of information, they will be asked to review the summaries for data pertinent to their areas for documentation purposes.
5. Oregon's Database Developer completed a temporary Trend Interface to allow our Database Analyst to work with the Trend data. The original interface had too many problems to remain in service. However, work still needs to be completed on the new one to have a fully functional Trend Interface.
6. Staff created a query to update the End Year field for each Trend record based on it's EscData records. Originally this function was done using several queries, but now it uses only one. In the process of building this query we discovered an anomaly in how StreamNet calculates EndYear. This topic has been posted to the SN Forum for resolution.

Region	1	Assist data contributing agencies in development of data, including formatting, coding, data entry, error checking, and submitting to the regional database.	As of the end of the quarter, USFWS has not sent to StreamNet any data for spawning grounds counts. Because USFWS has recently begun collecting this type of data in north-central Washington, USFWS and PSMFC personnel discussed procedures for capturing and submitting these data to the regional database.
WDFW	1	Research, compile, convert and submit natural spawner data updates (returns and/or redd counts) through 2000 (and 2001 as available) for available species (Columbia River and Puget Sound).	<ol style="list-style-type: none"> 1. Smith contacted several regional biologists to collect various escapement data needed to fill data gaps. The collected data is continually being documented in a short report and added to the escapement database. Smith also received the 2000 Columbia River Chum return report and finished the chum escapement updates. 2. Smith and Woodard continued the Cedar Cr. 1998-2001 smolt and adult trap database work they started in the first quarter. There are approximately 2000+ records each year with 15+ fields. Smith proofed the data against the original data sources while Woodard created documentation, supporting files and business rules for future data entry. Then Woodard turned this dataset over to Smith for future updates, maintenance and management. 3. Sikora researched StreamNet's WDFW records that have a Trend record but no EscData table records (orphan records) and zero count records and confirmed the orphan records were lost by some StreamNet maneuver.

Objective 1 Data Development and Updates, Priority Data sets

Task 3 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 2000. Release data for resident species are currently low priority and will require specific resources in the future. Efforts this year will focus on creating cross references between PSC release codes and LLID stream location identifiers. We will explore means of providing data on specific release locations rather than more general PSC codes.

Project	Job	Planned work elements	Accomplishments, Second Quarter 2002
FWS	1	For anadromous hatchery releases, compile FWS hatchery release data, w/ added CWT information. Transform data to format 032. Submit 2001 hatchery release data to PSMFC via USFWS WWFRO.	I compiled 2002 releases from National Fish Hatcheries in the Columbia River Basin in the CRiS database. I also began resolving problems with 2001 release information in preparation for sending the information to PSC.
WDFW	1	For anadromous species, research, compile, convert and submit existing WDFW anadromous release data as detailed, "unrolled" records directly to StreamNet (instead of via RMIS). As warranted, organize procedures to ease future updates.	Hatchery releases continue to be a highly requested data category and Lensegrav continued to handle these requests.

WDFW	2	Collect, convert and submit Joint Stock Assessment Project (JSAP) blocked area release data (1994-Present, Columbia River drainage above Chief Joseph Dam) per the expected format. See Job 3 for efforts in other areas.	Lensegrav delivered hatchery release data for select lakes in the Joint Stock Assessment Project (JSAP) area to Jason McClellan (a project leader). This delivery is the first step in cleaning records for this area and ultimate delivery to StreamNet.
------	---	---	---

Objective 1 Data Development and Updates, Priority Data sets

Task 4 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 2000. Development of disposition data is lower priority and would require additional resources.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Accomplishments, Second Quarter 2002</u>
FWS	1	Compile FWS hatchery return data for FWS hatcheries and submit to the regional database	Pastor transformed 2001 return information into the StreamNet DEF and sent this information to StreamNet.
IDFG	1	Submit 1998, 1999, and 2000 return season hatchery return data.	We worked on the administrative routines in the FIS to migrate our data into StreamNet data exchange formats for data submittals.
IDFG	2	Compile year 2001 return season hatchery return data and submit to PSMFC.	2001 field season hatchery return data were not yet available, because the brood year reports are not completed.
WDFW	1	Research, compile, convert and submit hatchery returns updates through 2000 in StreamNet data exchange format. This submission includes new data and corrects errors that were previously submitted for post-1995 data. Work further with WDFW's Hatchery Division to improve their original database source and collection procedures as an investment in future timely and accurate StreamNet updates.	Woodard updated WDFW's internal StreamNet hatchery returns database through the 2000 return year, converted it to a flat file and delivered it to Sikora. After several discussions with Woodard, Sikora finalized the conversion to StreamNet format and submitted XchangeWDFW20020321.mdb and documentation to Kinney. This submission reflects the updates and revised EndFt coding to coordinate with the measure from the stream mouth to the location of the hatchery as reported in the Hatchery (Facility) table. Sikora also prepared a post-exchange summary of the timeline for the exchange to potentially reveal areas for improvement and highlight issues that should be addressed in the upcoming data exchange format review.

Objective	1	Data Development and Updates, Priority Data sets	
Task	5	Dams and Fish Passage Facilities	
		Develop and maintain information on dam facilities. Enhance the existing StreamNet dams data set by updating relevant data from the Pacific Northwest Hydropower Database and Analysis System (NWHS) and the National Inventory of Dams.	
Project	Job	Planned work elements	Accomplishments, Second Quarter 2002
MFWP	1	Complete the creation of a Montana dams spatial coverage and associated data in the StreamNet exchange format. Layer and data are being created using the NWHS and the National Inventory of Dams. Tasks to date include combining the data from the two sources; manual checking needs to be done before the final product is completed. Exchange the Dams data set to the StreamNet database.	We made minor data edits and refinement to the data exchanged.
ODFW	1	Update, maintain, correct and exchange dam information (as part of the Barrier database).	1. Oregon's GIS Analyst initiated a q/a effort to correct location information for Oregon dams. He investigated the history of how the "Provisional" field was originally populated and reviewed the dams in relation to DRG's and DOQ's for all anadromous areas of the Columbia with the exception of the upper Willamette. Through this process, he was able to adjust measures for (or verified the location of) over 120 dams. This effort was coordinated with the 24K Project GIS Coordinator and our Assistant Database Manager.
WDFW	1	StreamNet currently carries Washington dam information that wasn't officially exchanged by WDFW. We will compare StreamNet's existing Washington dams data with WDFW's internal dam layer and any other dam data resource (i.e. DOE's dams), adjust the WDFW layer accordingly and submit to StreamNet.	1. Sikora met with O'Connor and Hudson to discuss a strategy for spatial dam work. Ideally it would be most efficient to pull all the dam points into Hudson's system to manipulate the points since we were already familiar with the utility of Hudson's system. Despite optimism that Hudson would be able to assist this effort, Hudson was tied up with other commitments. So, using an ArcView project, Lensegrav researched and prepared a master tabular and spatial file to use for the StreamNet exchange. Lensegrav documented the findings and decisions he made for his product and near the end of this quarter he delivered it to Sikora. His work focused on merging records from several dam files from (National Inventory of Dams, Department of Ecology, WDFW and StreamNet) and representing the best point for a unique dam. 2. Using the ArcView project, Lensegrav's work was slower than the optimum strategy because it forced attention to new issues and solutions to a process that was already fairly worked out for our hatchery facility points using Hudson's system. Using ArcView, we've yet to resolve the issue of moving an existing point and easily generating a new longitude and latitude. We have an ArcView utility for this but we're still working out some problems with it. When all the points have been moved, we still must verify if we can pull the new points into Hudson's system and get the exact same latitude and longitude.

Objective	1	Data Development and Updates, Priority Data sets	
Task	6	Hatchery Facilities	
		Develop and maintain information on anadromous and resident hatchery facilities, including information on location, design, management and authorization. Information will be updated through 2001 for required fields. We will review the optional (non-required) fields in the DEF.	
<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Accomplishments, Second Quarter 2002</u>
FWS	1	Update hatchery facility records as needed, Update hatchery water records as needed. Update FWS data sets with 2001 data and submit to PSMFC	I called to the attention of StreamNet regional staff problems with posted Hatchery Facility information.
IDFG	1	Submit hatchery facilities table in data exchange format to PSMFC.	We worked on the administrative routines in the FIS to migrate our data into StreamNet data exchange formats for data submittals.
MFWP	1	Update the StreamNet hatchery database with Montana's public and private facilities. Exchange with StreamNet upon completion.	Completed
ODFW	2	Maintain hatchery facility records and update location information as available.	1. The Assistant Database Manager reviewed and commented on the hatchery facility data that our GIS Analyst had QA'd, and identified which ones required further review. She also worked with the GIS Analyst on data reconciliation. As part of this, they contacted ODFW District staff to get information on a number of hatchery facility records. We proposed using a code of "9999 for the LastYear field when a hatchery is no longer in operation but the closing year is not known.
Region	1	Assist data contributing agencies in development of data, including formatting, coding, data entry, error checking, and submitting to the regional database.	A hatchery location error was found in Idaho. PSMFC staff alerted IDFG to the error, which was corrected in both databases.

Objective	1	Data Development and Updates, Priority Data sets	
Task	7	Harvest	
		Develop and maintain 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>Accomplishments, Second Quarter 2002</u>
CRITFC	1	Review ocean and mainstem Columbia River harvest data presently in the StreamNet databases and report findings to Steering committee	Ocean harvest data were gathered from PSC (for ocean catches) and the U.S. v Oregon Technical Advisory Committee (for in-river harvest).These data will be used to develop new prototype databases and report formats.
CRITFC	2	Correct and update ocean and mainstem Columbia River harvest data as agreed to by Steering Committee	Initial work was done on assembling a data set for developing prototypes of new harvest data structures and report formats.
ODFW	1	Compile and exchange updated and/or new tributary sport harvest data.	No work was completed on this task this quarter. We continue to wait for an update of this data from the Portland Headquarters office.

Objective 2 Data Development and Updates, Other Data sets

Support the need for region wide fisheries data for research, monitoring, modeling and management through acquisition of new information and updates to previous information for data sets of medium or lower priority as time and funding allow. This objective includes anadromous and resident species.

Objective 2 Data Development and Updates, Other Data sets

Task 1 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. Existing data sets will be maintained and enhanced as practical. Additional sources of this information will be explored.

Project	Job	Planned work elements	Accomplishments, Second Quarter 2002
MFWP	1	Continue to collect, centralize and maintain all stream restoration projects 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.	Work continued on this ongoing job.
ODFW	1	Maintain, correct and exchange existing restoration project information.	There were no requests to update or correct existing records this quarter.
WDFW	1	If new funding 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.	Lensegrav analyzed and conferred with Robin Carlson of California Fish and Game (CDFG) on CDFG's proposal to change the Habitat Restoration DEF. CDFG and WDFW have similar DEF needs.

Objective	2	Data Development and Updates, Other Data sets	
Task	2	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.	
<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Accomplishments, Second Quarter 2002</u>
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.	Existing data were gathered and progress continues.
ODFW	1	Update, maintain, correct and exchange adult migration barrier information.	<ol style="list-style-type: none"> 1. Staff continued to add adult migration barriers and improve the quality of the information currently in Oregon's Barrier Database. 2. The Assistant Database Developer completed several drafts of the fish passage barrier data needs assessment questionnaire. Staff continued to review the draft documents and provided comments. The purpose of the questionnaire is to gather information on data needs by users for better design of our new Barriers Database 3. Oregon modified it's Barrier and Dam tables with a new field to track whether a barriers' location has been verified or not. Definitions were also drafted for these 'LocationVerified' fields.

Objective	2	Data Development and Updates, Other Data sets	
Task	3	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. The rest of this data category is still under development and may require additional resources to accomplish.	
<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Accomplishments, Second Quarter 2002</u>
CRITFC	1	Seek to obtain tribal data on smolt abundance. Inform Steering Committee on data availability	We surveyed all tribes about the type of smolt abundance data they collect. Data sets are very dispersed and exist in a variety of formats. We began working with the Yakama Nation to develop a prototype smolt reporting system which might be useful for other tribes.

IDFG	1	Begin design and collection of juvenile trapping component in IDFG/StreamNet Fish Information System. At current funding levels this task will be of lower priority than Objective 1 data components and progress will depend on completion of Objective 1 tasks. This task is also dependent on collaboration with non-StreamNet projects in IDFG.	IDFG biologists used our Juvenile Trapping program to enter historical trapping data. When finished, these data will be available to StreamNet.
WDFW	1	As funding and time permits, collect and scope existing juvenile data to plan future conversion and submission efforts.	Cedar Cr. 1998-2001 smolt and adult trap data work is described under Objective 1, Task 2, Job 1.

Objective 2 Data Development and Updates, Other Data sets

Task 4 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 test location for each cooperating agency this year as a means of testing data organization/format and utility.

Project	Job	Planned work elements	Accomplishments, Second Quarter 2002
CRITFC	1	Survey member tribal fishery programs to determine availability and format of salmon age data. Inform Steering Committee on data availability	Information has been received for Yakama and Nez Perce. Follow up contacts will be made with Umatilla and Warm Springs.
FWS	1	Update age and sex data through 2001.	I transformed 2001 returning fish age information into the StreamNet DEF and sent this information to StreamNet.
IDFG	1	Compile year 2001 Age/Sex Composition data.	2001 field season age data were not yet available, because the brood year reports are not completed.
MFWP	1	During the field office visits in 2002, the availability of age data will be determined. Information will be gathered on what is being collected, in what format and for what geographic areas. Data will be acquired, if available, and reviewed with the Steering Committee.	Work continued on this ongoing job.
ODFW	1	Compile age frequency data for an as-yet undetermined basin or hatchery in the Oregon portion of the Columbia Basin as a prototype for organizing age data.	Oregon's Database Analyst reviewed existing documents in an attempt to identify appropriate age data to use in the StreamNet test case.

WDFW	1	Research, compile, convert and submit age data for natural spawner data (salmon and steelhead) in one prototype subbasin (probably Lower Columbia R). This effort is to assess any problems with the existing 2001.1 format, standardization with any other agencies' data already submitted to StreamNet, and plan for further data submittals.	1. Woodard continued work on the Region 5 scales database, including age specific data for sport, escapement, and hatchery returns. 2. Smith worked on gathering age data from the Lewis River basin to add to the escapement database. Age composition by sex and species was calculated for the East Fort Lewis River from 1989-2000 to update the Lewis basin. Work on restructuring the age table in the escapement database to match the DEF in StreamNet was performed by Smith.
------	---	--	---

Objective 2 Data Development and Updates, Other Data sets

Task 5 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.

Project	Job	<u>Planned work elements</u>	<u>Accomplishments, Second Quarter 2002</u>
---------	-----	------------------------------	---

All	No work was performed on this task by any of the projects this quarter
-----	--

Objective 2 Data Development and Updates, Other Data sets

Task 6 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.

Project	Job	<u>Planned work elements</u>	<u>Accomplishments, Second Quarter 2002</u>
---------	-----	------------------------------	---

All	No work was performed on this task by any of the projects this quarter.
-----	---

Objective 2 Data Development and Updates, Other Data sets

Task 7 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.

Project	Job	<u>Planned work elements</u>	<u>Accomplishments, Second Quarter 2002</u>
---------	-----	------------------------------	---

MFWP	1	Obtain results from genetic analysis from the University of Montana Genetics Lab for sampled populations of Montana's species of special concern.	Work continued on this ongoing job.
------	---	---	-------------------------------------

MFWP	2	Update fish distribution table when new genetic samples affect fields/records.	Work continued on this ongoing job.
MFWP	3	Exchange data to the StreamNet regional database when a DEF is approved by the Steering Committee.	There is no DEF for genetics yet.

Objective 2 Data Development and Updates, Other Data sets

Task 8 Information generated during Subbasin Planning

Work with Subbasin Planners to acquire information that is developed for Subbasin Plans and make it available basin wide in a standardized format. Data that fits existing DEF will be incorporated in the queryable database. Otherwise, data will be posted 'as is' and made available on the StreamNet website. Actual data development beyond the existing DEF would require additional resources.

Project	Job	Planned work elements	Accomplishments, Second Quarter 2002
CRITFC	1	Work with Oregon Technical Support Team (when funded and formed by NWPPC) to obtain existing data in electronic format	We worked with Council staff and contractors to insure data management activities were incorporated into subbasin planning proposals being considered by the Council. No actual data assembly work was undertaken this quarter.
CRITFC	2	Work with Oregon Technical Support Team (when funded and formed by NWPPC) to develop applications to capture additional data generated during subbasin planning	The Council has not adopted a subbasin planning strategy yet. No work was performed this quarter.
MFWP	1	Will communicate with Montana's CBFWA representative to better understand where they are in the planning process. Currently we receive all survey data generated from BPA contracts in Montana. Will discuss other products that may become available.	We have spoken to our CBFWA representative and there are no needs at this time.

Objective 2 Data Development and Updates, Other Data sets

Task 9 Supplemental data sets

Obtain data sets that are important to regional monitoring and management but that do not fit the existing DEF for posting 'as is' on the StreamNet web site. Primary emphasis will be toward resident fish data developed by BPA funded fish and wildlife projects, data developed by cooperating agencies on other funding, and data developed by the FWP.

Project	Job	Planned work elements	Accomplishments, Second Quarter 2002
ODFW	1	Pursue supplemental datasets on an opportunistic basis consistent with StreamNet direction.	1. Staff continued to correspond with partners in the Oregon Fish Finder Project, which will add species location information to the StreamNet data system. 2. See Objective 1, Task 2, Job 1 for information on Oregon's resident fish data compilation efforts.

WDFW	1	Work with participants in the Blocked Area Resident Fish Stock Status Project to obtain copies of their fish sampling data. Assess the "fit" to existing StreamNet data exchange formats. Convert and submit data as appropriate.	<ol style="list-style-type: none"> 1. Burns analyzed WDFW resident fish (JSAP) datasets and compared them to analogous files from the Warmwater Lakes sampling program. As a pilot effort in assessment and conversion, she chose target warmwater sampling data files (both fish and habitat) and converted them to the WDFW JSAP formats. Burns drafted a simple report to cover the results of her assessment and to guide the next stage; assessment and conversion of JSAP data into StreamNet formats. 2. Burns obtained a points coverage of the 2000 and 2001 JSAP sampling sites for eventual georeferencing of the sampling data. 3. Burns began comparing JSAP sampling datasets to analogous StreamNet datasets, and initially found few match ups. Fish datasets are most like the draft StreamNet "Fish Survey" table, but Steering Committee disputes over the scope of and need for that table stalled the comparison efforts (tabled until fall, 2002).
------	---	---	---

Objective 2 Data Development and Updates, Other Data sets

Task 10 Carcass placement

Work with management agencies to capture information on placement of salmon carcasses and results from carcass placement projects. This is currently a low priority and will require additional resources to take on as a primary data type. Existing data may be acquired for posting 'as is'.

Project	Job	Planned work elements	Accomplishments, Second Quarter 2002
ODFW	1	Exchange carcass placement report 'as is' for 1999 placement efforts.	To date, no information has been submitted by ODFW Carcass Placement staff. We anticipate that data will begin to come in during the next quarter as internal report deadlines approach. Once data comes in, we will review and process it and submit it to StreamNet.

Objective 2 Data Development and Updates, Other Data sets

Task 11 Populations - status and delineation

Develop a data set to describe population status as determined by other agencies. This is currently a low priority, and efforts will be exploratory in nature during FY2002. Links to existing data may be posted on the StreamNet web site.

Project	Job	Planned work elements	Accomplishments, Second Quarter 2002
MFWP	1	Species of Special Concern are currently identified on the MRIS website; when the Montana Natural Heritage Program website includes status information on these species, we will create a link between our site and theirs. Will also look into linking to USFWS website if information is available on Threatened and Endangered Species. Will link to MFWP new native species web page when that becomes available.	We met with the NHP data staff and discussed the "Field Guides" which will incorporate our native species management areas and our bull trout and westslope cutthroat trout conservation areas into the "Wild Things" portion of the FWP website when it is ready.

Objective 2 Data Development and Updates, Other Data sets

Task 12 Develop other data sets

On an opportunistic basis, develop data that relate to other existing data sets in the StreamNet database or would be useful for regional planning, monitoring or management efforts. This is a low priority, but some efforts may be expended if the data appear useful and they can be obtained within current resources.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Accomplishments, Second Quarter 2002</u>
ODFW	1	Update, maintain, correct and exchange photographic information (MapCat and related tables).	<ol style="list-style-type: none">1. The Assistant Database Manager requested hatchery photos from ODFW District field staff in order to enhance our ODFW Image database.2. The GIS Analyst discussed MapCat cleanup and other technical issues with the regional GIS manager.
ODFW	2	Compile and exchange marked-to-unmarked ratio data (relative to dam, weir, spawning ground, etc. counts) for an undetermined location in the Oregon portion of the Columbia basin as a prototype for these data.	<ol style="list-style-type: none">1. Mark recapture data was provided from Columbia River Management staff to our Database Analyst during the quarter. The data is Bonneville Hatchery and Wild counts for years 1986-2001. It will be used as test data for a submission to StreamNet. We are currently trying to decipher the data and finalize a format for them for submission to StreamNet.2. Columbia River Management staff summarized and analyzed data collected during the 1st quarter. Final report is in progress and will be delivered to StreamNet upon completion.
ODFW	3	Compile and exchange hatchery-wild fraction data for an undetermined location in the Oregon portion of the Columbia basin as a prototype for these data. It is not clear if these data are still available since the dissolution of PATH, and the data developed by PATH, which are not in StreamNet, need to be captured so that they are not lost. We intend to attempt to locate and obtain the data in some fashion.	<ol style="list-style-type: none">1. Bonneville hatchery fraction data was provided from Columbia River Management staff to our Database Analyst during the quarter. We also took a cursory look at the hatchery-fraction data that was compiled during our support effort to the Willamette-Lower Columbia TRT. The Database Analyst created a test data structure for review by project staff. It is linked to two existing records in the Trend and EscData Tables. A new table had to be created for the hatchery fraction data because they did not fit any of StreamNet's existing data structures. The link to the EscData table is provided by a new FracID (similar to ASNID) field. This was the only change made to the existing tables. The Database Analyst copied the Hatchery Fraction table from the TRT database, modified it, then added the Bonneville data to it. She also created a look-up table for FracMethod (the method used for distinguishing between hatchery and wild fish, i.e. scale analysis, PIT Tag reading, Observation window). She looked into using the Sample Method or Calculation Method fields from the EscData table, and found that they probably would work for this effort, but there are currently no fields in these tables that are methods for distinguishing hatchery fish - these would have to be added.2. No other work was performed by Columbia River Management staff on this task because summer steelhead do not pass Bonneville Dam during this quarter. Work on this task will be initiated during the third quarter when summer steelhead begin passing Bonneville Dam.

Objective 3 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, and management needs

Objective 3 Data Management and Delivery

Task 1 Maintain and enhance 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 fish, resident fish and to a lesser extent wildlife 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.

Project	Job	Planned work elements	Accomplishments, Second Quarter 2002
IDFG	1	Maintain and enhance hardware and software for the IDFG/StreamNet Fish Information System. This tasks includes general system maintenance, addition of new servers and workstations, where possible, providing necessary system administration and disaster recovery, and maintaining software licenses.	<ol style="list-style-type: none">1. We provided routine system administration to the servers and workstations in IDFG/StreamNet. We also developed a comprehensive backup and recovery system for the servers. Future work will include backup and recovery for all the IDFG/StreamNet client workstations.2. As part of our infrastructure enhancement, we obtained two new servers. One server will be our SQL Server database server and the other will be our ArcIMS spatial data server. Our existing server will be reconfigured to serve as our domain server and backup/recovery server.
IDFG	2	Begin design and collection of barrier component in IDFG/StreamNet Fish Information System. At current funding levels this task will be of lower priority than fish data components and progress will depend on completion of objective 1 tasks.	We set up an Excel table and ArcView project for fish barrier data and populated it with data from paper maps, the Geographic Names Information System, and StreamNet sources. Many gaps in the data remain to be filled.
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.	The data dissemination policy was reviewed and we will provide to staff next quarter. We designed putting our GIS layers on the public and internal website and will complete that task next quarter. We provided GPS training to all FWP staff by making training programs in each regional and HQ office. It was very well received. We established standards and guidelines for GPS purchase and settings. By providing this training, we anticipate data that we receive will have better location information as to survey and distribution.

ODFW 1 Provide state-level StreamNet database management, administration, and development. Enhance StreamNet and ODFW database structures, interfaces, tools, and capabilities as needed. Maintain hardware and software.

1. Staff improved our ability to identify trends that need updating by creating a form version of our 'update query', which allows us to input the last year for we're looking for in the data (currently 2000), then query all trends that need to be updated based on that ending year. Then the application creates a table that provides the RefID, TrendID for the most recent EscData record, Species, Run, Last Year, Name of Stream, Contact name (who provides the data), and Phone Number.
2. Oregon's Database Manager replicated the Viable Salmon Population Project data store database for distribution to NMFS, in support of the Willamette-Lower Columbia TRT. We will keep the master on hand and let NMFS enter data into replicas.
3. Oregon received a priority request from Habitat Division staff to add a new report to the LandTax (Riparian Lands Tax Incentive Program) database. The Assistant Database Manager added the report and a few other customized features to the database and provided a new version to the Habitat Division.
4. We needed to resolve a number of errors in the FishScreen database that occurred during synchronizations performed by FishScreen staff. Unfortunately the errors were (for the most part) unfixable. We had to salvage the uncorrupted data by importing them into new replicas, and then removing the damaged replicas from the set.
5. Staff investigated the possibility of automating the process of soliciting biologists for trend information. Unfortunately, it's not feasible at this time, but we will look into it again when ODFW institutes a comprehensive statewide data system.
6. We've improved our Trend Interface functions to allow the Database Analyst to identify Trends that need to be updated. These functions now perform several steps that were previously completed manually by several queries to produce tables populated with all the data needed to identify trends and contact bios. We also created a form to set the table-building parameters and run the operation (see Objective 3, Task 1, Job 1 for more details).
7. Oregon's Database Analyst created a work request form, which we hope to institute agency-wide. This form should provide a formalized means for agency staff to request assistance from NRIMP (Oregon StreamNet) staff. The Database Analyst added the comments and suggestions made by NRIMP staff. She also created an evaluation form to be used by our staff to rate project improvement suggestions that may be included on the request forms. The "almost" final version will be presented and adopted at a future NRIMP meeting before it is implemented and efforts are made to post an electronic version on the NRIMP web site.
8. Several other data systems also received attention, including fixing a problem in the Age Data query system, enhancing the Life-stage Timing application, and several minor bugs in the TRT Database.

Region	2	Maintain and upgrade StreamNet database servers and software. Administer SQL Servers. Advise on office software acquisition. Maintain and optimize database structure and function .	The new web server was put into production this quarter. Configuration and testing of the StreamNet web site was conducted prior to going live. Once this server was running successfully, we were able to install and implement Internet mapping capabilities as described in 3.5.2. All files from the old server were archived onto CD. New tables were created for Provinces and Subbasins determined by the NWPPC in 2001. The Data Manager developed stored-procedures for locating field values in any/all StreamNet tables for quality control/removal of archaic coding, and tables no longer necessary in the working StreamNet database were removed.
WDFW	1	Coordinate activities to maintain all new and existing WDFW internal tabular databases, code and cross-code assignment files related to StreamNet tabular and spatial submissions for data sets defined in Objectives 1 and 2. Submit any tabular databases as warranted to coordinate with spatial layer exchanges. Maintain the hardware and software necessary to the database system.	Sikora re-organized WDFW's StreamNet server files to retire obsolete products and tools. Sikora also engaged in the StreamNet Forum thread to resolve whether the Distribution DEF could and should be included in a general technical staff meeting. Most tabular work has a huge GIS component because all data categories rely on location codes and it's reported under Objective 3 Task 2.

Objective 3 Data Management and Delivery

Task 2 Maintain and enhance the GIS and hydrography database systems at the projects and region
Maintain functional Geographic Information System programs at the agency and regional levels to make consistent GIS layers for anadromous fish, resident fish and to a lesser extent wildlife 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.

Project	Job	<u>Planned work elements</u>	<u>Accomplishments, Second Quarter 2002</u>
IDFG	1	Maintain and enhance hardware and software for the IDFG/StreamNet GIS and Fish Information System. This task includes general system maintenance, addition of new servers and workstations where possible, providing necessary system administration and disaster recovery, and maintaining software licenses. We will also be evaluating the impact and cost of moving from ArcInfo 7.2.1 and ArcView 3.2 to ArcGIS 8.1. Depending on that outcome, we may make this major software migration this year, including necessary hardware reconfigurations.	<ol style="list-style-type: none"> 1. As part of our infrastructure enhancement, we obtained two new servers. One server will be our SQL Server database server and the other will be our ArcIMS spatial data server. Our existing server will be reconfigured to serve as our domain server and backup/recovery server. 2. We developed a new ArcInfo license deployment plan for use on our enhanced infrastructure. The license policy involves purchase of one new license with non-StreamNet funds and moving existing licenses onto our domain server for ArcGIS 8.2. 3. We installed ArcGIS 8.1.2 on a single workstation to begin experimenting and learning it.

IDFG 2 Provide GIS support and data infrastructure to the IDFG/StreamNet Fish Information System. The IDFG/StreamNet Fish Information System is built upon a foundation of GIS data and we will continue to provide that base. Products from this task will play a key role in integrating GIS with traditional tabular data models, specifically SQL Server and Microsoft Access.

1. We continued to support and enhance our ArcView tools including the Geographic Information Locator, The Idaho Projector tool, and the Fish Tools, which consists of a variety of tools to help biologists attach data to the StreamNet hydrography and LLIDs.
2. Our non-StreamNet GIS staff installed a statewide set of GIS data including coverages, scanned topos, and digital elevation models in several IDFG offices, including the Salmon Region, the Panhandle Region and the Fish Research offices. We also installed a set of ArcView tools, including a geographic information locator, an Idaho projector tool, and a set of fish tools for attaching data to StreamNet hydrography and assigning LLIDs and measures to fish data.
3. Our non-StreamNet GIS Analyst enhanced our Idaho Projector tools to include datum transformations.
4. We began preparations for our enhanced infrastructure, mostly by studying Transact SQL, SQL Server Administration and ESRI Geodatabase models in preparation for the ESRI class 'ArcSDE For SQL Server'.

MFWP 1 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). Maintain the MFWP StreamNet GIS system.

We have completed sage grouse, fishing regulations, and upland game bird projects; the rest will be completed next quarter. We have been involved in creating an IT Plan for the agency which incorporates StreamNet, GIS and the Web into the plan.

MFWP 2 Work with Natural Resource Information System staff and StreamNet GIS staff to maintain the 1:100 K NHD hydrography for Montana. Data layer will be enhanced with lakes and reservoirs and include stream level LLID routes.

Maintenance of the layer is ongoing.

ODFW 1 Develop and maintain a fully functioning GIS system and the database structures that help improve spatial data management and transfer with ODFW staff and the regional StreamNet system.. Maintain the hardware and software systems necessary for the GIS.

1. Our GIS Analyst provide NRIMP staff with an updated on general features of the ESRI GeoDatabase model for storing spatial data within a database format and some of its potential implications for future management of GIS data.
2. Oregon continued the Q/A process with stream route and arc data. We've identified and corrected some inconsistent state coding within the arc attribute tables. We're now nearing completion (and concurrence with PSMFC) on a new table that contains LLID's that fall either partially or entirely within Oregon. In the past (Allstr table) we typically combined all routes within HUC's that fell partially within Oregon.
3. Our GIS Analyst implemented a couple of changes to the stream route data in an attempt to make it more consistent and also to keep it synchronized with PSMFC.

		<ol style="list-style-type: none"> 4. Oregon modified it's Distribution and DataCapture databases to improve enforcement of referential integrity, to clean up inconsistent coding, to add additional codes to several tables and to improve functionality for data entry. 5. Our GIS Analyst cleaned up numerous disparate stream and LLID related Access databases that have accumulated over some time.
Region	1	<p>Assist the database manager, as needed, with the spatial component of data and its implementation online.</p> <ol style="list-style-type: none"> 1. A supercode with incongruities between the supercode name and the streams linked to it was found by PSMFC staff. The data connected to this supercode were found and the information was sent to WDFW for investigation and correction. 2. The GIS Specialist assisted the database manager with several tasks to ensure the spatial component of data and its implementation online. For example, he reviewed submission of dam and hatchery facilities for Montana, checking all locations and deriving the necessary spatial linkages to allow this facility information to be incorporated into the StreamNet database and online query system.
Region	2	<p>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.</p> <p>The GIS Specialist developed a new Regions layer to delineate data by larger hydrographic areas outside of the Columbia basin. He created cross tables for these regions and 2001 provinces and added the functionality to the query system to select by these criteria.</p>
Region	3	<p>Maintain functioning GIS software at 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.</p> <p>The GIS specialist updated ArcInfo software to version 8.1.2</p>
Region	4	<p>Maintain a library of StreamNet GIS layers for internal use and as downloadable data on the web site with complete documentation (metadata).</p> <p>Internal and public GIS layers were maintained.</p>
Region	5	<p>Maintain a regionally consistent 1:100,000 hydrography layer (the PNW Reach File) for internal use and public access through consultation with the state stewards of the hydrography.</p> <ol style="list-style-type: none"> 1. The GIS specialist made fixes to the Oregon hydrography in coordination with the StreamNet ODFW hydro steward. We incorporated information for HUC 16040205 (along Oregon/California border) into the database. 2. The GIS specialist assisted with the development of a regionally consistent 1:100,000 scale routed hydrography for California. He supervised this work being done under separate funding. He calculated estimates for time to complete the project and developed a procedure involving a number of different automated routines to build and QA routes on this hydrography once the technician-level work to identify unique stream networks is completed.

Region 6 Rebuild LLID-based stream route system on the National Hydrography Dataset hydrography for Western Montana (this work is complete for ID, OR, WA).

Testing of the NHD/LLID conversion application continued. A final test was completed and only minor problems were found and corrected.

WDFW 1 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). Submit any spatial layer as warranted to coordinate with tabular exchanges. Maintain the hardware and software necessary for system function.

1. Lensegrav loaded ArcExplorer and relevant shapefiles onto Sikora's PC as a first step to see if the less expensive ArcExplorer will serve for key managing / compiling staff in lieu of the expensive ArcView. Lensegrav continues to pioneer WDFW's testing of the utility of ArcView products.
2. Lensegrav started working with ArcView projects to establish spatial points for the survey sites of the Yakima Ecological Interactions Team (EIT). This effort serves the EIT needs, and, more importantly it's our first test to determine the viability of using ArcView projects for future spatial work. Lensegrav normalized the EIT's existing tables, re-projected their spatial layers, augmented the layers and tabular files as warranted, then determined BegFts for the points to align it with StreamNet's data format for future exchanges. He then sent copies of the data to the biologists, and will assist them in applying the new dataset to their ecosystem analysis. Future StreamNet integration is dependent on settling on the right data format "target", which may or may not be the "Fish Survey" table. O'Connor wrote a short report on the work for the contractor (EPA).
3. WDFW's hydrolayer includes streams located in other states when that stream is in a HUC boundary that also includes Washington state. Documentation of WDFW's hydrolayer indicated WRIA field entries as 99 would flag arcs / streams that fell outside Washington state. Previously Sikora created a subset file (LLID100) from a tabular data dump of WDFW's hydrolayer, showing the total length of each unique stream and using it to code the EndFt measure for WDFW data that represented the entire stream. Re-thinking that logic, Sikora added an extra field to show the maximum length in Washington, to use it to better define WDFW data, as warranted.
4. To assist Sikora in the effort described above, Lensegrav used an ArcView project to investigate the location and orientation of select arcs because our basic WDFW interface does not show the arcs that make up the streams. Contrary to documentation, this investigation revealed that arcs outside Washington State are coded, both as WRIA 99 and 0. Since we automate tabular coding and make decisions based on the expected nature and inclusiveness of the hydrolayer, we must further proof the WRIA entries and verify if the WDFW hydrolayer includes all arcs/streams outside Washington State for every HUC it represents.
5. In response to a SN Regional request about SuperCodeIDs tied to hatchery release data, Sikora and Lensegrav researched the accuracy of marine port locations and subsequently finalized and cleaned up the text descriptions for WDFW's marine area WaterBodyIDs. Sikora also reported that the codes tied to the hatchery release data were conceptually wrong since port locations should only be used for harvest data and possibly not even for harvest since we favor the marine WaterBodyIDs.

Objective 3 Data Management and Delivery

Task 3 Data management and coordination

This task includes data management 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 regions and contributing agencies will collaborate to fix problems and assure seamless loading of data into the database.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Accomplishments, Second Quarter 2002</u>
IDFG	1	Review and update entire hatchery return dataset, in order to ensure the proper past assignment of trend definitions, location identifiers, accurate counts, and disposition codes.	We completed our review of hatchery return data started in the previous quarter.
IDFG	2	Review and update entire redd count dataset, in order to ensure the proper past assignment of trend definitions, location identifiers, and accurate counts.	<ol style="list-style-type: none">1. Our previous review of existing redd count data found that redd count surveys had often changed dramatically over time in regard to location, size and methodology, yet were not assigned new trends. We determined that a review of trend assignment, including breaking up existing trends into multiple new trends, was necessary. During the second quarter we worked to develop a system, methodology and tools for analyzing redd count surveys and their assignment to StreamNet trends.2. We also continued work on the administrative routines in the FIS to migrate our data into StreamNet data exchange formats for data submittals.
ODFW	1	Work with regional staff as necessary to assure seamless loading of data into the regional database.	<ol style="list-style-type: none">1. Bill and Shannon met with Bill Kinney at the Gladstone office to go over the process of data submissions to StreamNet, as well as the DEF, building the composite database, and the possibility of working towards an automated, on-line submission system. They discovered that minor problems with the data that had been submitted previously were being fixed without our knowledge, and the problems were not being relayed back to us, so the same problems existed with each submission.2. Oregon's GIS Analyst visited PSMFC to meet with David Graves mainly to keep in contact on GIS and other technical issues.3. Staff contacted Bill Kinney to ask we can start sending our StreamNet data submissions in Access 2000 (instead of Access 97). Bill said yes; Access 2000 format is fine.

Region	1	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.	The GIS Specialist received, formatted, and posted Washington bull trout distribution as a downloadable GIS layer with accompanying documentation. He updated the White Sturgeon distribution layer and posted it with updated documentation for download. New hatchery facility information was received from state compilers. The GIS Specialist evaluated the locational information and then converted this information to a spatial format and created new GIS coverages and shape files for Pacific Northwest hatchery facilities, posting these files to the GIS Data page for public download.
Region	3	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.	<ol style="list-style-type: none"> 1. Hatchery Returns data was loaded from WDFW and USFWS. 2. Hatchery facility information updates were made for facilities in Washington. 3. Dam facility information was loaded from ODFW and MFWP. 4. Escapement data (Adult Returns, Dam/Weir Counts & Freshwater Harvest) was loaded from ODFW. 5. Habitat Restoration was loaded from MFWP.
Region	4	Examine the StreamNet database for errors and report any found to the appropriate entity for correction.	Work continued on this ongoing job.
Region	5	In order to modernize existing data sets, begin converting the georeferencing for the Protected Areas and Smolt Density Model data from river reach numbers to LLIDs.	We transferred Protected Area and Smolt Density Model data locations from river reach numbers (1:250,000 scale) to LLID locations (1:100,000 scale) where possible (86% of all records). We developed QA procedure to assess the results of this work and ran a random QA, finding that the work was 97.4% (plus or minus 1%) accurate. This QA work helped identify a series of fixable errors, and these were corrected during quarter 3 in order to bring the confidence level in the conversion closer to 100%.
WDFW	1	Work with regional staff as necessary to assure seamless loading of data into the regional database. Explore new ways to simplify the instructions to the Regional Manager on how to post our data submission and purge any old records that are now irrelevant to avoid follow-up issues.	<ol style="list-style-type: none"> 1. Sikora drafted a revised exchange submission form and, working together, Kinney finalized the new form. 2. No known follow-up was required after the hatchery returns submission.

Objective 3 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. Track adopted and proposed data exchange formats and location coding (including metadata) for data categories described under Objectives 1 and 2. At the regional level, this task will provide coordination and technical assistance regarding interpretation of database structures and codes. At the agency level, this task will provide similar coordination and technical assistance to activities applicable to StreamNet.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Accomplishments, Second Quarter 2002</u>
CRITFC	1	Review and comment on DEF issues brought to the Steering Committee	We reviewed and participated in DEF discussions.
FWS	1	Review and comment on DEF issues brought to the Steering Committee	I met with Bob Woodard of WDFW/StreamNet to review a proposed new Hatchery Returns DEF.
IDFG	1	Working with the StreamNet Steering Committee, maintain and enhance the data exchange standards as needed.	We worked with the StreamNet Steering Committee and subcommittees to work on data exchange formats for distribution and hatchery return data.
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.	This task is ongoing. We have reviewed the next version of the DEF and completed the distribution DEF.
MFWP	2	Work with CRITFC to develop a draft DEF for genetics data for adoption by the Steering committee	We discussed the genetics DEF at the Steering Committee Meeting and sent Hillary MFWP genetic structure.
MFWP	3	Work with Regional StreamNet staff and Steering Committee to create a Data Exchange Format for Distribution and Use Type.	Through a conference call and a technical meeting, we established a DEF for distribution and use type.
ODFW	1	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. There is no set schedule for this task, because it is highly dependent on issues facing the Steering Committee.	<ol style="list-style-type: none">1. Staff spent considerable time discussing, reviewing, revising, and commenting on DEF issues in relation to fish distribution and observation data. These activities occurred on at least 5 iterations of this DEF.2. NRIMP staff conferenced with Mary Hanson (ODFW) to propose draft definitions for non-anadromous distribution use-type coding. We were able to devise a draft coding scheme using categories for both Life History and Life Stage.3. Staff composed and posted a response for the FishSurvey.DataQualityID to the on-line forum thread.4. Staff finalized and initiated a SN forum to discuss the need for DEF changes related to hatchery fraction data.

ODFW	2	Develop and propose a DEF for screening data.	Oregon's Assistant Database Manager continued to provide technical support to the ODFW Fish Screening Program, including responding to many questions and resolving synchronization conflicts between replicate databases. The knowledge we're gaining from these experiences is aiding in the development of a StreamNet DEF for Screening data.
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.	Wording in the draft data exchange format was improved for discussing use of PointIDs. PointIDs are used when data are either upland points unassociated with streams or are associated with streams too small to be in the 1:100K coverage.
Region	2	Create a Data Exchange Protocol document that explains the process of developing and exchanging data to the StreamNet database.	A revised Data Exchange Form was created to accompany data submissions with details and instructions for data loading.
Region	3	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.	A StreamNet Library dump from CRITFC was reviewed and a format revision was recommended.
Region	4	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.	<ol style="list-style-type: none"> 1. Codes were added for to the Data Exchange Format for Runs. 2. In coordination with projects similar to StreamNet underway in California, codes were added to StreamNet data for California counties and hatcheries.
WDFW	1	Engage in data exchange format (DEF) discussions. Lead new efforts to amend the format as warranted when WDFW's data cannot be accurately converted. Provide metadata for tabular and spatial data sets according to guidelines adopted by the Steering Committee.	<ol style="list-style-type: none"> 1. O'Connor and Burns drafted Bull Trout metadata and delivered it to PSMFC, EPA, and USFWS. Several immediate suggestions were incorporated at the request of the contractor for this work (EPA). After the delivery, Sikora reviewed the metadata product and made suggestions which will be considered when the metadata is actually exchanged with StreamNet when the Distribution data is submitted in the new DEF format. The new metadata generation/support tools of ArcGIS will be much simpler to work with than MetaMaker. 2. O'Connor and Sikora stayed tuned to the Distribution DEF discussion but heard very little since StreamNet Regional staff were managing the responses and discussion one agency at a time.

WDFW 2 Develop a revised DEF for Hatchery Return data and propose to Steering Committee

O'Connor delivered a draft Hatchery Returns data exchange format (DEF) proposal at the February 2002 SC meeting, including a summary of decisions reached and issues outstanding to date. StreamNet staff were identified to serve on a technical team. As the chair of the hatchery return technical team, Woodard conferred with Pastor (USFWS) and drafted another DEF. Woodard delivered this new DEF to all the technical team members, fielded responses and reviewed their internal data to understand the conflicts. Sikora is not a member of the technical team but she's kept current with the proposals and submitted comments at each step.

Objective 3 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. The StreamNet home page will continue to be recognized as the project's primary data delivery vehicle. Priority will be given to incorporating data developed through Objectives 1 and 2 and providing access to reference materials secured through Objective 4. Appropriate training on the use of the system will be provided through a combination of on-line help and in-person training sessions.

Project Job Planned work elements

Accomplishments, Second Quarter 2002

ODFW 1 Recommend and/or take part in review of new products and features. Provide feedback on content, suitability, navigability and data currency issues.

Oregon staff spent time testing and cruising the new StreamNet ArcIMS test site. The GIS Analyst met with David Graves on other issues but also took the opportunity to preview the new ArcIMS implementation and talked about related issues including Geodatabase and SDE. Much feedback was provided to David Graves. Oregon's GIS Analyst solicited participation (and multiple staff participated in) a test to attempt to overload the StreamNet server via the ArcIMS application. The server held up rather well and rendered upwards of 50 images / minute at its peak.

ODFW 2 Work with Regional StreamNet staff to link the StreamNet website to available Columbia River fisheries information (including Columbia River Compact Action Notices, In-Season Updates, Joint Columbia River Management Staff Reports and possibly in-season catch estimates), along with informational text to describe each link.

Columbia River Management staff attempted to work with PSMFC to link the Columbia River Management web site to StreamNet.

ODFW 4 Manage and maintain the ODFW Natural Resources Information Management Program website and it's links to StreamNet..

1. Oregon's Webmaster posted one update of Winchester Dam fish counts, and a Genetics Program publication. She also updated the Jobs page of our web site to reflect the extended closing date of the POS/Web Programmer Analyst position.
2. Susan enhanced the site by adding a link to the WDFW Habitat Protocols document, and added some AP news links to the News page of the prototype site, which will contain fish and wildlife related news from around the country (with a priority on ODFW and Oregon news), and will be updated automatically several times a day. She wrote a routine to call a Perl script on the OSU web server that will allow staff to receive user's comments from a feedback form on our web site via formatted email. She also added a customized search engine feature to our Search page.
3. Susan performed standard site maintenance including updating the various StreamNet and 1:24K Fish Habitat Distribution data links,
4. Oregon continued to progress towards uniting the NRIMP and GIS@ODFW web sites. The Webmaster kept the prototype site up-to-date as we wait for approval to bring the combined site on line. She made minor changes to the GIS@ODFW website including a disclaimer on the Maps page regarding access to most current fish distribution data. She also added two new download links to the Data page as per a request we received from the fish distribution user survey; these will allow users to download the whole 'bundle' of distribution (all species) and metadata at either the 100K and 24K scales, instead of downloading by individual species.
5. Oregon's Webmaster contacted the Webmaster for the BLM site, to find out when the 24K hydrography status image would be back online.
6. Columbia River Management began adding real time catch data to their web site this quarter.

Region 1 Maintain the GIS Data, Map, and PNW Reach File Internet pages.

The GIS Specialist continued to maintain the GIS Data, Map and PNW Reach File Internet pages.

Region 2 Add an internet mapping component to the StreamNet site to allow users to access StreamNet data through an interactive map interface. Internet mapping component will utilize spatial database engine (SDE) technology to improve speed and performance, and will utilize ArcIMS software for application design and delivery. Internet mapping component will serve at least 2 purposes: (1) to provide users with a vehicle to display and query StreamNet data in a spatial format; and, (2) to provide an alternate means of entry to access information in the current StreamNet query system.

The GIS Specialist designed, tested, and implemented two Internet mapping applications using the new ArcIMS software. These applications provide users with a means to overlay and compare different types of information related to fisheries and natural resources in a visual, map format for any location in the Columbia Basin or surrounding Pacific Northwest area.. These applications can also be used to query for data from the StreamNet database, create custom maps, and perform basic geospatial analysis, all done over the Internet without the need to purchase client software. These applications were deployed to the StreamNet web site in March and are being enhanced on an ongoing basis.

Region	3 Maintain and enhance the look and usability of the current web-based query system.	<ol style="list-style-type: none"> 1. We completed many requested interface and functionality enhancements/fixes. 2. The StreamNet programmer created a web-based "forum" to facilitate communications between StreamNet participants. The forum is a web-based usenet-type bulletin board that can be used for posting and responding to messages. It is hoped that this will allow us to reduce the number of emails received, provide for permanent storage of electronic discussions, and also permit tree-type (branching) discussions that will be useful for coming to agreement on topics in a more efficient manner. 3. The change in the query system proposed and authorized last quarter for the geographic criteria was implemented this quarter. 4. Most of the html help files available within the query system were either old (for existing query selection criteria) or were not yet created (for newer criteria). All non-existing files were created. All previously-existing files were examined and updated as needed. 5. The programmer defined, configured, and tested the new web server software setup and successfully migrated website and query system to the new server. Configuration and testing was extensive because of the many different applications we do and our intent to support ColdFusion, ArcIMS, XML, COM. 6. The query system was modified to enable output of XML as well as HTML. This enables connection between the Internet Mapper applications and the query system data. Output of data as XML will also allow more flexibility in the future for customizing output to user needs.
Region	4 Develop and test a new and enhanced web-based query system based on a more open and flexible programming environment (Cold Fusion).	We replaced the custom query system web server with a ColdFusion web server to improve stability and query performance. Both stability and performance have been improved. Cold Fusion has also allowed us more flexibility and faster implementation of query system changes.
Region	5 Deploy features of the new flexible query system as components are approved by the Steering Committee	The barriers data category was implemented.
Region	6 Maintain logs of web query history and error events. Track and report internet site usage by month and investigate web query system errors encountered. Assist programmer in debugging web query system problems that may be data related. Maintain and upgrade StreamNet web server and software.	<ol style="list-style-type: none"> 1. We built and deployed various internal tools for monitoring and managing the web site, query system, and new applications (Internet Mapper). 2. Usage and error logs were maintained. Logs show increasing numbers of hit and queries and decreasing (significantly) number of errors encountered by users. We attribute the decrease in query system errors to the new, more stable web server / Cold Fusion platform implemented this quarter (see Task 3.4).

Region	7	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 bugs.	Regional personnel continued improvements and problem correction work on the StreamNet query system. Extensive tests were conducted on the system as changes were made to ensure correct functioning.
Region	8	Complete review of the existing StreamNet HTML pages. Decide which pages to archive and delete, which to include in the StreamNet web site, and which to modify for inclusion in the StreamNet web site.	Several additions were made to the StreamNet links pages. An extensive check of the StreamNet web site's pages was conducted. All links were checked, and broken links were corrected or noted for correction. Improvements to wording were made on many pages to improve readability and understanding. Obsolete pages were identified, archived and deleted.
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.	Lensegrav tested and provided feedback on StreamNet's ArcIMS application.

Objective 3 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. Even when developed for within agency use, tools should be shared among all project participants.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Accomplishments, Second Quarter 2002</u>
IDFG	1	Continue to develop the IDFG/StreamNet Fish Information System (FIS). The FIS provides data entry and management tools to IDFG biologists. It also provides for an electronic flow of data from the field to StreamNet. It ensures data integrity, data and coding standards, and an efficient transfer of data from the field to StreamNet.	<p>We continued development of the FIS in close coordination with IDFG fisheries biologists and StreamNet data exchange standards. Specific tasks included:</p> <ol style="list-style-type: none"> 1. One result of our bull trout project for the USFWS was we were able to modify the IDFG Salmon Region's fish survey database to use StreamNet hydrography and LLIDs. This will ease the migration of their data into StreamNet in the future. 2. We also helped our Fish Research staff to update their native salmonid assessment database to use StreamNet hydrography and LLIDs. We added needed referential integrity and primary key relationships to their database. 3. StreamNet and other staff installed a stream survey Access database and data entry forms in our IDFG Panhandle Region office for their use. This will ease the migration of data into StreamNet in the future. 4. We provided additional data set development and interface design for specific components of the FIS. 5. We administered the FIS component for compilation of historic IDFG fish data via a joint IDFG/BLM Cost Share project. 6. We conducted an evaluation and implemented SQL Server 2000 with the FIS on laptops used for remote data collection.

		<p>7. We provided administrative and technical support for the Collection Permit component of the FIS. This component is being actively used by IDFG fish biologists to compile historic collecting permit reports.</p> <p>8. We prepared data structures and an interface to interact with the PitTag2 program to assist field personnel with error checking, provide summary analysis, and to collect data pertaining to non-target species during juvenile salmon and steelhead trapping and tagging operations.</p> <p>9. We implement a data transfer method using Internet email and XML to send field data to our central database. This included administrative routines to automatically process transferred data and update the central database.</p> <p>10. We worked on development of a data presentation and analysis interface to provide access to the central database, allowing office personnel to view and analyze current trapping data.</p> <p>11. We initiated development of a data collection program to be used for spawning ground survey data. Redd count, live fish and carcass data are to be included.</p> <p>12. Planning began for the migration and entry of historical Idaho Supplementation Studies data into the FIS. This will include all ISS cooperators, including federal agencies and tribes. It will enhance the data available to StreamNet.</p>
MFWP	1	<p>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.</p> <p>Work continued on this ongoing job.</p>
MFWP	2	<p>Explore creating a complete user interface for MFWP biologists, preferably a web based system; standardize look-up tables across the state.</p> <p>Work continued on this ongoing job.</p>
MFWP	3	<p>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.</p> <p>This task is ongoing. We are discussing a screening database for the new program funded by Fisheries Restoration and Mitigation Program funded by the BOR and USFWS. We will start with the system created by Oregon.</p>
Region	1	<p>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.</p> <p>We created internal tools to improve monitoring of use and errors in the StreamNet web site and web query system. Tools were created to compose and send a StreamNet newsletter. We researched and started documenting how to implement a better XML-based data submission procedure. Data compiling agencies did not request or require any new tools to help data collection or submission.</p>
WDFW	1	<p>Review and give feedback on StreamNet's tools. Also build internal tabular and GIS tools and procedures to efficiently manipulate data, including the conversion of WDFW's Paradox data to MS Access.</p> <p>O'Connor, Brown and Sikora met with Bruce Baker (WDFW) to discuss Baker's continued needs for programming and managing the Fish Contest database. Sikora also met with Baker after the meeting to advise him on how to scope the table relationship and data issues.</p>

Objective 3 Data Management and Delivery

Task 7 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.

Project	Job	Planned work elements	Accomplishments, Second Quarter 2002
IDFG	1	Respond to requests for data and queries of the IDFG/StreamNet Fish Information System. These requests come from a variety of sources, federal agencies, state agencies, and private consultants. All data requests will be logged for reporting.	We filled 34 data requests that came directly to our office. The requests consisted of 12 species lists, 13 sets of shapefiles of streams, wetlands, fish distribution or base GIS layers, 6 requests for queries of our redd count database, and 3 technical assistance.
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.	We filled 12 fisheries related GIS requests during the quarter.
ODFW	1	As requested, consistent with other deliverables in this contract, receive and respond to requests for data, source materials, technical training, and custom products.	<p>A total of 14 data, 8 document, 7 map, and 6 'other' requests were answered during this quarter. A detailed list by requester and request type can be made available upon request. Library-specific document requests are summarized under Objective 4, Task, 3, Component 2. Also, 4,667 data downloads were made from the ODFW FTP site during this quarter. The list of requests below is provided as an example of the range of requests we respond to. These requests include:</p> <ol style="list-style-type: none">1. A request for 100K Sandy basin distribution maps (ChF, ChS, Coho, StW).2. An additional request for Sandy R. distribution maps (4 more) with specific geomorphic reaches delineated in addition to the distribution. The maps are being used as part of the evaluation related to the potential removal of Marmot Dam.3. A request for Bear Creek maps for the purposes of a contested case water right hearing.4. A USGS request for distribution information for the Rogue basin.5. A small data request for some ArcView shapefiles that were used to demonstrate the Oregon Fish Finder prototype website.6. Providing technical support to the mixed stock fisheries program who needed help with approaches to migrating and storing their data in Access databases.7. An analytical assessment of potential habitat upstream of hatchery related barriers in the Lower Columbia for Coho Recovery planning purposes.8. Nice Creek fish presence information.

9. Inquiries into Oregon's FishScreening Database from NMFS.
10. Providing Lower Columbia and Lower Willamette Fish Presence Survey cutthroat observations to the USFWS
11. A request to convert the Chetco gradient map to a PowerPoint compatible version.
12. A request for Bear Cr. Redband Trout distribution maps
13. Assisting the Clackamas River Basin Council with a request for barrier information and provided ArcEdit technical support to the Bull Trout Coordinator.
14. A request for Incidental Fish Observations for cutthroat on four specific streams in the mid-Columbia region to the USGS.
15. Requests for Metro area Winter Steelhead distribution maps (including one of the entire Willamette Valley) and also another request for fish distribution data in the King City area.
16. A bull trout projection request from Deschutes NF staff.

Region 1 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.

Regional staff responded to 55 requests for information or help during the quarter. These requests broke down by type as follows: GIS (17), Assistance finding data (9), Maps (5), Query help (4), Fish biology (4), Other (15). These requests broke down by type of person making request as follows: Federal agency (12), General Public (10), Unknown (7), State agency (4), Undergraduate student (3), Tribal (3), Nonprofit organization (3), Elementary/High School faculty (3), Other (7)

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.

All staff responded to data requests and documented them in a detail database available on request. Our clients continue to be interested in all data types. Yet, the need for ArcView instructions and products steadily continued since we first noted the new interest last quarter.

Objective 4 Library / 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

Objective 4 Library / 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 Job Planned work elements

Accomplishments, Second Quarter 2002

CRITFC 1 Coordinate source material submissions for data compiled by participants.

The Library received materials from California.

CRITFC 2 Develop 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.

The StreamNet Library added approximately 200 new items to the library collection.

CRITFC 3 Maintain and develop a collection of journals related to fisheries and aquatic sciences as well as other related scientific topics.

We began reviewing subscriptions for FY 2003. We left off for hiring of a new Assistant Librarian. The library received over 453 items to fill in gaps in collection through duplicate exchange.

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.

We continued working with Bill to clean up records for easier integration into the library reference table.

MFWP 1 Update the StreamNet library with references and publications from the Fisheries Division Library on an annual basis.

An update has not been requested.

MFWP 2 Collect and catalog supporting references to document the sources of the distribution information and other data types developed under Objectives 1 and 2, and to connect the data to references. Submit updated references to the StreamNet Library

This task is ongoing. The FWP library information was updated in the MFISH system.

ODFW	1	Update library bibliography of ODFW, Fish Commission, and Game Commission reports with historic and current publications.	The ODFW Librarian continued to maintain the library bibliography.
ODFW	2	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.	A StreamNet library submission was sent on 2/15/02. It contained approximately 27 documents total, 7 of which were memos on electronic database updates.
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 Objectives 1 and 2. Documents will be assigned reference numbers and forwarded to the StreamNet library as per established SN guidelines.	<p>1. Kinney reported several references were missing from the StreamNet library. Sikora itemized those pertinent to hatchery returns data. Then Woodard re-submitted them to the StreamNet library to coordinate with the March 2002 submission of hatchery returns data. Sikora also sent a replacement reference document for the WDFW Hatchery Returns Form 5 database.</p> <p>2. Due to budget cuts the Washington State Library was disassembled. Sikora adopted many references at the library's give-away event.</p>

Objective 4 Library / Reference Services

Task 2 Provide Access to Collection

Provide user access to the materials described in Task 4.1 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>Accomplishments, Second Quarter 2002</u>
CRITFC	1	Provide and maintain an appropriate facility for the storage and public use of the StreamNet Library collections.	Work continued on digitizing library materials with the high-speed scanner.
CRITFC	2	Catalog and organize the materials for ease of use by clients and staff.	We continued from the first quarter on integration of all materials into one subject oriented collection.
CRITFC	3	Provide access to the catalog of materials via the Internet and update the online catalog on at least a monthly basis.	We continued to analyze webpage usability. The catalog was updated monthly.
CRITFC	4	Develop and execute a plan to place electronic documents in the catalog and on the library website.	We began digitizing documents for inclusion on the website through the library catalog.
CRITFC	5	Develop and keep schedule of open times and reference desk staff hours.	The reference desk schedule was limited as the hiring process for the Assistant Librarian unfolds. The schedule of open times was kept up to date on the library website to allow for staff shortage.

Objective 4 Library / 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>Accomplishments, Second Quarter 2002</u>
CRITFC	1	Provide information and reference services to library clients	We answered over 20 requests for information from clients.
CRITFC	2	Provide information about services and hours to library clients via print and Internet	We kept web pages updated with information about hours and holidays. We worked on updating materials for distribution.
CRITFC	3	Provide interlibrary borrowing services for library patrons to access materials not yet owned by the StreamNet Library.	We answered over 280 requests for materials from clients for materials not owned by the StreamNet Library.
CRITFC	4	Provide access to hardcopy and electronic files of draft and final documents related to subbasin planning and the NPPC amendment process.	We began evaluating bibliographies from individual subbasin plans to determine documents that need to be added to the subbasin pages.
ODFW	1	Enhance, maintain, and update ODFW Library software and procedures to ensure adequate tracking of information requests, key word searches, and easy comparison to the StreamNet Library holdings.	The Database Manager familiarized himself with InMagic software in preparation for customizing Gloria's library application. He installed the software on the new Library computer and moved the catalog files to a network drive to allow distributed access to increase concurrency of the database. He also modified the structure of the database to incorporate needed fields that were previously missing.
ODFW	2	Respond to requests for ODFW documents and other source materials through the ODFW Library.	Oregon's Librarian provided 360 hardcopy documents and 6 electronic documents to 30 individual users (12 additional users were referred to other sources) during the quarter .

Objective 4 Library / 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>Accomplishments, Second Quarter 2002</u>
CRITFC	1	Provide interlibrary lending services for other libraries to access the library's unique collection	We provided over 40 items to other libraries.

CRITFC	4	Coordinate with other StreamNet libraries, library clients and other libraries to improve service to clients and limit duplication of effort.	We continued to work with Gloria Bourne on collection development efforts.
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	The Council's subbasin planning process has not yet begun, so no work was accomplished on this specific task.
ODFW	1	Provide an index of Oregon Fish Commission, Oregon Game Commission, and Oregon Wildlife Commission processed reports to the StreamNet Library for the purpose of identifying documents that are not currently within library holdings.	No documents were provided to the StreamNet Library during this quarter due efforts to move Oregon Library holding to a new location.
ODFW	2	Coordinate with the Oregon State Library system to enhance access to published periodicals, journals, and other documents for StreamNet users.	<ol style="list-style-type: none"> 1. The Oregon Librarian organized an index of web sites to refer clients to for information that may be available online. 2. The Oregon Librarian signed two people up for SmartOrGov (Oregon's State Library online system).

Objective 5 Services to Fish and Wildlife Program Activities

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

Objective 5 Services to Fish and Wildlife Program Activities

Task 1 Data and services to support the Subbasin Planning effort

Within existing data categories and staffing levels and as workloads permit, assist Subbasin Planning efforts by 1) providing data in formats that fit planner needs, 2) working with planners to locate data within the StreamNet database and contributing projects' databases, and 3) advising and assisting planners on data management issues.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Accomplishments, Second Quarter 2002</u>
CRITFC	1	Provide described services to CRITFC staff working on subbasin planning and NMFS' TRT groups	The Council's subbasin planning process has not yet begun. References were provided as requested by participant on the TRT.

IDFG	1	Provide data and related assistance to subbasin planning efforts in Idaho. IDFG has the lead role in a number of subbasins and we will provide support services, including tabular reports and GIS services to these subbasins.	<ol style="list-style-type: none"> 1. We produced maps for IDFG project proposals for Middle and Upper Snake Provinces. The maps included terrain relief maps, locations of towns and rivers, among others. 2. We also produced a map showing bull trout distribution in the Lemhi watershed for IDFG. 3. We produced several other maps for our staff in support of subbasin planning.
MFWP	1	Work with Montana's CBFWA representative involved with subbasin planning and provide data, map products and assistance as needed.	There were no requests received this quarter.
ODFW	1	Participate in Subbasin Planning meetings and provide data, advice, and related assistance to subbasin planning efforts in Oregon (within existing resources and as workloads permit)	<ol style="list-style-type: none"> 1. The NRIMP Project Leader attended the NWPPC meeting in Eugene. He introduced himself to both Oregon Council members and scheduled a meeting with Councilman Eric Bloch to discuss the data management situation in ODFW and Oregon in general. He also met with Drew Parkin (NWPPC), Phil Roger (CRITFC), and Bruce Schmidt to discuss the Council's Subbasin Planning Info. Management Technical Support strategy. 2. The NRIMP Project Leader attended one Oregon Subbasin Planning Core Team meeting in Portland where implementation of the NWPPC's Subbasin Planning Info. Management Tech. Support Strategy was the primary topic.
WDFW	1	Participate in Subbasin planning meetings and provide data and advice as needed.	<ol style="list-style-type: none"> 1. Woodard and Smith continued to update the Columbia River Subbasin reports to describe the basin better and reveal relevant issues. Chum and Chinook data for tributaries below Bonneville Dam were delivered to Ron Roler along with past write-ups on these tributaries. 2. Woodard continued working with ArcExplorer and ArcView to provide local Region 5 response to Subbasin planning needs. Specifically he worked with GPS point locations of Chinook, Coho and Chum spawned or observation sites in the subbasin. He also worked with a GPS location on the Coweeman River of a fish way built in 1955 and digital pictures taken as archive documentation.

Objective 5 Services to Fish and Wildlife Program Activities

Task 2 Support monitoring and evaluation efforts

Assist in the development of products that contribute to the monitoring and evaluating (M&E) of Fish and Wildlife Program effectiveness. Specific areas of involvement will include: participation in Program-related monitoring and evaluation work groups; periodic re-evaluation of the StreamNet data plan to ensure consistency with M&E needs; and design of databases and formats to house and disseminate M&E information to the degree possible under the existing contract.

Project	Job	Planned work elements	Accomplishments, Second Quarter 2002
---------	-----	-----------------------	--------------------------------------

All No requests for assistance with monitoring efforts were received during this quarter.

Objective 5 Services to Fish and Wildlife Program Activities

Task 3 Support for and participation in regional data management initiatives

Work with regional entities to promote and implement sound data management programs that ensure efficient organization, management and delivery of pertinent fish and wildlife related information within the Columbia Basin. Efforts may include determination of regional data needs, identification of obstacles and challenges to effective regional data management, and development of recommendations and will take place in a collaborative atmosphere.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Accomplishments, Second Quarter 2002</u>
CRITFC	1	Participate on Regional Data Management Committee and other groups to improve data management in the region	Phil Roger was named to the project team for the Council's regional data project contracted with SAIC representing CRITFC. Phil attended the first organizational meeting for this project.
ODFW	1	Participate in discussions and offer solutions related to Columbia River Basin database management and information distribution issues, as needed.	The NRIMP Project Leader reviewed and commented on Washington County's response to ISRP comments regarding their barrier prioritization proposal to BPA.
Region	1	Participate with regional entities in the development of effective regional data management programs and approaches. 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 duplication of effort. Support and encourage regional data needs assessments.	We attended a kick-off meeting with SAIC on the Council funded regional database inventory and needs project. The basic approach of the project was explained, and involvement of the existing data projects was discussed. StreamNet agreed to participate directly in the project. We began by providing a number of background documents to SAIC staff that describe current data project capabilities and issues.
Region	2	Utilize the Systemwide Project Review process to recommend effective and cost-efficient approaches for meeting regional data needs. This will be done through project presentations and through development of issue papers that evaluate various aspects of data management in the basin.	The Program Manager, with support and input from staff, StreamNet Steering Committee members, and the DART project, wrote and submitted a so called "subbasin summary" for data management as part of the Mainstem and Systemwide Province under the Rolling Provincial Review process, entitled: Data Management in Support of the Fish & Wildlife Program Summary. This summary describes obstacles and limitations to comprehensive data management, current data management efforts, and current and long term needs. It is intended to serve as a background for evaluating project proposals for systemwide data management projects in the next round of project funding.

Objective	5	Services to Fish and Wildlife Program Activities	
Task	4	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>Accomplishments, Second Quarter 2002</u>
MFWP	1	Be available to Montana entities as a source of information and assistance for capturing F&WP-related data, as needed.	There have been no requests.
Region	1	Research and obtain resident fish data sets developed by BPA-funded projects. Where data are of a type similar to StreamNet data types, work with project sponsors to capture data in StreamNet format and enter into the StreamNet database. Where data are of a different type, work with project sponsors to identify the best means to post useful data in an archive format 'as is.'	At the request of NWPPC, regional staff at PSMFC began an inventory of resident fish data collected by projects funded by BPA. We obtained from CBFWA and BPA a list of BPA-funded projects aimed at resident fish species and a list of project leaders who have done work on resident fish species. In order to begin obtaining the data and other information generated by these projects so that they could be made available via the StreamNet web site, a form letter was mailed out to each project leader and agency requesting information on the specific resident fish data that were generated by each project. After this letter was sent, StreamNet personnel from Montana, Idaho, and Oregon assumed responsibility for follow-up contacts in order to actually acquire the data, while for sources in Washington, WDFW StreamNet staff preferred that PSMFC staff continue the effort. It is hoped that a good response will make available much information that at this time is difficult to locate and in danger of being lost. This project will continue through the next quarter.

Objective	5	Services to Fish and Wildlife Program Activities	
Task	5	Data and services as requested by other FWP participants	
		In consultation with CBFWA, the Council, and BPA, StreamNet will provide technical assistance and data services to Program projects as requested, to the degree possible under the current contract.	
<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Accomplishments, Second Quarter 2002</u>
IDFG	1	Provide technical assistance to fisheries projects in IDFG. Under current funding from both the F&WP program and IDFG, we are very limited in our ability to provide this assistance. Assistance will generally be focused where there is some mutual benefit to both StreamNet and the other project.	1. We continued our close relationship with the FWP funded Idaho Supplementation Studies. We added enhancements to the spawning ground database and interface for redd count and carcass count data. We also added enhancements to the juvenile trapping system. These systems allow data entry by field biologists and data maintenance by the project coordinator. Data are then electronically transferred to the FIS and made available to StreamNet.

		<ol style="list-style-type: none"> 2. We also continued to support the BLM Challenge Cost share project to compile historic data from IDFG regional offices. During this quarter, we monitored and administered the database and interfaces for the project. These data will also come directly into the FIS and made available to StreamNet. 3. We provided administrative and technical support to the Collecting Permit system and Fish Reference system. 4. We also worked with the IDFG Salmon, Panhandle and McCall regional offices to incorporate standardized species codes, LLID and GPS coordinates into their stream survey databases. This will facilitate the eventual incorporation of their data into the FIS and StreamNet.
MFWP	1 Data services will be provided by Montana StreamNet staff on request.	There have been no requests.
ODFW	1 In consultation with CBFWA, the Council, and BPA, Oregon StreamNet staff will provide technical assistance and data services to Program projects as requested, to the degree possible under the current contract.	<ol style="list-style-type: none"> 1. Oregon received calls from Upper Columbia TRT representatives who said they want to extend our Viable Salmon Population effort into the Upper Columbia for an unspecified length of time. I informed them that we needed a year's worth of support or it's not worth pursuing. Specifically, we spoke with Rich Carmichael (ODFW-LaGrande), Michelle McClure (NMFS-Seattle), Drew Parkin (NWPPC), and Bruce Schmidt in separate phone conversations to discuss how to expand the VSP Project into the Upper Columbia TRT area of responsibility. 2. The NRIMP Project Leader reviewed the second draft of the VSP Project Completion report, and worked with the VSP Data Entry Technician to refine the document. 3. The NRIMP Project Leader drafted a document describing the pros and cons of our VSP Project in hopes of improving how the project might be set up and run in the future. The document was provided to Phil Roger of CRITFC.
Region	1 Respond to requests to the StreamNet project from F&WP participants for data, maps, or GIS products or general assistance. Provide assistance, including custom map work where feasible. Direct users to other resources if requests exceed project capabilities.	<ol style="list-style-type: none"> 1. In order to support work on the Salmon Watershed Assessment Model for use in subbasin and recovery planning, the Council requested assistance in administering a contract to fund two people at NMFS. StreamNet was able to use a modification to its existing contract with the Council to hire a GIS Specialist and a Statistician at the NW Fisheries Science Center to do the needed work. During this quarter the GIS position was filled, and interviews were held and a selection was made for the Statistician, who will start work next quarter. 2. Preliminary discussions were held with representatives of the Yakama Tribe regarding assistance in development of their database system.

Objective 5 Services to Fish and Wildlife Program Activities

Task 6 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, and c) in consultation with the Council, respond to requests for information concerning Protected Areas

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Accomplishments, Second Quarter 2002</u>
MFWP	1	Exchange Montana's Protected Area database, which has been converted to LLID stream routing.	Work was completed.
Region	1	Maintain the Protected Areas database within the StreamNet database	Work continued on the project to convert Protected Areas data from the 1:250K River Reach referencing system to the 1:100K LLID system.

Objective 6 Project Management / Coordination

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

Objective 6 Project Management / Coordination

Task 1 Manage project activities

Administer all aspects of the project at the regional and sub-contractor levels, including oversight of budget, personnel, 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>Accomplishments, Second Quarter 2002</u>
CRITFC	1	Attend and participate in Steering Committee meetings	Phil Roger participated in all Steering Committee discussions. Presentations were given on the status of regional activities related to information management
CRITFC	2	Effectively administer the CRITFC StreamNet project	Normal project and staff management was provided.
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.	The FWS StreamNet project leader participated in the Steering Committee meeting held in Gladstone, OR.

IDFG	1	Prepare budgets, work statements, and progress reports	IDFG StreamNet completed the FFY2002 first quarter report.
IDFG	2	Provide project management and staff supervision for IDFG StreamNet.	The IDFG StreamNet project coordinator provided personnel supervision for not only the IDFG/StreamNet staff, but additional staff in IFWIS. He also managed work flow, providing a special emphasis to leverage StreamNet as much as possible with other projects that were assigned or made available.
IDFG	3	Participate in Steering Committee activities, including Steering Committee meetings, project direction, and data exchange format development.	The IDFG StreamNet project coordinator was an active participant in Steering Committee meetings and DEF development.
MFWP	1	Provide normal 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 FY02.	The Project Manager completed Performance agreements for all staff. We have received .5 FTE from the Wildlife Division to create a Nongame Wildlife Information Management System. We will move Steve Carson into this position and he will continue as .5 FTE as the StreamNet data manager. We will then move his .5 and combine with another .5 FTE and hire another person in the Helena office to help with StreamNet and GIS requests.
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.	<ol style="list-style-type: none"> 1. Meetings: The Project Leader attended the February 5 and 6, 2002 Steering Committee meeting in Portland, Oregon, and attended the StreamNet FY03-05 funding strategy meeting at CRITFC in March. 2. Reports and SOW: Oregon completed and submitted it's 2001-Quarter 4 Report and it's portion of the FY 2001 StreamNet Annual Report. Staff reviewed and commented on the draft System-wide Provincial Review Summary primarily written by Bruce Schmidt. 3. Training: The 24K GIS Coordinator attended an ArcIMS workshop held at OSU. The Database Analyst completed two MS Excel workshops at OSU, and the instructional portion of a grant writing course at the University of Oregon during the Quarter. The Project Leader attended a seminar at EPA-Corvallis titled "Stream Restoration Techniques and a Hierarchical Strategy for Prioritizing Pacific NW Watersheds". 4. Library: The Database Analyst completed and submitted four more library grant applications trying to secure funding to renovate it and keep it in operation. 5. Hardware/Software/Equipment: The Database Manager initiated work on an Inventory Management program. This application will be written in C# and the NET framework. This application will allow us to evaluate the .NET framework while providing a solution to a current problem. Progress continued on developing a more efficient reporting application. In order to finish the reporting database the Database Developer needed a consistent way for everybody to send their updates to the Project Leader. To that end, he created a dynamic link library (DLL) that will allow everybody to send the update via SMTP (Simple Mail Transfer Protocol).

This will let everybody send E-mail regardless of which client they use. He successfully tested it for Corvallis users and will soon send it to Portland staff for testing on the ODFW network.

6. Personnel: The Project Leader met with each staff member to discuss future training needs and to assess the status of each SOW task and adjusted priorities to ensure all tasks will be accomplished as planned. The meeting with the GIS Analyst also included a discussion on the consequences if ODFW's GIS Coordinator loses his position. The Project Leader completed and submitted hiring request paperwork to hire a technician to finish entering ODFW's Fish Presence Survey data forms.

Region 1 Project Administration: Perform ongoing administration of the StreamNet project, to include budget development and tracking, contract monitoring, personnel functions, inventory control, etc.

1. Routine project administration continued.
2. The regional fisheries biologist participated in reviewing applicants for the Assistant Librarian position at the StreamNet Library.
3. The FY-01 budget was finally approved by the Council. The project received level funding with a 5% COLA. Even though that did not fully cover the actual inflationary costs, it did resolve the uncertainty and supported most planned project activities. It did leave three positions (GIS Specialist, Fish Biologist and Programmer) un-funded for three months each, however.
4. The Program Manager worked with the IDFG Project Manager and the BPA COTR to determine the appropriate way to handle a new approach to computer purchase and replacement by IDFG. It was determined that contract funds can not be used in advance to cover planned replacements, but that costs can be recovered on a schedule after they have been purchased by IDFG.

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.

Work on the Systemwide Summary and planning for the FY 03-05 project proposal slowed work on reports this quarter. Progress was made on the FY-01 Annual report, but actual delivery of the report will be made in the Third Quarter.

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.

1. The winter Steering Committee meeting was hosted by CRITFC on Feb. 5-6. Key topics covered in the meeting included: 1) Review of the Database Support Summary report and discussion of the short and long term needs; 2) Use of the Forum to resolve issues; 3) Need for interface tools; 4) Internet mapping demonstration; 5) Status of data updates; 6) Resident fish data inventory; and, 7) Technical issue discussions, including distribution and use definitions, and genetics DEF.
2. A supplemental SC meeting was held March 12 at CRITFC, with some members participating by phone, to discuss strategy and organization for developing the FY 03-05 project proposal.

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).

1. O'Connor and Sikora attended the February 5 and 6, 2002 Steering Committee meeting in Portland, Oregon. Both provided detailed review and comment to help finalize the draft agenda prior to the meeting. In addition, Sikora provided content and O'Connor delivered an updated version of the "Summary of Data Submission Commitments from the 2002 Work Statement" report to Bruce Schmidt in advance of the meeting.
2. O'Connor and Sikora finalized the FY2001 Annual Report and made timely submittals of the FY2002 Q1 Report with suggestions to track the database changes via a Modifications Log. Upon request, O'Connor also submitted an Executive Summary containing Select Highlights and Related Work with respect to the Q1 Report.
3. O'Connor participated in a special Executive Session StreamNet meeting at CRITFC on March 12 to start making decisions about the scope and priorities for the StreamNet 3-Year Work Plan.

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.

1. All WDFW StreamNet staff attended the required WDFW Fish Program meetings with Lew Atkins and Jo Wadsworth.
 2. Sikora and Lensegrav attended a one week "Fish Genetics" class sponsored by USFWS to gain background knowledge for potential, future genetics data exchanges and stock discussions. Sikora attended a First Aid refresher course (Jan 16).
 3. Pending a forced move, O'Connor and Sikora reviewed the Olympia Natural Resource Buildings (NRB) first floor space for suitability and O'Connor submitted a proposal to WDFW office managers. All NRB staff re-organized their offices before and after a carpet cleaning event. Sikora inventoried her computer hardware. Sikora also had a one month vacation this quarter.
 4. WDFW StreamNet staff met to discuss work progress and data issues in order to update a Data Submissions Commitment report requested by Bruce Schmidt (see 6.1.1 Item 1).
-

Objective 6 Project Management / 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 and its data development activities.

<u>Project</u>	<u>Job</u>	<u>Planned work elements</u>	<u>Accomplishments, Second Quarter 2002</u>
CRITFC	1	Work with NWPPC and related agency staffs to improve data management services to the region	Phil Roger worked with Council staff and contractors to include data management functions in draft work statements for subbasin planning. He worked with the Oregon Coordinating Group on similar issues but focusing on division of responsibilities between a state technical assistance team and local subbasin groups. He kept Steering Committee apprised of developments and status.
MFWP	1	Provide services as requested	We received no requests. We reviewed a data management white paper from the Regional Office.
Region	1	Work with regional entities to contribute data management expertise with development of activities within the scope of the Fish and Wildlife Program.	StreamNet personnel met with personnel from the USFWS's Regional Office, Washington State Office, and Oregon State Office to discuss

Objective 6 Project Management / Coordination

Task 3 Coordinate with other related activities

Maintain communications between StreamNet and other applicable regional and state-level fish and wildlife activities 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>Accomplishments, Second Quarter 2002</u>
IDFG	1	Coordinate and collaborate with other organizations, including federal, tribal, state, and local governments and private organizations. Such coordination and collaboration will be selected and conducted in such a manner as to provide benefit to IDFG and StreamNet database systems or to distribute StreamNet data.	As part of our overall strategy to provide a complete flow of data from field biologists, we worked to expand the use of the FIS beyond just the IDFG portion of Idaho Supplementation Studies to all the ISS cooperators, including federal agencies and tribes.

MFWP	1	Maintain communication between state and regional entities	We met with the Montana Natural Heritage Program to discuss data management issues and creating field guides for each species.
ODFW	1	Establish / maintain working relationships with data collection projects within and outside ODFW to promote efficient and beneficial data sharing.	<ol style="list-style-type: none"> 1. Oregon's GIS Analyst attended two presentations at the Commission meeting; one on Streamflow Restoration Prioritization and the other on state highway culvert replacement efforts. 2. The Project Leader prepared a summary of the barrier prioritization criteria, which was developed in meetings with folks in the Hood River area, in preparation for a follow-up meeting. He also updated the funding proposal to reflect 2002 salaries and expenses and sent the revised copy to ODFW administrative staff. He attended the follow-up barrier prioritization with OWEB and USFS staff to discuss progress (or the lack thereof) and funding for a person to do this work. No firm funding commitments were made but everyone was still positive on the idea and both OWEB and USFS were intent on continuing to look for funds. 3. The Oregon StreamNet Project Leader met with Doug DeHart (USFWS) and Bruce Schmidt to discuss StreamNet support for the Service's fish screening data needs. The Service has money to support such an effort, and it fits within our existing SN workplan. Doug will get back to us soon on how we might proceed. 4. The Oregon Project Leader met with NWPPC member Eric Bloch to discuss the data management situation in ODFW and Oregon in general. He definitely understood the challenges we face and was intrigued by our 'data management support overhead fee' idea. Subsequently, he drafted an outline describing the data management plan one-pager for Eric Bloch. 5. Staff attended an OWEB GIS coordination meeting with Janine Salwasser, Information Policy Advisor, regarding OWEB's/OSU's desire to construct a Natural Resources library which will allow users to access tons of natural resources data, including fish distribution. 6. The Project Leader listened to the Mainstem and Systemwide Province Implementation Plan Integration meeting via conference call. 7. The Project Leader met with Diana Sharps (Fish Passage Program Coordinator with Benton Co. SWCD). She was interested in seeing what we had and telling us about her upcoming barrier prioritization effort.

Region	1	<p>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.</p>	<ol style="list-style-type: none"> 1. Regional StreamNet staff coordinated with staff of a project similar to StreamNet in California to assure compatibility of coding between the systems. In addition, questions regarding storage of hatchery return data were discussed with California personnel. 2. The program manager, while already in Seattle for work with NMFS staff, attended the NMFS Habitat Program open house in order to learn about current projects and their data needs. 3. While in Seattle, the program manager met with Richard Kang and other NMFS data project staff to discuss needs and means of cooperating...He assisted with locating the full StreamNet database on the StreamNet Web site and downloading it along with the table relationships for use in the NMFS data program. Caution was urged in recognizing that once downloaded, the data set will rapidly become out of date as new data are added by StreamNet. 4. PSMFC and ODFW StreamNet personnel met with Doug DeHart of USFWS to discuss USFWS efforts to create an inventory and database of water diversions, screens, and migration barriers. USFWS and StreamNet personnel agreed that a coordinated effort would be most time efficient and cost-effective for both entities, and agreed to work together on a joint effort if funding allows.
WDFW	1	<p>Assist in any pertinent coordination efforts.</p>	<p>O'Connor provided pointers to contacts for Washington resident fish data projects in the Basin to PSMFC tech Adam Vellutini and reviewed Adam's draft report on the status of BPA-funded resident fish data collection efforts.</p>

Objective 6 Project Management / Coordination

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

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

Project	Job	Planned work elements	Accomplishments, Second Quarter 2002
IDFG	1	Where appropriate, participate in public or private meetings and forums to represent StreamNet and IDFG. Produce reports, maps, or other materials in support of or for dissemination of StreamNet information.	As part of our collaboration with ISS, we participated in cooperators meetings.
MFWP	1	Determine if Montana needs any publications, documents and produce them if needed. Review regional products when necessary.	No requests were received this quarter.

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.	The Database Analyst worked on finalizing a PowerPoint presentation which will be used to inform the audience about NRIMP and StreamNet. It contains information about the history of NRIMP, and our relationships to StreamNet, ODFW, staff bio's, and others.
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.	The regional GIS Specialist, StreamNet program manager, and regional fisheries biologist collaborated on a presentation at the biennial steelhead biologist's meeting which was held in Corbett, Oregon on March 7. The topic of the presentation was ways in which GIS can be helpful for steelhead managers and researchers. The presentation showed several ways in which GIS has been used in management and research activities for a variety of purposes and species.
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.	Lensegrav represented WDFW at Western Washington Sportsman's Show, providing information on WDFW and StreamNet issues to the general public.

Supplemental Information: Additional work accomplished outside the specific work elements in the Statement of Work

During the quarter some project cooperators were able to opportunistically accomplish work that was not specifically called for in the annual Statement of Work. These accomplishments still related to or helped to support the StreamNet Project, and are reported below.

Project Accomplishments, Second Quarter o2002

CRITFC	1	Similar to work reported in the First Quarter, the StreamNet Library is gaining increasing exposure and is receiving and filling more requests for customized references. And, the Steering Committee member is routinely asked to participate in regional planning and evaluation groups. These include, for instance, participation in the Regional Assessment Advisory Committee, Regional Data Management project, Subbasin Planning, monitoring and evaluation discussions, etc. This broad scale understanding of regional needs and plans is reported regularly to the Steering Committee and helps keep the project relevant to regional needs.
ODFW	1	<p>1. Staff attended the Restoration and Enhancement Board meeting and presented the Oregon Fish Finder web site demos (both the tabular-based and stream-based presentations). This presentation was a total success and could not have been done without the contributions and creativity of every member of our Oregon StreamNet team.</p> <p>2. TRT Support: a) We completed revisions to the TRT database. Most of the fixes were features that were always planned for the finished product; b) the VSP Data Entry Tech entered age data and adult return information for the Clackamas and tributaries, and Molalla and tributaries into the TRT database.</p>

3. The VSP Data Entry Tech and the NRIMP Project Leader/StreamNet Project Leader attended the winter retreat for the Willamette-Lower Columbia Technical Recovery Team in Portland. They gave a presentation on the TRT database and provided a status report on the VSP project.
 4. Staff strategized approaches for Life-stage Timing Activity/Distribution Use-type relationships.
 5. The Assistant Database Manager provided technical support to ODFW Fish Screening and Passage Program throughout the quarter based on outside funding. We received the list of requested changes and additions to the FishScreen database, and began working on the top-priority items.
 6. The 24K Project GIS Coordinator created 'blank' (no distribution displayed) cutthroat maps for the eastern portion of the Scott Canyon HUC as part of our effort to develop cutthroat distribution data funded by StreamNet carryover funds. She also re-created coastal cutthroat maps for the Hood (Scott Canyon only) showing newly entered distribution data in preparation for a review meeting with Steve Pribyl (ODFW) and Rich Larson (USFS). This represents our first set of 'pseudo' distribution results.
 7. The GIS Analyst is conducting a search for old PNW Rivers Study Protected Area hardcopy maps in response to a request from Regional StreamNet staff.
-