

StreamNet

BPA Project Number 198810804

Fiscal Year 2001

Fourth Quarter Progress Report

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Table of Contents

Introduction.....	Page 2
Objective 1. Data Development.....	Page 3
Task 1.1. Anadromous Fish.....	Page 3
Task 1.2. Resident Fish and Other Aquatic Species.....	Page 13
Task 1.3. Habitat.....	Page 19
Task 1.4. Facilities.....	Page 20
Task 1.5. Habitat Restoration / Improvement Projects.....	Page 25
Task 1.6. Sub-basin Planning.....	Page 26
Objective 2. Data Management and Delivery.....	Page 30
Objective 3. Library.....	Page 46
Objective 4. Services to Fish and Wildlife Program Activities.....	Page 50
Objective 5. Project Management / Coordination.....	Page 55

Introduction

This report presents accomplishments of the StreamNet project for the Fourth Quarter of Fiscal Year 2001. The report is organized to clearly link accomplishments by the project participants to the Tasks and responsibilities detailed in the FY2001 Statement of Work. It is organized by Task for all project participants rather than by individual project participant. Job statements from the Statement of Work are presented on the left of this report for each participant, with work accomplishments for those jobs presented on the right. Since not all work elements are addressed each quarter, and project participants often work on different jobs at different times, some jobs do not show activity in the Fourth Quarter. Those jobs with no activity are not listed in this report.

Project participants contributing to the StreamNet project were Columbia River Intertribal Fisheries Commission (CRITFC), US Fish and Wildlife Service (FWS), Idaho Department of Fish and Game (IDFG), Montana Fish, Wildlife and Parks (MFWP), Oregon Department of Fish and Wildlife (ODFW), Pacific States Marine Fisheries Commission (Region), and Washington Department of Fish and Wildlife (WDFW). The Shoshone-Bannock Tribes (SBT) have been a participant for a number of years, but they are currently fazing out their participation in the project due to other workloads, and were not active this quarter.

Objective 1 Data Development

Increase the knowledge base concerning the region's fish and wildlife resources through the acquisition of new information that responds to emerging needs as well as the updating and enhancement of production and survival trends and other existing information.

Objective 1 Data Development

Task 1 Anadromous Fish

Acquire data sets related to salmon, steelhead and, where data are readily available, other anadromous fish populations from the multiple agencies, tribes and organizations within the Columbia Basin and compile and maintain them in standardized, consistent formats for the following categories:

Objective 1 Data Development

Task 1 Anadromous Fish

Task 1.a Distribution, Life History (use type), and Barriers

Document the occurrence, distribution and habitat use of anadromous species, related barriers to migration, and life history Characteristics

Project Work Element

Accomplishments, Fourth Quarter, FY2001

ODFW 1 Update, maintain, correct and exchange barrier information.

1) We initiated an effort to incorporate culvert information into the Barrier database. To do this, a data entry form was created and linked from main form to show additional information on culverts not currently captured in the database.
2) Staff requested, acquired and processed culvert data from Clackamas and Multnomah counties. Also acquired culvert data from Hood River County.
3) We added several new hatchery facility-related barriers found in a report developed by ODFW pathology staff, and new information associated with hatchery facilities already in the barrier table.

ODFW 2 Update, maintain, correct and exchange anadromous fish distribution information (DistUse and DistPresence tables).

1) We worked to compile disparate sources of documentation data (DistPres table) to supplement what had previously been entered into the Documentation database. From this, a table was generated that included all records for the Willamette, Rogue and Mid-coast collection efforts (6,668 records).
2) We transitioned management of fish distribution event data from Info format to MS Access. We created a Design Master and Replicate copies to facilitate distributed management.

ODFW	4 Design and develop a database to capture carcass placement data.	Duplicate Task - information is provided under Objective 1, Task 5.b - Work Component 2.
ODFW	5 Update (and modify if needed) the Fish Presence Survey database which helps populate the DistPresence table.	<p>1) We continued to enter data into the Fish Presence Survey Database that is designed to capture Oregon's upper fish distribution and culvert information collected by ODF/ODFW surveyors. To date, 5,542 records have been entered.</p> <p>2) We began modifying the design and structure of the Database to facilitate more efficient data entry by users.</p> <p>3) PS data was processed into GIS coverages.</p> <p>4) We prepared a district level summary of data entered thus far, and sent the reports to ODFW district staff with a request to submit additional data that had not yet been provided to us.</p>
ODFW	6 Update (and modify if needed) the Incidental Fish Observation database, which captures incidental species observations not routinely reported in agency documents, which helps populate the DistPresence table.	<p>1) We continued to enter forms as they came in - currently, 32 of the 116 records in the database are for Col. Basin streams. New information will not be processed and submitted to StreamNet due to budget cuts.</p> <p>2) We work was initiated and completed to derive LLID or coordinate points for all IFO forms that are missing this information.</p>
ODFW	7 Identify appropriate documents/references for anadromous fish distribution data in order to populate the DistPresence table.	Ongoing.
ODFW	8 Update, maintain, correct and exchange photographic information (MapCat and related tables).	We acquired existing electronic images of Oregon hatcheries that were located on the agency network in Portland. Added 122 hatchery photographs to the MapCat Database and linked them hatchery facilities in the Barrier Database. The photos and updated MapCat database were submitted to Regional StreamNet.
ODFW	9 Populate the genetic origin and production origin fields in StreamNet distribution exchange format for all anadromous fish distribution data in the Columbia basin.	This Task was dropped due to budget cuts. Standards and definitions need to be developed in order for this work to occur. As part of our 24K Fish Habitat Distribution Development Project, definitions were drafted but they still need to be reviewed and adopted by ODFW and StreamNet. They are currently being used on a provisional basis.
Region	3 Assist StreamNet partners with acquisition, development, formatting and submission of data.	Over the past year, several attempts have been made to create a data structure for integrating fish distribution information at the regional level. This quarter, PSMFC personnel led a new attempt to compile the ODFW, WDFW, IDFG, and MFWP data. This effort took off from significant progress made by MFWP during this quarter. Further progress was made. Significant problems have repeatedly occurred in the attempt,

due to the fact that it is not just data structures which vary between agencies. Rather, the concepts behind what data are stored are somewhat different between the states, making the effort to merge the data focus largely on creating carefully-worded descriptions which are inclusive but also clearly define the meanings. For example, two states record where fish are thought to exist, and two states record where appropriate and accessible fish habitat exists. The final resolution of this problem will depend on creation of precise language acceptable to all the states, and an agreement on the level of detail needed to make the data valuable. Work on this will continue into next fiscal year.

WDFW 1 Review barriers in the anadromous fish distribution layer, based on SSHIAP information and indicators in the Stream Catalog. Update and exchange the data with the regional database.

Hudson and O'Connor assisted in updating smelt presence data for the Lower Columbia River on an emergency basis to support EIS assessment for the Army Corps of Engineers dredging project. New programs were written, maps were developed, new data were collected and entered, and new, publication-ready maps were generated.

Objective 1 Data Development

Task 1 Anadromous Fish

Task 1.b Adult Abundance

Escapement, redd counts, trap counts, dam counts, hatchery returns

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
IDFG	1 Compile 2000-field season redd count data and 2000 field season hatchery return data and submit to the regional database.	1) We completed compilation and entry of the year 2000 redd count data into the FIS. 2) We completed correct assignment of IDFG transects to 100K hydro (LLID) for the years 1989-1992 and 1996-2000.
ODFW	1 Update existing abundance and index trends (escapement, redd counts, trap counts, peak/other spawning counts, etc.) for anadromous species through 1999 and modify as needed to adhere to the 2000.2 Data Exchange Format. Four data submissions are planned.	1) We continued updating trends from the Columbia Basin and Coastal HUCs as information became available. 2) A total of 968 trends were either updated or created during this period. Of the 968, 367 were Adult Return - Estimates of Spawning Population, 584 were Adult Return-Peak/Other Spawning Counts, 9 were Adult Return - Redd Counts, and 8 were Adult Return - Dam/Weir counts. 3) We submitted updated data to StreamNet at the end of September, including updated hatchery return data. 4) We completed updating the Stratified Randomly Sampled surveys for coho and chinook with 1999 data.

		<p>4) We worked on updating Trends with only a MethodID to having a SampMethodID and CalcMethodID in the Fish Abundance database.</p> <p>5) We updated Marmot Dam and Pelton Dam trends.</p>
ODFW	2 Compile data on returns to ODFW hatchery facilities (updated for 1997, 1998, and part of 1999 returns).	6) We completed the Hatchery Return data effort by compiling almost all the HMIS data into our abundance database. The data was delivered to Regional StreamNet in late September including 320 trends, with 4,424 detail records for those trends.
Region	1 Assist StreamNet partners with acquisition, development, formatting and submission of data.	We loaded 58 new anadromous Trends and updated 910 Trends for ODFW in Oregon.
WDFW	1 Update and exchange hatchery returns through 1999 in StreamNet data exchange format.	<p>1) Woodard downloaded 1995-2000 hatchery returns data from the WDFW hatcheries division. Upon review of the data it was noted that a field not previously filled was now being filled with data (Shipped/Planted). A review of the WDFW StreamNet hatchery returns database also revealed that a new rollup of data would be required in order to correctly account for fish returning to WDFW hatchery facilities. This showed that we inaccurately reported the data in previous submittals to StreamNet because the WDFW Hatchery Division does not correct their database. Instead they merely correct their printed reports.</p> <p>2) Woodard met with Kyle Adicks several times to discuss how to properly roll up existing data in the WDFW hatchery division database to fit the StreamNet DEF. After further review Woodard decided to abandon old procedures for rolling up WDFW hatchery division data and start all over with a new format. This draconian measure was taken as an ever-evolving WDFW hatchery division database changes too much from year to year to rely on previous years' roll-up tools and documentation.</p> <p>3) Woodard rolled up the 1995-2000 hatchery returns data, added the new Shipped/Planted field to his WDFW StreamNet hatchery returns database and checked for accounting errors. He created a master table to convert hatchery division alpha location and stock codes to DEF numeric coding schemes. Woodard also created a master species table to coordinate species, run, and subrun numeric codes per StreamNet's DEF with WDFW hatchery division's alpha species and run codes.</p> <p>4) Woodard added the rolled up 1995-2000 hatchery return data to his StreamNet Returns database and is preparing for a data exchange. Yet we still must discuss and decide how to convey the data in the current StreamNet DEF so it makes sense compared to the WDFW Hatchery Division reports since there is no current easy way to report the number that was shipped\planted. At this early date, the best option seems to be to add the shipped\plant count to the comment field and include that count in the Total field.</p>

WDFW 2 Update and exchange natural spawner data (returns and/or redd counts) through 1999 for available species (CR, PS)

5) After the exchange, we will intensify our work with the Hatchery Division to improve their Form 5 database and procedures. Also after the exchange in FY2002, Sikora must update the id-logs to reflect the status after both the FY2002 and Dec2000 returns data was exchanged.

6) Also see Objective 1 Task 4b Work Component 1 for inconsistent entries in the Form 5 database's facility and trap fields.

1) On their budget code, Lensegrav assisted the WDFW's Wild Stock Unit with five days of field work on a chinook mark\recapture study of the Green River to assess adult returns that get above the fisheries.

2) Smith worked on tying up loose ends and looking for missing data for the escapement database. Smith worked on the TrendStat and HistStat, and sent her final classifications over to Bruce Sanford, to get a response as to whether it is correct or changes need to be made. Smith also asked him about a couple of trends regarding the Hoh River.

3) Smith collected data from Ron Roler for Upriver Brights, typed up a memo and entered the escapement data for the Hanford Reach area. Travis Nelson was contacted about the missing chum data for the Puget Sound and a complete list of chum data was sent and entered. Smith also revisited already entered Puget Sound redd count data to verify the numbers.

4) Smith looked over the 60K trends from Pacific States Marine Fishery Commission and compared them to already existing WDFW trends. We already have WDFW trends for each 60K trend that she assessed so we will direct StreamNet to delete the 60K escapement trends upon the next exchange.

5) Smith tried to track down missing data from some Eastern Washington rivers. Smith talked with Olaf Langness and he provided her with some information, and also gave her a couple of names to contact for more information, Tom Cooney and Kris Petersen. Smith emailed Tom Cooney, but has yet to hear back from him. Kris Petersen was also Emailed. She responded by giving Smith another name of someone who would probably be able to send her what she is looking for, Andrew Murdoch. Andrew Murdoch promised data by the end of July or early August, as he would be in Alaska.

6) Andrew Murdoch emailed Smith some data in August for east side rivers and gave Smith a list a people to contact for additional information. Andrew also mentioned that he was mailing Smith some spawning ground data. Smith received a couple of reports containing Mid-Columbia data from Andrew Murdoch through the mail. Smith read through these reports and pulled out a lot of data that she had been looking for to fill Mid-Columbia data gaps. Smith also acquired from Lisa Harlan,

Vancouver Region 5 Bio, some data she had collected for some of the Wenatchee area rivers. Smith also acquired from Bob Woodard a 2000 report done on the Entiat River, that contained some data that Smith was looking for, as well as an escapement book with general summary reports from 1952-1979.

7) Smith also worked on a few data requests. Brian Edie's (WDFW) request contained information for spring chinook, chum, summer and winter steelhead for years 1997 to current, from Bonneville Dam downstream. Ron Roler's request included fall chinook data for Grays, Elochoman, and Cowlitz rivers and chum escapement on the Grays River System.

8) For the next escapement data exchange, Sikora will use Smith's current snapshot rather than the older snapshot she was working with earlier this FY before priorities shifted to hatchery facility and bull trout distribution data.

(Also see Objective 2 Task 1 Work Component 1 for Brown's work creating a consolidated survey data collection system.)

Objective 1 Data Development

Task 1 Anadromous Fish

Task 1.c Juvenile Data

Sample records, abundance indices (as available)

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
IDFG	1 Finalize the incorporation of the IDFG General Parr Monitoring (juvenile) data into StreamNet.	We helped IDFG staff error check and summarize juvenile salmonid trapping and tagging data for 2001.
ODFW	1 Prepare and submit recommended modifications of the draft Juvenile abundance portion of the DEF.	This Task was dropped due to budget cuts.
ODFW	2 Update Oregon's 10 existing juvenile abundance records to approved DEF standards.	Juvenile data have been catalogued and saved for a future effort. No work has been accomplished to create Trend data with this information. ODFW staff are awaiting a format change to the juvenile abundance record requirements and interface form design.

Objective 1 Data Development

Task 1 Anadromous Fish

Task 1.d Harvest

In-river, terminal, and other harvest, as available

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
ODFW	1 Provide remaining 1997 & statewide 1998 tributary sport harvest from angler harvest cards.	No work was performed on this task during this quarter. We are awaiting additional update of harvest card database from the Portland headquarters.
WDFW	1 Update and exchange salmon harvest data through 1999, beginning with Columbia River commercial, sport and treaty harvest.	1) Early Aug, Lensegrav enhanced WDFW's marine area code table (wamarcs5.db) with separate commercial catch & sport catch area fields to capture the different area naming protocols, entered area designations for questionable records and documented his enhancements. 2) Smith built tables for a report on sport mark recoveries for the tributaries of the Columbia River, 1999 and 2000. The final table was delivered to Susan Markey in FY2002 (end of October) and will help in future years to update Columbia River harvest data for StreamNet. (Also See Objective 2 Task 3 Work Component 4)
WDFW	2 Update and exchange steelhead harvest through 1998.	N/A – We didn't add this back after budget cut.

Objective 1 Data Development

Task 1 Anadromous Fish

Task 1.e Hatchery Production

Releases and disposition

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
FWS	1 Compile FWS hatchery release data, w/ added CWT information	Additional release information was added to sr80s.dbf.
FWS	2 Transform data to format 032	The initial transformation of 2001 release data was performed.
IDFG	1 Compile 2000-field season hatchery returns data.	We began verification and correction of historic hatchery return data.

ODFW	1 Develop the ability to remotely access the Portland mainframe hatchery database and download hatchery return data consistent with the StreamNet contract.	<p>1) Our new Database Manager began familiarizing himself with the Insyte software by working through all examples in the user's manual and producing several test reports. He learned the syntax for the Insyte query language and produced reports from the HMIS system for import into Access. He then worked on retrieving and formatting hatchery data from the Insyte system and familiarized himself with running test reports and saving files to the Unisys system. He downloaded large amounts of raw data to insure the information was there that StreamNet needed in the Trend database.</p> <p>2) We began work on an application to automate the process of gathering and translating the raw data from the HMIS system into StreamNet format. Currently the program can process individual records, but will soon have the ability to automatically process all the information and output the results to Jet database tables. Downloaded all the raw data needed to populate the HatchRetData table and started to process the data to get the calculated information required by the DEF.</p> <p>3) We completed the Hatchery Data Compiler program. This program takes the raw data from the HMIS system and compiles it into usable HatcheryRel data. Also working on the manual to enable other users to complete the process.</p>
ODFW	2 Compile egg-take data into StreamNet format and submit to PSMFC.	<p>1) Completed work on the Hatchery Data Compiler, an application that automates the collection of data from the HMIS system and transforms it for input into the StreamNet database. It also allows users to graphically select queries rather than enter commands into the telnet session (which requires the user to remember the correct syntax).</p> <p>2) Because the DEF requirements have not been finalized, no disposition data were exchanged during this quarter, but we are prepared to obtain the data in the agreed upon format once the format is finalized.</p>
WDFW	1 Update and exchange juvenile release data to PSMFC through 2000.	Cox submitted release data updates to PSMFC including all the available 2001 data at that time. His last submittal during this period was on Aug 22, 2001.
WDFW	2 Explore providing "unrolled" release data directly to StreamNet.	To send the data described in the first component directly to StreamNet in their format instead of the RMIS format, we continued to identify some of the proper LLID or HatchID codes that would be needed for this effort. In the first and second quarter of FY2002, WDFW will focus on converting all relevant release data fields and exchanging the data directly to StreamNet. In May 2001, Kinney reminded WDFW that the system he left does all error checks and PSC code conversion to WDFW's Hatchery Division release data BEFORE the rollups to one record per CWT.

Task 1.f Natural Production**Survival, production factors, spawner recruit**

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
ODFW	1 Compile hatchery-wild fractions in OR portions of the Columbia basin for spring chinook and fall chinook.	No data were delivered for inclusion in the database. Considerable progress was made in compiling data for inclusion in the database. We expect to provide data early in next contract period.
ODFW	2 Compile spawner-recruit data (updated for spring chinook surveys in 1998 and 1999, and available time series for fall chinook and coho returns)	This Task was dropped due to budget cuts.

Task 1.g Age**Age/sex composition for returning adults**

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
FWS	1 Update age and sex data through 2000	Pastor investigated alternate methods of assigning ASNID.
IDFG	1 Compile 2000-field season age and sex composition data.	We began verification and correction of age/sex data in conjunction with hatchery returns (work component 1.1e.1).
ODFW	1 Compile age frequency data (updated for natural spring chinook in 1998, available time series for natural steelhead in OR portion of Columbia basin).	This task was dropped due to budget cuts.
WDFW	1 Provide age/sex data associated with exchanged CRB natural returns data.	See Objective 2 Task 1 Work Component 1

Task 1.h Genetics

Areas where genetics data exists and the sources of these data

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	1 Develop, with SC input, standardized database format and DEF for existing regional genetic data	Developed draft DEFs for a genetic database and a sample application using CRITFC data. We plan to demonstrate this application to geneticists at a conference in October. Final recommendations for StreamNet management of genetic data will be made following this conference.
CRITFC	2 Provide allozyme and genetic data developed by CRITFC in standard format	A small test application was developed using CRITFC data. The approach taken will be discussed with a coast-wide fish genetics working group during the first quarter of FY02. Full CRITFC data will be provided through StreamNet, if appropriate, after a DEF is agreed to by the Steering Committee in FY02.
WDFW	1 Participate in decisions regarding genetic data	There were no decisions requiring Steering Committee action during FY2001.

Task 1.i Populations

Population delineation, as determined by others

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
ODFW	1 Produce a cross-reference table of ODFW designated Gene Conservation Groups (GCG) by subbasin.	This Task was dropped due to budget cuts.
WDFW	1 Compile and exchange updated Washington SaSI stock status data for anadromous fish using newly developed 2000.1 Data Exchange Format (see Task 2.3).	O'Connor chose to postpone work on updating the statewide SaSI GIS layer until a new SaSI biologist/data manager could be recruited and brought up to speed. Significant SaSI database changes have been made to existing stocks, and dozens of new stocks have been added since 1992, so the amount of work required to update the GIS layer is substantial. However, agency budget constraints required that position to be kept vacant through September 2001. The new recruit is expected to be ready to work with StreamNet GIS staff late in the year, so an updated SaSI GIS layer will not be ready before February 2002.

Objective 1 Data Development

Task 1 Anadromous Fish

Task1.j Historic Range

As available at the watershed-level. Compilation at the reach level is an option if these data are available

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
ODFW	1 Work with the Steering Committee to define the term "historic" in the DEF.	During this quarter, the "historic" discussion blossomed into a larger discussion on the overall compatibility of our distribution data. This portion of the discussion was tabled until the larger, more general compatibility issues are resolved.

Objective 1 Data Development

Task2 Resident Fish and Other Aquatic Species

Acquire data sets related to resident fish species, and where specifically identified other aquatic species, from the multiple agencies, tribes and organizations within the Columbia Basin and compile and maintain them in standardized, consistent formats for the following categories:

Objective 1 Data Development

Task 2 Resident Fish and Other Aquatic Species

Task2.a Distribution and Life History

Document species occurrence and distribution and life history characteristics

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
IDFG	1 Add additional distribution information from references, collecting permits and stream and lake surveys for resident fish.	Fisheries staff continued data entry into reference and collecting permit modules.
MFWP	2 Provide distribution data in DEF to StreamNet when completed.	Ongoing.
MFWP	3 Determine a schedule for updating data in the future and at what frequency data needs to be collected from field biologists, also addressing species of special concern.	Ongoing
MFWP	4 Collect and catalog supporting references to document distribution and connect distribution to reference.	Ongoing
MFWP	5 Explore the development of a standard field survey form to be used by state and federal biologists to record occurrence information.	Ongoing

MFWP	6 Continue to work with regional StreamNet staff and SC to develop/modify/add to a resident fish data exchange format if not completed in FY2000.	The DEF is still being reviewed.
ODFW	1 Update, maintain, correct and exchange resident fish distribution information (DistUse and DistPresence tables).	1) We created cutthroat template maps for the Hood basin using the most recent Fish Presence Survey database, existing documentation data, existing Hood cutthroat data, and the DRG Mapper AMLs, and provided the maps the 24K Project for compilation of Hood River cutthroat distribution data. 2 We incorporated changes to the Lahontan Cutthroat event data that had been pending.
Region	1 Compile distribution updates (tabular events) as they arrive. Create and maintain distribution GIS coverages from these event tables and distribute these via the StreamNet web site.	1) As in the third quarter, all StreamNet partners continued conversations on how to integrate at the regional level the fish distribution and habitat use tables maintained by each state. The state databases contain similar data, but the concepts of the data stored are slightly different and the data are stored in dissimilar fashions. No resolution was reached this quarter on how to accomplish the integration. 2) QAed, and compiled resident fish distribution information from MFWP for 18 new species in Western Montana. Added this distribution data to the StreamNet database and online query system. Created GIS files and documentation (metadata) from this information and posted these to the StreamNet site for download. 3) Reviewed updated distribution information for Lahontan cutthroat trout from ODFW. Updated the StreamNet database, online query system, downloadable GIS files, and documentation (metadata) with this new information.
WDFW	1 Update and exchange statewide updated bull char distribution data at 100K resolution (see Task 2.3).	1) Hudson notified Sikora, Burns, O'Connor of King County's Fish Distribution layer and either noted differences with WDFW's layer or suggested it should be compared. The resident fish component (cutthroat, kokanee) is much stronger than the current WDFW data offering. Sikora has yet to review this issue. 2) Hudson and Burns performed a series of Bull Trout data layer updates as the last of a series of corrections and new sightings came in from field offices. The data were dumped to perform QC on the data entry and the code assignments following each major update. A final dump will precede exchange of this layer later in the year.

- 3) Hudson and Burns corrected the spatial Bull Trout layer code assignment issues and they re-dumped the tabular file on 9/6/2001. Sikora re-scoped the data, verified the code corrections were in place and itemized the remaining issues. All relevant staff met again to discuss when more than one record was unexpectedly created and we learned it was a product of the process when a stream bordered or bisected more than one HUC. Sikora also started researching David Graves' EventCompare tool to see if the tool can find other issues or be used instead of independent on-the-fly queries.
- 4) Sikora demonstrated WDFW's internal hatchery facility interface for Burns to provoke discussion of the different experiences and false assumptions and consider possibilities for the distribution update process. Until the StreamNet exchange format is defined, Burns continues (into FY2002) to update the layer with new or corrected information as it is submitted by the biologists.
- 5) See Objective 3 Task 1 Work Component 1 for contacts database reference work related to this data.
(Also see Objective 2, Task 3, Work Component 1 for O'Connor's on-going involvement in the distribution format discussions.)

Objective 1 Data Development

Task 2 Resident Fish and Other Aquatic Species

Task2.b Adult Abundance

Escapement, redd counts, trap counts, dam counts

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
IDFG	1 Coordinate with IDFG personnel to determine the feasibility of incorporating resident adult abundance.	Fisheries staff continued data entry into reference and collecting permit modules. We captured abundance data where it was available.
MFWP	1 Enter 2000-2001 stream fisheries survey data collected for population trends; genetics and escapement, redd counts, trap count and other counts during visits to biologists.	Ongoing
MFWP	2 Collect reference for each survey.	Ongoing
MFWP	3 Provide data in data exchange format to regional StreamNet staff.	Data not ready to exchange.

ODFW	1 Update existing abundance and indices trends (escapement, redd counts, trap counts, peak/other spawning counts, etc.) for resident species through 1999 and modify as needed to adhere to the 2000.2 data exchange standards. Four data submissions planned.	<p>1) We looked for resident data projects on the BPA project web-site, and then contacted numerous ODFW project leaders to acquire resident fish data for projects funded by BPA. We called Neil Ward at CBFWA for an explanation on project postings and for more information on where to find BPA data. We called biologists listed on the BPA project web-site in order to acquire more resident species counts in the Columbia Basin.</p> <p>2) We acquired a copy of the ODFW Collections Permit Database in an effort to locate other projects collecting resident fish data.</p> <p>3) We searched Oregon's 4-d Database to identify projects targeting resident species as well as those targeting anadromous species.</p> <p>4) We contacted biologists involved with resident data collection to request their abundance data.</p> <p>5) We acquired Bull Trout data from ODFW's Native Trout Project. We Created 285 Resident trends that were submitted in the September Data Submission. Of the 285 trends, 267 were Adult Return - Estimates of Spawning Population, 3 were Adult Return-Harvest - Freshwater/Estuary counts, 10 were Adult Return - Redd Counts, and 5 were Adult Return - Dam/Weir counts.</p>
Region	1 Assist StreamNet partners with acquisition, development, formatting and submission of data.	<p>1) Regional and WDFW staff discussed whether submission to the regional database of single-record time series was warranted. We decided that it is, as single records of some types of data, such as fish stocking, can be extremely important information.</p> <p>2) Several changes needed in the trend data input interface that were identified January 23 were implemented.</p> <p>3) We loaded 285 new Adult Return Trends for Oregon resident species.</p>
WDFW	1 Explore opportunities to compile, convert, and exchange portions of the Yakima Basin juvenile and adult abundance data from Ken Ham.	N/A – we didn't add this back after budget cut.

Objective 1 Data Development

Task 2 Resident Fish and Other Aquatic Species

Task 2.c Angler Use
Fishing pressure, creel census

Project	Work Element	Accomplishments, Fourth Quarter, FY2001
MFWP	1 Add FWP 1999 angler survey data collected by MFWP mail survey to MRIS.	Completed.
ODFW	1 Evaluate available creel data for appropriateness and fit into the StreamNet format.	This Task was dropped due to budget cuts.

WDFW	1 Explore conversion of Angler Fish Database harvest information from the Columbia Basin into either "harvest" or a new "census" format for exchange.	WDFW budget restrictions eliminated a full-time database manager for cold water species, and the warm water data manager isn't scheduled to be recruited until November 2001. Without this support, WDFW StreamNet staff do not have the expertise to explore such conversion. We will recommend that staff working on the JSAP Project consider adding this to their work statement.
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Objective 1 Data Development Task 2 Resident Fish and Other Aquatic Species

Task2.d Hatchery Production

Hatchery production (releases and outplants) for salmonids

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
ODFW	1 Acquire trout release data from 1997 through 2000 (by species, location, and facility) and compile into SN exchange format.	This Task was dropped due to budget cuts.
WDFW	1 Complete conversion and exchange resident fish stocking data from 1930-1981, once location coding has been standardized and verified.	As of April 10, 2001, Lensegrav answered all game fish release data requests. Further release work was suspended until Lake work can be re-initiated and resolved in late FY2002.
WDFW	2 Add stocking data from 1981-2000.	See Objective 1 Task 2.d Work Component 1.

Objective 1 Data Development Task 2 Resident Fish and Other Aquatic Species

Task2.e Genetics

Areas where genetics data exists and the sources of these data

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
MFWP	1 Update genetic spatial and tabular databases that contain the results of genetic analysis of populations of Montana's species of special concern	Updated databases with results received during the quarter.
MFWP	2 Update fish distribution table when new samples affect fields.	Ongoing.
MFWP	4 Work with University of Montana Genetics Lab staff to develop a more efficient method of data entry/delivery.	Ongoing

Objective 1 Data Development

Task 2 Resident Fish and Other Aquatic Species

Task2.f Population

Population delineation, as determined by others

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
WDFW	1 Compile and exchange Washington SaSI stock status data for resident fish using newly developed exchange format (see Task 2.3).	See Objective 1 Task 1.i.

Objective 1 Data Development

Task 2 Resident Fish and Other Aquatic Species

Task2.g Historic Range

As available at the watershed-level

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
MFWP	1 Complete the review of the historic distribution of Montana's native species developed by The Nature Conservancy.	Ongoing

Objective 1 Data Development

Task 2 Resident Fish and Other Aquatic Species

Task2.h Status

Population stability index

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
MFWP	2 If DEF adopted, submit bull trout, arctic grayling and westslope and Yellowstone cutthroat trout data.	Completed

Objective 1 Data Development

Task3 Habitat

Acquire data sets related to fish habitat from the multiple agencies, tribes and organizations within the Columbia Basin and compile and maintain them in standardized, consistent formats for the following categories:

Objective 1 Data Development

Task 3 Habitat

Task3.a Stream / Watershed Habitat

Incorporate applicable stream and watershed level habitat and stream survey data, as these become available

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
IDFG	1 Incorporate the IDFG General Parr Monitoring habitat data into StreamNet.	We began verification of LLID location for general parr monitoring sites, and began identification of additional GPM sites.
MFWP	1 Develop a statewide stream survey form based on information provided by Montana state and federal fisheries biologists in FY2000.	Ongoing
MFWP	2 Work with regional StreamNet staff on data exchange format, if sufficient interest and/or data.	Ongoing
WDFW	1 Transfer and exchange spatial layers of SSHIAP habitat characteristics and segmentation (based on gradient, confinement, and substrate).	Hudson completed 24K hydro layer cleanup and routing for the Lower Columbia River basins (WRIAs 24-30) and generated segments for all streams based on Cosentino's routines. Other WRIAs will be addressed next fiscal year.

Objective 1 Data Development

Task 3 Habitat

Task3.b Water Quality

Incorporate existing Clean Water Act 303(d) data and other water quality data as applicable

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
All		No work was done on this task this quarter.

Task3.c Miscellaneous Habitat Data

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
ODFW	1 Update key stream management area designations for OR including FEMAT key watersheds, AFS aquatic diversity areas, ODFW coho source river reaches, ODSL essential salmon habitat and Priority Areas.	This Task was dropped due to budget cuts.
ODFW	2 Track the progress of ODFW aquatic habitat prioritization model and provide a URL for StreamNet to link to model results when they are available.	The Project Leader communicated with the Aquatic Habitat Prioritization Model project leader. The effort is not yet to a point where information can be distributed publicly, but it is being reviewed internally.
WDFW	1 Explore Cosentino's model to assess habitat suitability for anadromous and resident fish by comparing predictions to actual. Write paper on techniques and findings.	Model development took too long to allow for comparative analysis and development of a paper describing the results. First uses of Cosentino's program took place during this quarter for Lower Columbia River WRIAs, and the initial results (in terms of modeled segment assignments and breaks) look quite good. The decision was made (on this qualitative basis) to continue use of Cosentino's model/program to generate segments for streams in other Columbia Basin WRIAs as time permits (next fiscal year).

Task4 Facilities

Acquire data sets related to fishery-related facilities and structures from the multiple agencies, tribes and organizations within the Columbia Basin and compile and maintain them in standardized, consistent formats for the following categories:

Task4.a Dams and Fish Passage 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

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
MFWP	1 Combine the StreamNet dams dataset with dams named in the GNIS and the National Inventory of Dams, and exchange Montana's data.	The spatial data layer is near completion. Processing for data exchange has begun.

ODFW	1 Update, maintain, correct and exchange dam information (as part of the Barrier database).	We added a "Flag24k" field to the Dam and Barrier tables and forms to indicate dams and barriers located on 24K streams. We also checked on and deleted two mysterious DamIDs (53201-02; they were accidental creations).
WDFW	1 Review, update, and exchange any new Washington state dams information.	No work was conducted this FY. Per request, dam work is prioritized for the first and second quarter of FY2002.

Objective 1 Data Development

Task 4 Facilities

Task 4.b Hatchery Facilities

Update and maintain a dataset on anadromous and resident hatchery facilities containing information on location, design, management and authorization

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
FWS	1 Update hatchery facility records as needed	No corrections were submitted this quarter.
MFWP	1 Provide update of these data if changes have occurred in Montana's facilities.	Spatial data and related ACCESS database are complete and currently at MFWP Hatchery Bureau for final review.
ODFW	1 Locate at least one public domain photo of each hatchery in Oregon and provide to PSMFC.	We acquired existing electronic images of Oregon hatcheries that were located on the agency network in Portland. We wrote the hatchery photos to a CD and provided it to Regional StreamNet.
ODFW	2 Review and update Oregon hatchery facilities data and submit to PSMFC.	We continued to contact hatchery facilities trying to get updated information.
Region	3 Assist StreamNet partners with acquisition, development, formatting and submission of data.	It was agreed during the last DEF modification for hatchery facilities that only permanent and "semi-permanent" hatchery facilities would be included in the list of facilities. This was done in order to avoid collecting information for the large list of temporary weirs and other structures used for collecting adult fishes or releasing juveniles. However, while working to develop hatchery returns data this quarter, ODFW encountered the problem of needing to code hatchery returns to temporary structures. After discussing several possible solutions to the problem, it was determined that the best course of action would be to add these temporary facilities to the Hatchery table so that the database structure and function would be preserved. The problem this presents is that the temporary facilities will be included in the list of hatchery facilities available to query at www.streamnet.org . However, until the list of temporary facilities becomes large, this should not present a problem.

WDFW 1 Provide standard geo-spatial coordinates (Longitude-Latitude) for each facility.

1) For our 5/2000 exchange, we did not confirm all our GIS site points. As we continued our hatchery facility work, we were reminded that the initial location coding was based on the technology we had at the time and current technology lets us see issues that were not clear in earlier determinations. Although we could see the points in our GIS interface, we could not easily see the stream name (or LLID) that was closest to the site point. For the 5/2000 exchange, we assigned LLIDs based on our internal Location field description. Now EventMapper and Hudson's GIS interface lets us read the LLID and name of the stream closest to the point. It showed some of our Location field and LLIDs are nowhere near the point. This meant either the point was wrong OR the Location description was wrong. For some cases, there wasn't reason to question the point because it was clear we just assigned the wrong LLID or the Location description obviously was just vague when it could have been specific. For other cases, the point was suspect, especially when the PSC code description jived with the Location description, so we tried to verify the point before we changed the Location field entry and LLID assignment. The text below describes the work as succinctly as possible so it doesn't follow the chronological order of the work.

2) Sikora reviewed 1\2 the issues Lensegrav found per his initial work in the third quarter while determining BegFts for each hatchery. Sikora prompted Hudson to automate WDFW's interface so compilers could immediately correct WDFW's layer attribute information or refresh the attributes determined by the GIS system. Hudson completed the automation & Sikora verified his system worked properly. Lensegrav updated our documentation of Hudson's changes.

3) Lensegrav updated the address, manager and telephone fields per a 9/2001 re-issue of the WDFW Hatchery Division phone book. Yet a day after he updated our file, we were informed that the phone book had a few errors and a revised document would be re-issued. To date, a new version hasn't arrived yet.

4) Despite an earlier intent to capture Graves' exact site-long and site-lat for Bruce Watson's Yakima area sites on WDFW's layer, Sikora just digitized these points because Graves' points were based on river miles that are imprecise when applied to the sophistication of our hydro layer. When the complete hatchery file is exchanged, Graves and Watson will see how we treated all fields for these records. If any changes are warranted they can be made before the next hatchery facility exchange that probably will be sent with our anadromous release exchange.

- 5) Woodard asked Sikora for PSC codes and StreamNet HatchIDs for 4-5 hatchery "facilities" to accommodate hatchery returns data. Sikora researched the Hatchery Division Adult Report (Form 5) and Form 3 databases to learn more about these errant facility descriptions. She learned a few new sites and new ways to describe existing facilities. The Form 5 database carries a facility and a trap site field with the intent that the facility field only describes the hatchery responsible for the paperwork. Yet the entry for these two fields is very inconsistent and to decipher the data you must understand the process for a given facility and a given year.
- 6) Sikora finalized the review of the issues Lensegrav found in his first attempt to assign BegFTs and organized our next effort to confirm more existing site points before we fixed the GIS layer for all the issues and then finished the BegFT assignments. Sikora and Lensegrav coordinated each effort as they both moved or added more facility sites, corrected OutflowTypeID assignments and updated all attribute information so the GIS system matched the tabular management file. For future reference, Sikora taught Lensegrav how to use Hudson's automation to update the attributes.
- 7) Lensegrav refreshed EventMapper with our current snapshot of hatchery locations and the 10/2001 streamslid.dbf file that is a backdrop for EventMapper. He finished assigning BegFTs, relying on the older streamslid.dbf file for streams that bordered or bisected more than one HUC because the newer file would only snap the distance from the border of each HUC.
- 8) Per Sikora's request, StreamNet reserved more HatchID codes for WDFW. Lensegrav updated our internal HatchID-Log table that tracks the availability or use of these codes and Sikora continued the on-going updates.
- 9) Even though we resolved most of what we need at this time, we still need better confirmation of some sites and many description fields (i.e., owner, water supply etc). To minimize our effort and maximize the broadcast of our request for help, Sikora started thinking on how we can use the WDFW intranet and Internet. Lensegrav noted the WDFW intranet already carries a test site of spatial maps posted by Don Saul of WDFW. In FY2002 we must continue this web research and coordinate updates to the existing site.

WDFW	2 Compile similar coordinates for fish releases that occur away from these facilities, in order to develop a spatial layer of fish release sites (including streams, lakes, and marine areas).	Sikora started some of this work when she digitized a few of Bruce Watson's acclimation\release ponds in the Yakima area described under Objective 1 Task 4b Work Component 1. Extension of this work to cover all Washington Columbia Basin facilities will require access to equipment and staff time beyond what is available in the current budget.
WDFW	3 Complete, convert, and exchange tabular and spatial data tables of Washington state hatchery facilities, including federal and tribal stations.	See Objective 1 Task 4.b Work Component 1

Objective 1 Data Development Task 4 Facilities

Task 4.c Diversion/screening
Develop a data set for water diversions and screening

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
ODFW	1 Develop a database structure and compile Oregon's fish screening data and submit a draft data exchange format to Steering Committee for review and adoption.	<p>1) Due to budget cuts, no DEF was developed or submitted to StreamNet - See note in revised Oregon SOW 7/17/2001. We completed the revisions and additions to the FishScreen Database User's Guide, and completed the form and report revisions. Network and non-network versions of the database were developed and distributed to their respective locations for corporate use in late July.</p> <p>2) We provided a training session to Fish Screening and Passage staff on how to use the database on August 1, and a training session on database synchronization in early September.</p> <p>3) We continued to provide physical and technical support for the FishScreen Database through the remainder of the quarter as issues arose.</p>
ODFW	2 Identify fish screening data that is appropriate for the StreamNet site and submit test records once an exchange format has been adopted.	This Task was dropped due to budget cuts.

Objective 1 Data Development

Task5 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 for the following categories:

Objective 1 Data Development

Task 5 Habitat Restoration/Improvement Projects

Task5.a Fish and Wildlife Program Projects

Prepare and maintain standardized data relating to tracking aquatic management and restoration projects related to the Fish and Wildlife Program

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
MFWP	1 Data will be updated for FWP Projects during FY-01; the spatial data layer of project location will be updated.	Smaller report of dataset was delivered to MRIS web development team.
WDFW	1 Follow-up from FY2000 habitat restoration project compilation	1) O'Connor drafted several versions of a budget and work plan to finish and/or expand our initial habitat restoration work using new money from EPA. Sikora reviewed O'Connor's plans and scoped the more detailed work requirements, learning that the current PRISM data conversion must be corrected to reflect BegFT and EndFTs based on PRISM's longitude latitude data instead of the sporadic RM data. 2) The latest plan is to exchange the initial PRISM data that Lensegrav compiled for WRIA 5 (Stillaguamish basin), portray it spatially using ArcView and create a visual means to compare the restoration data with the Washington State Conservation Commission's (WSCC) Habitat Limiting factors (LFA) and/or SaSi data. Lensegrav started an ArcView project for this effort. This tool will allow managers to assess whether the restoration work is conducted in the areas of greatest need. Lensegrav received positive feedback from George Pess of NMFS about the proposal and contacts for more information. Everyone thinks the proposal is a good idea, yet we must find the proper funding source since EPS's contract specifications do not encompass the nature of this work. O'Connor contacted Bruce Crawford of IAC to initiate interest in the proposal and improving IAC's PRISM database. 3) Based on his initial knowledge of IAC's PRISM data, Lensegrav drafted a document of proposed improvements to StreamNet's Habitat Restoration format. Sikora reviewed and directed revisions for this effort. This proposal won't be submitted to StreamNet until we learn more. Lensegrav also updated our Habitat Restoration documentation to reflect recent findings and researched materials for O'Connor to consider for his upcoming presentation at the November meeting of the Organization of Fish and Wildlife Information Managers (OFWIM).

Task5.b Other Projects

Prepare and maintain standardized data relating to tracking aquatic management and restoration projects other than related to the Fish and Wildlife Program

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
MFWP	1 Update Montana's Fish and Wildlife habitat restoration projects into StreamNet's Restoration and Mitigation database and submit in data exchange format.	Smaller report of dataset was delivered to MRIS web development team.
ODFW	1 Assist PSMFC with the creation and development of the map presentation of Oregon GWEB restoration data.	Restoration project summary efforts from California were shown to Bobbi Riggers & Kelly Moore of OWEB as examples of what can be done in Oregon.
ODFW	2 Design and develop a database to capture carcass placement data for Columbia Basin activities.	Three meetings were held during the quarter to evaluate the Carcass Placement Database. The Carcass Placement Database was redesigned to run more efficiently using suggestions from the meetings and the knowledge of the new database manager, including a total redesign of the Placement Location form and increasing error trapping. A beta test version and users manual were delivered to the project manager on July 31 and August 3, respectively. The final version of the database was finalized and 12 replicated copies, along with the final instruction manual were delivered to the project manager and biologists in the field in early September.

Task6 Sub-basin Planning

Develop consistent data sets and information that are particularly suitable and useful for regional sub-basin planning and make them readily available for planners

Task 6.a Provide data for Sub-basin Planning

Organize and distribute the available fish, wildlife and habitat data in a standardized format for use in Sub-basin Planning or other regional planning efforts

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	1 Develop tools and applications to make regional watershed assessment and other planning information available to subbasin planners	Efforts on this Task have been minimal awaiting NWPPC and state agreement on an approach to subbasin planning. Discussions with Oregon agencies and local subbasin planning groups have determined that it is feasible to use OWEB watershed inventory data as input to the Ecosystem Diagnosis and Treatment model to assess watershed and fish status. We anticipate implementing this strategy with subbasin planners in FY02.
IDFG	1 Coordinate with sub-basin planning efforts to supply data.	We began developing data and map products for subbasin summaries for the Upper Snake Headwaters, Closed Basins, Upper Middle Snake, and Boise-Payette-Weiser.
ODFW	2 Provide consultation services and assistance to ODFW data managers to assist them in meeting Subbasin Planning needs.	Efforts this quarter centered on reviewing budget sheets to ensure our activities were charged to the correct funding source.
Region	2 Provide available tabular data described under Tasks 1.1 through 1.5 to entities conducting sub-basin planning.	1) Due to the unexpectedly extensive work load encountered in summarizing all StreamNet data by subbasin, a separate contract was obtained from NWPPC to provide data to the subbasin planning effort. This contract covered work by staff that were not covered by the StreamNet contract and would have been working on other work under other contracts. This work involved the following general elements: a) We obtained the GIS coverage of the new subbasin boundaries from BPA. We modified this coverage as necessary for our use to correct inconsistencies resulting from differences in GIS layer scale. That is, subbasin boundaries were adjusted to ensure that streams and lakes fell within the correct subbasins. b) Several errors unrelated to layer scale were encountered in the BPA subbasin GIS coverage. We corrected these errors as found. c) Using GIS, a cross table of lakes and streams versus subbasin was created. d) The cross table was used to query the StreamNet database by subbasin for each data type. The various data types were grouped according to subbasin, and a spreadsheet of data was created for each subbasin.

		<p>e) Maps of species distribution, dam locations, hatchery locations, and streams listed under section 303(d) of the Clean Water Act were created for each subbasin.</p> <p>f) GIS layers of species distributions, dam locations, etc. were created for each subbasin.</p> <p>g) The spreadsheets, maps, and GIS layers were posted to the StreamNet web site. A series of web pages were created to provide easier access to the files.</p> <p>h) The files for each subbasin were copied onto CD and the maps were printed for each subbasin.</p> <p>2) The data summaries on CD and the maps developed in job 1 above were delivered to the initial meeting of each province. During this quarter, the data CD and maps were delivered to subbasin summary writers at the initial meetings of the Columbia Cascade, Lower Columbia and Columbia Estuary provinces.</p>
Region	3 Provide StreamNet GIS coverages or other data (on request) to the entities conducting sub-basin planning. Assist subbasin planners with use of this data as needed.	<p>1) Approximately 350 maps of fish distribution, hatchery locations, and dam locations were created for use by the subbasin planners. These maps, in addition to being made available on the StreamNet ftp site and indexed via a series of web pages, were added to the StreamNet database and made available via the on-line query system.</p> <p>2) The project provided a set of custom maps and GIS data for a request from the Malheur subbasin report writer. This request included finding and formatting necessary GIS data, designing custom maps to illustrate this information in the subbasin report, and deriving spatial data for the report through GIS processes.</p>
WDFW	1 Continue to participate in discussions concerning data needs to support sub-basin assessment coordinated by the Regional Assessment Advisory Committee or other processes adopted by the amended Fish & Wildlife Program. Modify data plan and priorities as needed to be responsive.	There were no FY2001 meetings with RAAC or other Council staff regarding sub-basin assessment data needs.
WDFW	2 Coordinate data compilation from other WDFW Units as needed to respond to the above needs, using StreamNet data exchange experience.	Woodard coordinated data compilation with Vancouver Region 5 biologists for use in the sub-basin write-ups due in mid October. Chum and Chinook data for tributaries below Bonneville Dam were delivered to Ron Roler along with past write-ups on these tributaries. Ongoing consultation of historical data on these tributaries continues and data is delivered or manipulated as needed.
WDFW	3 Provide consultation services for WDFW wildlife and habitat data managers to assist them in meeting the above needs.	No requests for this assistance were received in FY2001.

Task 6.b Capture information from Sub-basin Planning

Acquire information developed during subbasin planning to update anadromous fish, resident fish, and wildlife data sets

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	1 Develop applications and procedures to update watershed assessment data during subbasin planning	Regional discussions have produced a final draft of subbasin assessment guidelines. We held a one-day workshop with ODFW, NWPPC, NMFS, and City of Portland staffs and other NGO representatives to discuss integrating OWEB and EDT tools into a single subbasin assessment methodology. We presented our results to the NWPPC in September. Actual progress on this Task has been minimal, however, awaiting NWPPC and state agreement on an approach to subbasin planning. The NWPPC created a budget "placeholder" for subbasin planning in FY02 at their September 2001 meeting. We anticipate progress on this Task in FY02.
ODFW	1 Evaluate Subbasin Summaries and other Subbasin Planning related documents related to Oregon, identify data which are not contained in StreamNet and adjust staff work plans to capture new data if appropriate and applicable.	This Task was dropped due to budget cuts.
WDFW	1 Provide data compilation, conversion, and analytical services in support of the subbasin assessment process, the NMFS Viable Salmon Populations model, and related NWPPC needs.	No requests for these services were received during this quarter.

Objective 2 Data Management and Delivery

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

Objective 2 Data Management and Delivery

Task 1. Database Management

Maintain functional database programs at the state and regional levels to make consistent 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 state levels, provide database management and administration necessary for accomplishing StreamNet Objectives, to include: 1) maintaining regional and state-level StreamNet data sets, 2) processing exchange data into the regional database, 3) transporting data to the SQL environment, 4) enhancing StreamNet database structures and capabilities, and 5) providing programming services to project participants to allow for efficient data entry and transfer.

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
IDFG	1 After beta testing, implement Fish Information System in IDFG StreamNet and IDFG Fishery Bureau	<ol style="list-style-type: none">1) We tested and implemented Redd Count and Hatchery Return data entry screens to the IDFG Fisheries Information System (FIS).2) We migrated historic hatchery return data into the new FIS data structure.3) We implemented a methodology to validate and correct problems in the hatchery returns and redd count data in the FIS. These errors included inconsistent RRNs, inability to georeference locations based on percent of reach, misidentified StreamNet reference numbers, and assignment of redd counts to an inappropriate trend based on location, species or time.4) We prepared a tool for the analysis and assignment of IDFG redd count transects to StreamNet trends. A tool to graphically display a time-series of trends and compare changes in the trends over time was included.5) We started to develop a methodology, data structure and interface for assignment of multi-stream trends (super trends).6) We began development of administrative routines in the FIS to translate data into StreamNet Data Exchange Format.7) We began development of hatchery facilities data entry and maintenance interfaces.8) Monitoring and administration of the joint IDFG/BLM fish data entry project was accomplished.9) We provided administrative and technical support to IDFG related to the Reference and Collection Permit modules of the FIS.

		10) We implemented data transfer methodology using Internet e-mail and XML data structures to send field data to headquarters. Administrative routines to automatically process data transfer and update the FIS database were included.
		11) We continued development of data presentation and analysis tools for access to the FIS database.
		12) We began planning for migration of historic Idaho Supplementation Studies data into the FIS, and expansion to all Idaho cooperators.
IDFG	2 Continue development and improvements to Fish Information System.	See work component 1.
MFWP	3 Update existing data sets as described in Task 1 and provide data to the regional StreamNet office in DEF. Provide data as sub-sets are updated rather than waiting for entire data to be complete.	Ongoing
ODFW	1 Provide state-level StreamNet database management / administration / development. Enhance StreamNet and ODFW database structures, interfaces, tools, and capabilities as needed.	1) We started the process of creating DLLs to encapsulate many of our commonly used database functions. This effort is to simplify and better manage the updating of data tables common to many of our databases. This approach will also prepare us for future use of IIS [Internet] and SQL Server services. This is strictly an alpha testing stage. 2) We created a small utility to map the fields from an Access database. The utility populates an Excel spreadsheet with the field name, type, and description of selected tables.
ODFW	2 Develop custom GIS products and database structures that help improve data management and transfer with ODFW staff.	1) We filled a request for a single routed western Oregon streams coverage. 2) We filled a request for distribution and barrier data from NMFS and also a consultant working on the Willamette Technical Recovery Team.
Region	1 Maintain and manage the StreamNet database so information / data are available internally to project participants and externally via Internet.	We performed optimization of the database server and software that were purchased in the third quarter continued.
Region	2 Add data submitted to the StreamNet regional office into the SN database within ~30 days of receipt from the project partners.	Routine database maintenance and data cleaning characterized the work done this quarter.

Region	3 Assist data-providing agencies with error checking of data sets.	<p>1) While preparing a presentation for the OFWIM meeting in November (see Objective 5, Task 4.b), several coding errors were found in the database related to georeferencing, methodologies, and data categorization. These errors were catalogued and brought to the attention of appropriate personnel so that they may be corrected.</p> <p>2) Error checking and coding assistance were performed on Habitat Restoration data that were received from Montana FWP.</p> <p>3) The source of some photographs in the database were investigated to assure that they are cited correctly. Photos from copyrighted sources were identified and cited correctly.</p>
Region	4 Coordinate database compilation between agencies, helping to ensure that data submitted are usable, scientifically sound, and consistent.	To assist with updates of ocean and inland harvest data, regional personnel assisted CRITFC personnel with understanding the new georeferencing conventions in use by StreamNet.
Region	8 Develop metadata for all spatial data sets posted to the SN GIS web page.	<p>1) We created metadata for Montana resident fish distribution layers (18 layers).</p> <p>2) We updated metadata for the PNW Reach File (hydrography) and the Oregon Lahontan cutthroat layer to reflect new information.</p>
Region	11 Based on direction from the Steering Committee, develop recommendations on the means to move the StreamNet database into an SDE-compatible format to provide enhanced interactive mapping and to develop necessary structures to serve data through SDE.	A new Web server to host the StreamNet web site was investigated and purchased during this quarter that will run newer software such as the latest version of the Internet mapping program ArcIMS, permitting the StreamNet staff to develop interactive Internet mapping applications. These applications will take advantage of SDE for speeding access to the data in the database.
Region	13 Ensure georeferencing of data is accurate and complete.	We reviewed and corrected, where necessary, georeferencing for stream and supercode referencing information in the database.
WDFW	1 Washington state data maintenance and exchange support services, including updated exchange format system, support for MS Access 97, and support for new data categories and fields.	<p>1) Brown researched WDFW's Stream and Lakes Fish Database functionality for O'Connor to assess how and when we can use this resource for StreamNet collections. Brown created a Paradox tool (named dms2dd.fsl) to convert longitude and latitude entries in Degrees, Minutes and Seconds to Decimal Degrees.</p> <p>2) Brown built a prototype tool to address the need for the managers of three similar-yet-not-identical natural spawner datasets to work separately while undergoing data integration. Throughout the quarter, Brown continued to meet with O'Connor and other WDFW managers to enhance and finalize this product.</p>

3) Per Sikora's request, Kinney gave her more feedback on how he'd like her to use queries or SQL to convey necessary changes when she exchanges data. Based on Kinney's feedback, Sikora also researched ODBC databases and concluded using SQL queries will serve both Kinney and Sikora's immediate needs.

4) Lensegrav documented Age table format issues by analyzing the StreamNet's existing 8/1/2001 USFWS age records and hatchery returns links as one first step in exchanging WDFW's age data in a standard form OR launching discussions about format issues. Before we advertise these issues Sikora must assess the remainder of the work that needs to be done. Meanwhile Lensegrav further refined his comments by studying the life-cycle issues.

5) Per Kinney and a data user's request, Sikora confirmed that missing trends had not been lost and were legitimately accounted for elsewhere. Sikora and O'Connor explained the compiler's need to have the flexibility to change trend numbers and users needed to re-run the logic of their query to insure they received any new trends.

6) Hudson reworked some of his data release and mapping programs after WDFW changed internal locations for GIS datasets and libraries. Township-based mapping routines for the Priority Habitats and Species (PHS) reports were improved considerably.

WDFW 2 Update existing data sets as described in Task 1 and provide data to the regional StreamNet office in Data Exchange Format (DEF). Provide data as subsets are updated, rather than waiting for entire data to be complete.

1) Kinney updated the Access database and posted the current snapshot of all StreamNet data (Aug2001 SN mdb) and Sikora immediately started using it to check the presentation of data WDFW has sent since the last update.

2) Again, the EndFTs included in StreamNet's Aug2001 Access database seem to include the measures submitted in WDFW's Oct. 2000 returns submission and not the Dec. 2000 submission. As of Aug 18, the true status still need to be resolved. Kinney is seeing one thing on his end and Sikora is seeing another on hers.

Objective 2 Data Management and Delivery

Task2. Data Plan

Update and maintain a project data plan that identifies 1) current data holdings at the regional level, 2) data items to be incorporated in the current contract period and in future years, and 3) expectations for data development and delivery from participating organizations within the current contract period

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	1 Provide input to the data plan to keep it responsive to subbasin planning and Framework needs and schedules.	We kept Steering Committee apprised of regional discussions, issues and developments concerning subbasin planning. It now appears that subbasin planning will actually begin the next fiscal year. Data priorities and schedules were discussed at Steering Committee meetings. They will be described in the FY02 work statement.
ODFW	1 Work jointly with other participants to modify elements of data plan or priorities based on needs arising out of sub-basin planning or other processes that drive Basin data needs through the amended Fish & Wildlife Program.	We investigated rumors of new issues being raised about the fin-clipping data we submitted to StreamNet. The rumors were unsubstantiated.
WDFW	1 Work jointly with other participants to modify elements of data plan or priorities based on needs arising out of subbasin assessments or other processes stemming from the amended Fish & Wildlife Program.	No requests for this assistance were received in FY2001.

Objective 2 Data Management and Delivery

Task3. Data Exchange Standards

Establish and maintain data exchange standards that ensure consistent format and content of data that originated from the multiple agencies and data sources in the basin. Included will be proposed and adopted data exchange formats, metadata and location look-up tables for specific data items as described under Objective 1. At the regional level, this Task will provide technical assistance regarding standard codes and exchange formats for Fish and Wildlife Program and ESA- related projects, and for applicable tribal data compilation activities. At the state level, this Task will provide similar technical assistance for state agency data activities applicable to StreamNet.

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	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.	We reviewed DEF issues as they were presented to the Steering Committee. We evaluated the Harvest DEF issues and determined they should be updated. A report will be sent to the Steering Committee after reviewing PSC, PFMC, ODFW, and WDFW harvest data collection and reporting protocols, but this will run into the next fiscal year.

IDFG	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. Potential new data exchange standards may include juvenile abundance, genetics, stream habitat, stream temperature and resident fish releases.	We provided review and input to the fish distribution data exchange format, especially the fish distribution data format.
MFWP	1 MFWP StreamNet will participate in the design, development and maintenance of standard codes and data exchange formats through involvement on the Steering Committee and technical work groups.	Still under review.
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. Potential new data exchange standards may include juvenile abundance, genetics, stream habitat, stream temperature and resident fish releases.	We submitted several requests to Regional StreamNet for new species codes, and incited a debate over the need for non-fish species codes.
WDFW	1 Compile and review the specific criteria used by participating agencies in describing fish distribution, use, or extent information, in order to find and adopt common standards among data providers.	O'Connor helped lead discussion at the August Steering Committee meetings to iron out the last concerns about the proposed new approach to both fish surveys (sightings data) and generalized fish distribution data (presence and use). While progress was made, some points that remained unclear to representatives from other states delayed acceptance of the new concepts until the next meeting (FY2002, probably October). Washington data will be ready to exchange once the new approach is finalized, as long as progress continues and doesn't back-track in an unexpected direction.
WDFW	2 Analyze Hatchery Returns exchange format and explore whether a second table (covering Spawning and Disposition data fields) is needed to more accurately meet the needs of the Artificial Production Committee.	1) After considering the other agencies' conflicting responses on WDFW's initial hatchery returns format proposal, O'Connor drafted a new proposal. Internally, Sikora reviewed the proposal and O'Connor and Sikora clarified more expectations in how separate fields and the two tables would relate to each other. Woodard also reviewed the proposal and met with O'Connor and Sikora to discuss the issues with WDFW's data. The discussion revealed that capturing some fields would sacrifice others.

		2) O'Connor scheduled contacts with the IDFG, USFWS, and ODFW representatives to learn their feelings on the necessity of each disposition field. Initial responses were very helpful, but scheduling difficulties prevented working with the IDFG representative until at least October. As a result, the new hatchery returns DEF proposal will not be circulated for final approval until November 2001 at the earliest.
WDFW	3 Finalize and distribute for adoption an exchange format for State Risk status (stock status) to provide information on sensitive salmonid stocks.	Work on an exchange format has been postponed until WDFW can update our SaSI database, both tabular and spatial components. See Objective 1 Task 1.i.
WDFW	4 Move toward complete adoption of LLIDs as the standard stream referencing code by reviewing and completing the RRN-to-LLID conversion, addressing supercode issues, and assuring that LLIDs are assigned to all locations where StreamNet data exist.	1) In late July Lensegrav prepared a list of potentially flawed stream names or routing in WDFW's GIS hydro layer for Hudson to review and correct as warranted. Lensegrav also established contact with the GNIS manager (Jennifer Runyon) to resolve questions about the confusing Plumbago Cr. area. 2) Sikora gave StreamNet the appropriate location codes to legalize the LocType 5 code assignments for the Washington release and harvest data compiled by PSFMC. Many of these codes were based on O'Connor's digitized points for select marine areas. 3) After receipt of the work proposed in the FY2001 Carryover Proposal, Sikora also researched the scope of addressing the existing LocType 98 or 99 trends.
WDFW	5 Provide metadata for tabular and spatial datasets according to guidelines adopted by the Steering Committee.	To alleviate concerns that the metaform.doc sent with all exchanges should not be mistaken as formal metadata, Sikora posed new potential names and Kinney described his preferred naming convention and how it addressed his needs.
WDFW	6 Construct a new data compilation and conversion system to provide data in MS Access according to the most recently adopted exchange format version. Begin exchanging data in MS Access form by winter, 2001.	See Objective 2 Task 1 Work Component 1 for details.

Task 4. GIS Data System

Establish and implement procedures for coordination of StreamNet-related spatial data activities among participating organizations, to include regular meetings and or other communication links among participating GIS specialists. Designate and maintain metadata format for spatial data to be used by StreamNet participants. Prepare map products in hardcopy and/or electronic format for use in Program-related aquatic resource policy, planning, and management. Provide for distribution of spatial data in GIS and tabular format and as GIS products.

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
IDFG	1 Maintain and enhance a geographic information system (GIS) related to regional and state-level StreamNet goals and Objectives.	1) We enhanced the Fish Tools ArcView application to project UTM coordinates to ITM (the standard projection in use by Idaho state agencies, including IDFG). 2) We loaded the Fish Tools ArcView application onto laptop computers for use by IDFG biologists in the field.
IDFG	2 Prepare data and map products from StreamNet data on request	We started making maps for subbasin summaries (see work component 1.6a.1)
ODFW	2 Maintain and enhance a geographic information system (GIS) related to regional StreamNet goals and Objectives (general maintenance, metadata development and maintenance, planning and coordination activities, etc.).	Ongoing maintenance continued. We upgraded both Desktop ArcGIS and Workstation ArcInfo from version 8.02 to 8.1 and installed ArcGIS patch.
ODFW	3 Prepare spatial data and map products in hardcopy and/or electronic format for use in Program-related aquatic resource policy, planning, and management.	We filled request for Willamette Basin maps of Winter Steelhead and Spring Chinook distribution in PDF format for policy discussion purposes.
Region	1 Maintain and enhance a geographic information system (GIS) related to regional StreamNet goals and Objectives.	We continued maintaining the StreamNet GIS system.
Region	2 Prepare GIS data and map products from StreamNet data.	We prepared GIS data and map products from StreamNet data, as needed. We received and responded to 35 requests from the public and prepared GIS data, maps, and other products. Requests were from a variety of sources including private citizens, environmental consulting firms, government agencies, educators, and students. We prepared more detailed map products for requests from the NWPPC and associates for use in reports, etc. This included a continued project to develop maps that illustrate the number and proportion of adipose clipped fish that were released from hatcheries in the Columbia Basin in year 2000, and a request from council staff to determine a complete list of mail zip code districts by NWPPC subbasin.

Region	3 Integrate the functioning of the GIS system with the StreamNet fisheries and habitat database, in support of the query system. Create cross tables and queriable maps used via the StreamNet web interface.	1) We completed the task to determine tributary flow information for all streams in our database, establishing a complete stream flow network at the 1:100,000 scale. 2) We added 323 new maps to the map catalog. This involved determining all relevant information needed for each map to enable their selection by the query system and formatting the maps into web-ready images.
Region	4 Direct users to other GIS resources when requests exceed StreamNet capability	We directed users to other GIS resources when requests exceeded StreamNet capability.
WDFW	1 Create approved reference documents for all exchanged spatial data sets. (See also Task 2.3, work component 5)	Burns began to compile metadata for the WDFW Bull Trout presence/use spatial data layer, starting with a PSMFC example involving a region wide coho layer. Hudson assisted on the parts of the metadata document that required technical GIS expertise.

Objective 2 Data Management and Delivery

Task5 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 Objective 1 and providing access to reference materials secured through Objective 3. Appropriate training on the use of the system will be provided through a combination of on-line help and in-person training sessions.

Objective 2 Data Management and Delivery Task 5 StreamNet Internet Site

Task5.a Maintain the StreamNet Client Server system

Project	Work Element	Accomplishments, Fourth Quarter, FY2001
Region	1 Maintain, upgrade as needed, and administer the StreamNet web servers.	A new Web server to host the StreamNet web site was investigated and purchased during this quarter, but not yet reconfigured or installed on the PSMFC network. In addition to faster processing, the new server will run newer software that was not possible to run on the old server, such as ColdFusion Server and the latest version of the Internet mapping program ArcIMS. These tools will eventually permit the StreamNet staff to revamp and enhance the web query system with new programmed capabilities such as returning XML output and allowing users to overlay various data categories on a single map. The new server will go online in January, 2002.

Task 5.b Enhance and improve the StreamNet website

Maintain and enhance components of the StreamNet home page and incorporate new features that complement existing Components

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	1 Work with subbasin planners to identify modifications and new uses which will make the website more useful to them	Work continued on developing web pages, but this is lower on the list due to lack of funding and staff time to accomplish Objectives.
CRITFC	2 Identify changes and new features which will improve delivery of Library services	We continued to work with improvements made throughout the year. We identified the need for more electronic copies of documents, especially those with fewer than 5 pages.
CRITFC	3 Work with regional staff to implement changes identified above.	1) We continued working with Karen McGill on website coordination. 2) We purchased HomeSite software to ease transitions.
ODFW	1 Recommend and/or take part in review of new products and features. Provide feedback on content, suitability, navigability and data currency issues.	We continued with modifications to various forms, code modules, etc. as part of the 24k Project Data Capture Tool development process. We Conceptualized a beta testing and a training approach. We initiated testing with real data compiled for the Clackamas basin. We worked toward building "Event Mapper" type of functionality. We worked with issues related to the management of barrier and dam identifiers. We updated the User Guide to reflect the most recent changes to the DCT. We loaded everything onto a laptop for training purposes and conducted a 2-day training session on how to install and use the DCT with 24K staff. After initial field use and testing, we finalized version 1.1 and summarized changes that were made from version 1.0 to version 1.1.
ODFW	2 Provide a link from the StreamNet website to available Columbia River fisheries information (including Columbia River Compact Action Notices, In-Season Updates, and Joint Columbia River Management Staff Reports and possibly in-season catch estimates) along with informational text to describe each link.	We completed and submitted informational text describing the link from the StreamNet website to the CRM website that updates Columbia River fisheries and stock status information. This text would be included with the link on the StreamNet Home Page to let users know what information is on this website.
Region	2 Continue to review the StreamNet website for clarity, organization and ease of use. Recommend and implement changes to maximize utility for people accessing the site to obtain information. Changes will include updating, replacing, and retirement of existing web pages, and archiving of all existing pages.	1) After a number of months in preparation, the StreamNet website was reorganized and given a new format. The completely revamped site was made functional at the end of the quarter. Emphasis in the new site was placed on improved organization and ease of use for people seeking information. All of the new pages were reviewed for content, accuracy and function of live links. Review of the site was requested of Steering Committee members prior to making the new site available.

		2) In FY 2000, it was brought to our attention by a WDFW biologist that several of the images on our web site may be copyrighted, and that the attribution to BPA that we provided was incorrect. During this quarter we obtained the book mentioned and confirmed that the several images are not public domain and were being attributed incorrectly to BPA. We therefore removed the images from the StreamNet web site. In addition, we contacted several people who had asked for permission to use those images and informed them that the images were copyrighted.
Region	3 Plan to enhance the website content by adding additional kinds of information that will support the Fish and Wildlife Program. Develop concept for increasing information by coordinating with regional data users	1) During the quarter, Regional personnel organized several independent water temperature data sets and provided links to them from the StreamNet web site. These data sets had been available from StreamNet but were not advertised. Making these data sets available is the first step toward an infrastructure for making available independent data sets via the StreamNet web site. 2) We begin compiling a list of all BPA-funded projects that generate resident fish data, per a request from the NW Power Planning Council. During the next fiscal year we will contact project sponsors to determine what resident fish data they may be generating, in what format the data are stored, and means to obtain and make the data available. 3) A location for 'Independent Data Sets' was added to the On-line data page as a location to deliver these kinds of data.
Region	7 Develop an on-line mapping application which may be used over the Internet by the public to view StreamNet data "layers" through interactive maps. This application will allow users to view and query StreamNet data spatially, generate reports and tabular or GIS data based on spatial queries, and create their own custom maps.	We created a basic ArcIMS application with the assistance of a contractor, Alsea Geospatial. The application allows the display and query of StreamNet data through a map interface over the internet to users without GIS software/expertise. We found that our existing hardware was not adequate to serve this application efficiently so have decided to delay further development and implementation of internet mapping applications until a new web server with greater speed and capacity is available and running (est. November 2001).
WDFW	1 Take part in review of new products and features. Provide feedback on content, suitability, navigability and data currency issues, especially issues related to providing static or dynamic map capabilities.	No formal feedback was provided this quarter. The "new look" Web site was announced ready for final review in late September, but staff review was not completed during this time period.

Task 6. 1:100,000-scale Hydrography

Maintain the 1:100,000-scale PNW hydrography for purposes of attaching StreamNet data. Coordinate with efforts to prepare a National Hydrographic Dataset (NHD). Develop a standardized method for incorporating lake hydrography and attribute information.

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
IDFG	1 Maintain the Idaho portion of the 1:100,000-scale PNW hydrography for purposes of attaching StreamNet data.	The 'Distribution Fish Tools' ArcView application was distributed to a few IDFG biologists to allow them to tag streams that need routing and incorporate them into the Fish Information System and StreamNet.
MFWP	1 Support the efforts of the NHD and convert Montana hydrography to NHD upon receipt.	Ongoing
MFWP	2 Enhance layer with LLID and stream level routing.	Completed
MFWP	3 Coordinate with NRIS in the QA/QC of the NHD for Montana including the development of a lakes layer (funding provided by the BOR for lakes).	Synchronization of the lakes layer with MRIS lakes database is ongoing.
ODFW	1 Continue to maintain the Oregon portion of the 1:100,000-scale PNW hydrography for purposes of attaching StreamNet data and for use in ODFW information management systems. Submit all modified PNW hydrography to PSMFC for inclusion in the regional PNW hydrography data.	We worked with Regional StreamNet staff to confirm some necessary changes to the 100k hydrography in the Silver Creek and Malheur basins.
ODFW	2 Participate in technical and policy discussions concerning efforts and activities that relate to or impact the PNW hydrography (NHD, OR/WA state framework physical data model, clearinghouse issues, data dictionary development, etc.)	We continued to address issues surrounding inconsistencies between the states in StreamNet's distribution data.
ODFW	3 Provide technical advice on hydrology routing and other issues including those related to working with higher resolution hydrography.	We provided technical support to ODFW staff working with the routed hydrography.
Region	1 Continue to maintain the regional 1:100,000-scale PNW hydrography.	1) Routine maintenance and management of the hydrography continued.

2) For each LLID in the 1:100,000 scale hydrography, StreamNet lists the water body into which the stream flows. Several errors were found in this list during the quarter, which resulted in circular references. These problems were corrected by regional staff. Also this quarter, regional staff began identifying why a fairly large number of LLIDs have no downstream link listed. Work began on these LLIDs to identify the stream, ocean, or lake that they flow into; a specific code was added for streams that run subsurface before entering another water body.

3) We participated as a contributor to the Hydro Framework Review process to develop a national hydrography standard format. We commented on the initial proposal to do this.

Region 3 Update and serve a regional web version of the 1:100,000-scale PNW hydrographic set from the StreamNet website.

We performed a complete update of all 1:100,000 scale PNW Hydrography files to the StreamNet web site. This incorporated recent significant revisions to the hydrography data in Idaho and Montana, and a series of smaller changes in Oregon. We updated online hydrography documentation to reflect recent changes and added an online edit log to allow users to view changes that have been made to the hydrography.

Region 7 Develop a complete cross-reference application between all streams in the PNW Reach Files and the NHD (National Hydrography Dataset) for Washington, Oregon, and Idaho to allow collection and distribution of stream-based data in both LLID and NHD formats.

We completed a draft version of a cross reference application for transferring data between the PNW LLID-based stream referencing system and the NHD reach-based referencing system and related GIS files. Work this quarter consisted of completing the last 30% of the rebuild of LLID routes onto the NHD linework. A database application was then programmed to use this cross reference to convert data between the two systems. Finally, complete help documentation and metadata were written for the project and a web site was designed to serve these products to the public. This was an EPA funded project. The GIS Specialist worked on this half-time during Quarter 4. This was possible because the StreamNet contract does not cover a full year for the GIS Specialist.

WDFW 1 Complete Steering Committee discussion about lake attributes useful to share in a regional database; determine support for a new data format.

Other participants are not ready to standardize lake attributes at this time.

WDFW 2 Compile, standardize, and exchange point, line, and polygon information for lakes stocked with fish that appear at 100K (or higher) resolution.

Further lakes work was delayed until hatchery facilities and hatchery returns data could be finalized and exchanged, based on StreamNet Project-wide priorities set in the May 31-June 1 meeting.

WDFW	3 Participate in technical and policy discussions concerning adoption of the NHD 100K framework for the Northwest. Review Washington state NHD datasets if funding is available.	Hudson performed preliminary assessment of the NHD for the Pacific Northwest with respect to transfer of our LLID-based hydro system to a system supporting the NHD model. Initial findings are very encouraging, and Hudson notified David Graves (PSMFC) that he will support conversion of WDFW's hydro to an NHD model when NHD 24K linework is ready for Washington state. 100K linework may be converted if delivery problems arise in the state's Hydro Framework project.
WDFW	4 Maintain Washington 100K HUCs by performing error fixes, addressing cross-border and cross-HUC incompatibilities, and related duties.	Hudson revisited cleaning and routing of 24K stream linework in WRIAs 24-30 (lower Columbia River) by using the newly-available 10-meter Digital Elevation Model (DEM) data as a back layer. This procedure seems to facilitate decisions for determining routes and connecting hanging streams, and may be a useful technique to apply to the 100K hydrography before conversion to NHD.
WDFW	5 Provide technical advice on hydrology routing and other issues related to working with higher resolution hydrography as needed.	Hudson reviewed and wrote a brief assessment of the Bureau of Land Management (BLM) criteria for densifying or simplifying hydro linework, which they applied to the 24K hydrography on BLM lands.

Objective 2 Data Management and Delivery

Task 7. Data Requests

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

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	1 See Tasks 1.1h, 1.6, and Objective 3	We answered requests for materials and information (see Objective 3).
IDFG	1 Continue to respond to requests for information from StreamNet database, including requests for fishery information that comes into the Idaho Conservation Data Center (Natural Heritage Program), other IDFG programs and personnel, and outside agencies and consultants.	1) We entered previous data request information into a new Data Request tracking database. 2) We completed 26 requests for location specific fish species lists and other data requests.
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.	A total of 6 data, 32 document, 5 map, and 20 'other' requests were answered during this quarter. A detailed list by requester and request type can be made available upon request. Also, 3,168 data downloads were made from the ODFW FTP site during this quarter.

Region	1 Respond within one day whenever possible to all user requests received via email, phone, or other medium. Typical requests received include help using the query system, complex data requests not easily done with the query system, and requests for GIS coverages and maps.	As in the third quarter, we responded to 62 requests from users during this quarter. Assistance was given to users from NWPPC, USFWS, NMFS, NMFS Northwest Fisheries Science Center, the USFS San Dimas research laboratory, USGS-BRD's Cook Lab, EPA, ODFW, CRITFC, Yakama Nation, the interagency PTAGIS and RecFIN systems housed at PSMFC, several universities in the US and Canada, Clackamas County Oregon, Chelan County PUD, several watershed councils, Gulf States Marine Fisheries Commission, nonprofit organizations, private consultants, conservation groups, and the general public. User request topics were varied and included help with the on-line query system, map requests, advice on initiating a GIS program, general fisheries and fish biology questions, error reports, help finding data, reports of dead internet links on the StreamNet web site, and suggestions for new Internet links. Fairly extensive help was given to several users of the water temperature database that was compiled by PSMFC and is now housed on the StreamNet web site. One user was searching for the original reference for the NWPPC's list of protected stream reaches.
Region	2 Fill requests for data not available via the web in an expeditious manner, with highest priority for people working for the NPPC's Fish and Wildlife Program. Requests from outside the Fish and Wildlife Program or participating agencies will be addressed on an 'as possible' basis.	The project updated the data in the compilation of adipose fin clipping data that was provided to the NW Power Planning Council. The CBFWA Anadromous Fish Committee prepared a response to the Council request for additional information, and StreamNet put together updated maps and data. These materials were prepared for presentation at the October Council meeting.
WDFW	1 Generate maps, data reports, and electronic copies of datasets as requested.	<p>1) Sikora provided WDFW release data citations to Chris Thomas.</p> <p>2) Hudson performed extensive work on his menu system for accessing spatial data from the WDFW fish and hydro datasets. Base layer choices with improvements include WRIA, WDFW district, and Public Land Sector. Place names, stream names (24K), and user-defined areas were all added as options. Bull trout mappers have the choice of mapping an entire WRIA or just the part of the WRIA where data exist (helpful for large WRIsAs with extremely localized fish data). Release options now include event tables or line layers, and an option to generate an 8.5 by 11 size user-customizable map is now under construction.</p> <p>3) The newly-completed statewide "Bull Trout 2001" layer generated a significant number of data requests, particularly for digital copies of the data (Arc export files of layers; event tables in INFO, Excel or MS Access).</p>

4) O'Connor and one of his PSC-funded staff (Brodie Cox) spent significant time responding to a request from NWPPC staffers concerning numbers of marked fish released from Washington Columbia Basin hatcheries in 2000. Lessons learned during this exercise include the importance of clear and precise communication of needs, the futility of expecting new data items to be automatically incorporated into under funded state data systems, and the importance of involving associated CBFWA representatives in a review cycle prior to submitting the results of such a large-scale data compilation to Power Planning Council staff.

5) Important data requests are reported under the task number pertinent to each dataset when requests reveal data issues or inspire different compiling approaches. Upon request, the details for each data request is also available from a detailed tracking file (internally stored on WDFW's server at S:\Fish\Groups\BDS\Streamnt\Requests\Datareq.db).

WDFW 2 Provide PRIORITY data support for subbasin assessments and other new elements of the NWPPC Fish & Wildlife Program.

No requests for this assistance were received during the fourth quarter of FY2001.

Objective 3 Library / Reference Services

Provide a full service regional library for fish (and to some degree wildlife) literature (published and gray), including documentation of all data in the StreamNet database.

Objective 3 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 source materials, Fish and Wildlife Program activities and reports, and other gray literature for access by regional scientists, agencies, interested parties, and other libraries.

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	1 Coordinate source material submissions for data compiled under Objective 1. Develop standards for document submissions	We received submissions from Project members. These will be cataloged in the First Quarter of FY2002.
CRITFC	2 Collect and catalog documents prepared by contractors (including final products published by BPA and draft documents suitable for public release) under the Fish and Wildlife Program. Work with Publications distribution for better publication notification and deposit system.	Library staff continued to catalog BPA contractor documents. Several gaps were identified and filled in with copies received from BPA. Other gaps are being left open in hard copy as the Publications Dept. identified those titles as electronic only. If we want hard copy, we will have to print out the documents from PDF files on the Web. A couple of these documents are over 100 pages.
CRITFC	3 Collect and catalog documents from the Council's Fish and Wildlife Program-related collection.	We continued cataloging ephemeral (gray & black) literature.
CRITFC	4 Collect and catalog additional books, journals, agency reports, gray literature, research reports, and documents that are applicable to management of the region's aquatic resources.	Over 529 records were added to the online catalog. At least 110 of these are periodical/newsletter titles that we did not previously have cataloged. Over 690 records were updated/upgraded from minimal level cataloging.
ODFW	1 Provide originals/copies of all documents and reports referenced in the compilation of new StreamNet data holdings, but not already housed in the StreamNet Library.	Referencing of new data holdings continued. We prepared a StreamNet Library submission of new references used to update trends and create new trends in accordance with the DEF protocol. Of the references to be submitted 12 were new and 5 were updates of existing materials. This will be ready for submission in early October.
ODFW	2 Update the set of historic (pre-1975) Oregon Fish Commission and Game Commission reports and provide to the StreamNet library as available.	This task was dropped due to budget cuts and the fact that the StreamNet Library is running out of physical space to hold new materials not linked to StreamNet trends.

ODFW	3 Update library bibliography of ODFW, Fish Commission, and Game Commission reports with historic and current publications and make the bibliography available for reference via StreamNet and ODFW websites.	We continued to perform numerous maintenance, update and correction activities to the InMagic bibliography, however the bibliography is not yet ready for online access because the database manager (who will develop this capability) continues to focus on higher priority tasks that went undone prior to his hiring.
WDFW	1 WDFW StreamNet will continue to collect documents used as source materials for data in Objectives 1 and 2. Documents will be assigned reference numbers and forwarded to the StreamNet library as per established SN guidelines.	Burns continued to update her contacts database for spatial distribution data references.

Objective 3 Library / Reference Services

Task2. Provide Access to Collection

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

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	1 Maintain an appropriate facility for the storage and public use of the physical collection.	Negotiations with Ashforth Pacific and the Commission continue for the Library growth. Key areas of needed space are client seating, map reference and more shelving for the growing collection.
CRITFC	2 Catalog, organize and maintain the collection for appropriate on-site use.	We have been shifting materials for necessary space in a few areas. Backlog materials are being cataloged for inclusion in the regular collection. StreamNet materials continue to be integrated and records combined to limit confusion when searching for materials.
CRITFC	3 Provide access to the StreamNet Library Catalog.	In-house computer terminals and electronic media were maintained. We continue to develop web access to the catalog. We began working on the ability to add images to the online records. Began working on the ability to add images to the online records.
CRITFC	4 Develop a schedule for regular updates of the reference table.	We began working on separate database for the StreamNet reference documents. Import and export functions need to be fine-tuned for easier information sharing between the Access/SQL and InMagic databases.
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.	1) No effort was made this quarter regarding the library software because the Database Manager continues to focus on higher priority tasks that went undone prior to his hiring. 2) In an effort to refurbish the space that has been provided to the library, we did a preliminary web search for library improvement grants and talked to Tim Kopf, the Information and Education Coordinator for the Benton Co. Conservation District about funding sources. Several grant requests will be mailed in the coming months on behalf of the library.

Objective 3 Library / Reference Services

Task3. Improve Electronic Access

Enhance the online capabilities of the StreamNet Library, including catalog access via the internet and an electronic archive of key Columbia Basin documents.

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	1 Manage and maintain the Library catalog server	We moved the server behind a firewall for security purposes, and continued to work with Regional staff for synchronicity.

Objective 3 Library / Reference Services

Task4. Library Services

Manage the StreamNet Library and provide library services to the StreamNet user community and the general public.

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	2 Assist users to locate information by providing reference, referral, and computer based search services.	We filled over 150 requests for clients. These requests included the following types: Locating materials for Administrative records. Developing bibliographies for summer chinook and steelhead. Developing bibliographies for the Lower Columbia and Willamette subbasins and their tributaries.
CRITFC	3 Provide document delivery services, including inter-library lending and borrowing.	We lent 30 items to other libraries. These included libraries in Mexico, California, and the National Agriculture Library.
ODFW	1 Respond to requests for ODFW documents and other source materials.	We provided 335 hardcopy documents and 8 electronic documents to 37 individual users during the quarter.

Objective 3 Library / Reference Services

Task5. 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>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	3 Coordinate with users, agencies, and regional libraries to improve services and avoid unnecessary duplication. Perform a needs assessment for the Library.	We completed the addition of holdings records to online union list on OCLC. This will enable other libraries to know at a glance exactly what we have in our periodical literature.
CRITFC	4 Facilitate communications between subject related library service providers. Coordinate concurrent Library Needs workshop with Data Needs workshop (Task 4.7).	The Librarian was accepted as a presenter at the OFWIM meeting in November 2001.

CRITFC	5	Maintain presence in related Library groups (i.e. IAMSLIC, NRIC) to provide access to knowledge on Best Management Practices for libraries and current awareness of subject-related materials.	<ul style="list-style-type: none"> 1) The StreamNet Librarian joined OFWIM. 2) The library renewed membership in NRIC. 3) The Librarian attended the annual NRIC conference.
ODFW	1	Coordinate with the Oregon State Library system to enhance access to published periodicals, journals, and other documents for StreamNet users.	<ul style="list-style-type: none"> 1) We distributed flyers to users in remote areas describing how they can sign up for electronic access to the State Library to direct requests for published articles. 2) We signed 10 users up for access to the State Library during in-person visits to the ODFW Library.

Objective 4 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 4 Services to Fish and Wildlife

Task 1 Monitoring and Evaluation

Assist in the development of products that contribute to the monitoring and evaluating (M&E) of Fish and Wildlife Program effectiveness. Specific area of involvement will include:

Objective 4 Services to Fish and Wildlife

Task 1 Monitoring and Evaluation

Task 1.a M&E Participation

Participate in Program-related monitoring and evaluation work groups

Project Work Element

Accomplishments, Fourth Quarter, FY2001

CRITFC 1 Assist basin wide efforts to develop an R/M/E plan consistent with the regional Framework

We conducted a one-day workshop with ODFW, NWPPC, NMFS, tribal, City of Portland staffs to explore the feasibility of coordinating OWEB and EDT subbasin assessment methods. This appeared feasible after the first workshop and follow-up meetings were scheduled to address specific issues. When the methods are coordinated, we will attempt to extend the OWEB habitat monitoring approach to fish and wildlife populations during the subbasin planning process.

IDFG 1 Participate in discussions concerning data needs to support processes adopted by the amended Fish & Wildlife Program for Monitoring and Evaluation.

We participated in discussions at Steering Committee meetings.

Objective 4 Services to Fish and Wildlife

Task 1 Monitoring and Evaluation

Task 1.b Evaluation

Periodically re-evaluate the StreamNet data plan to ensure consistency with M&E needs

Project Work Element

Accomplishments, Fourth Quarter, FY2001

CRITFC 1 Keep Steering Committee apprised of regional R/M/E plans and needs

Presentations are made regularly to the Steering Committee when new information or action occurs at the regional level.

Objective 4 Services to Fish and Wildlife Task 1 Monitoring and Evaluation

Task1.c M & E Reporting

Prepare reports and data products that illustrate key M&E topics

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	1 Assist Steering Committee to identify useful M&E products that StreamNet can produce at regular intervals	No activity this quarter. Emphasis was placed on updating key data sets.
ODFW	1 No work planned but we are willing to adjust work plans to address amended Fish and Wildlife Program needs.	This Task was dropped due to budget cuts.

Objective 4 Services to Fish and Wildlife

Task2. Watershed Projects

Provide data and data services to Fish and Wildlife Program-sponsored watershed planning and assessment projects

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	1 Assist subbasin planners to develop monitoring and evaluation activities for watershed projects that will integrate smoothly with StreamNet databases (cost sharing)	Subbasin planning activities have yet to begin. No activity this quarter.

Objective 4 Services to Fish and Wildlife

Task3. Stock Assessment Projects

Provide technical assistance to the Upper Columbia Basin and Upper Snake River Basin resident fish stock assessment projects, including a) identification of regionally consistent data exchange standards and b) Internet access to project data and other information. Specific actions will be defined in consultation with stock assessment project managers

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
ODFW	1 Provide assistance as needed.	This Task was dropped due to budget cuts.
WDFW	1 Provide spatial, tabular data standardization and exchange consultation and assistance to participants in the BPA-funded Joint Stock Assessment Project (JSAP).	JSAP consultation need was limited this fiscal year due to turnover in project leadership at Kalispel Tribe and a subsequent delay in scheduling steering committee meetings. O'Connor provided copies of data records from the WDFW Stream Lake and Fish Database (SLFD) pertinent to the Blocked Area of NE Washington to Jim Lemieux, project data manager. O'Connor also obtained copies of contemporary sampling data formats and location coding protocols from the WDFW JSAP staff to review for conversion to StreamNet exchange format in 2002.

Task4. Service to Other Fish and Wildlife Program Projects and Activities

In consultation with CBFWA, the Council, and BPA StreamNet will provide technical assistance and data services to select Program projects

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	1 Collaborate with CBFWA, NPPC, and other fish and wildlife programs in the Columbia Basin to identify and provide technical and other services to the Fish and Wildlife Program	We discussed possible StreamNet services with NWPPC and NMFS staffs. Although specific services are not yet fully defined, NWPPC staff are expecting StreamNet to provide fishery information to the subbasin assessment process and provide other as yet undefined services to subbasin planners. I feel the project has particular strengths in the areas of 1) providing existing information, 2) providing data management tools and assistance to planners, and 3) capturing new information developed during the new round of subbasin planning.
IDFG	1 Provide technical and other services to other FWP projects occurring in IDFG.	We worked with Idaho Supplementation Studies project to implement the Juvenile Trapping and Redd Count modules of the Fish Information System. IDFG biologists used these applications to enter data and submit to our database. See work component 2.1.1 for details.
ODFW	1 Provide technical assistance and data services to F&W Program projects as needed and adjust work plan priorities accordingly.	No other technical assistance was requested this quarter.
ODFW	2 Produce pre- and post-season harvest and stock status reports for Columbia River fish runs and fisheries and make reports available via either via the StreamNet site directly or via the ODFW Columbia River Management site with a link from StreamNet.	1) We continued progress on the Status Report on Columbia River Fish Runs and Fisheries, 1938-2000. 2) We continued progress on the 2000 Lower Columbia River and Buoy 10 Recreational Fisheries report. 3) We completed 1 Joint Staff Report, 10, 10 Columbia River Fact Sheets, and 16 Columbia River Action Notices. 4) All reports, Fact Sheets, and Action Notices completed during this report period were posted on the ODFW/CRM website.
ODFW	3 Draft a summary of real-time data services that can be provided as well as a description of how these services differ from current data services provided in the Basin.	We completed and submitted a document describing the new format for our website to better incorporate real-time data for use by fishery managers throughout the region. The document describes what will be included in the website. The website will be expanded to include additional data of interest to regional fishery managers that is not included on the current ODFW/CRM website.

Region	1 Work with Fish and Wildlife Program projects throughout the basin to assist with providing information needed by the projects and acquiring and distributing information generated by the projects.	1) BPA is interested in capturing the information generated by the fish and wildlife projects it funds. The Regional Fisheries Biologist discussed with BPA personnel the utility, strengths, and weaknesses of GIS and GPS in determining the locations of work sites, so that data may eventually be captured in StreamNet or other regional databases. 2) Work continued on developing data on the mass adipose marking of hatchery salmon and steelhead to meet a data request from the Power Planning Council. Errors in the preliminary data were identified and corrected. A presentation of the updated adipose clipping data was prepared for delivery at the October Power Planning Council meeting.
WDFW	1 No work planned; available as needed and as prioritized.	No requests for services were received during FY2001.

Objective 4 Services to Fish and Wildlife

Task5. 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>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
Region	1 Maintain the existing Protected Areas database.	The Protected Areas data continued to be available on the StreamNet website. A plan was developed to tie these data to the hydrography through assignment of LLID stream identifiers. The work will be done during Q1 of FY 2002.

Objective 4 Services to Fish and Wildlife

Task6 Basin Data Needs

StreamNet will provide information and assistance to regional reviews of data management projects and data management needs conducted by the PPC, ISRP, ISAB and other regional entities

Objective 4 Services to Fish and Wildlife Task 6 Basin Data Needs

Task6.a Data Management Needs

Work with regional entities to develop an analysis of regional data management needs, challenges and capabilities

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	1 Participate on Council advisory committees to identify data needs and data gaps	The RAAC EDT validation projects administration was approved by the NWPPC. Actual contracts and work may be in place by the end of this quarter. We will work with both RAAC and the Steering Committee to capture relevant information into the StreamNet system.

ODFW	1 Assist as needed with identifying data needs of the amended Fish and Wildlife Program	We provided project direction, support, and supervision for the Viable Salmon Population data compilation effort. Also initiated efforts to secure additional funding for the VSP data compilation and database development effort.
WDFW	1 Participate in regional discussions of data needs and data management strategies in support of the newly amended Fish and Wildlife Program.	1) O'Connor reviewed and provided both written and verbal comments on the SAIC work plan proposal to both CBFWA and NWPPC staff in Washington. SAIC proposes a Basin-wide review of information management systems and information needs through a series of user interviews and an examination of existing systems. 2) O'Connor reviewed approved Columbia Plateau-North projects for data needs and impacts on existing WDFW staff that StreamNet can help address.

Objective 4 Services to Fish and Wildlife Task 6 Basin Data Needs

Task 6.b Data Needs Workshop

Promote organization of a regional 'data needs workshop' to establish regional data / information needs and priorities and to develop recommendations for roles and responsibilities for acquiring and providing the needed data / information

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
All		No work was done on this task this quarter.

Objective 5 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 5 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>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	1 Provide normal supervision of StreamNet Library staff and the CRITFC database Programmer.	1) Normal supervision of staff was provided as required. 2) A new work plan and budget information were discussed with the Steering Committee and provided to the project manager. 3) Staff performance evaluations were completed by the end of the quarter. COLA raises were implemented on September 1 as directed by our Commission and Executive Director. Budget adjustments were made as necessary. 4) The FY01 contract was closed out.
CRITFC	2 Produce quarterly reports within 1 month after the end of each quarter	All quarterly reports were completed.
CRITFC	4 Participate in Steering Committee meetings	One Steering Committee meeting was attended this quarter.
CRITFC	5 Collaborate on developing a final detailed Statement of Work for the current contract and for the coming year	Provided detailed budget and work statement for FY02 as per Steering Committee discussions and NWPPC policies.
FWS	1 Represent FWS in Steering Committee meetings	Pastor attended the August Steering Committee Meeting.
FWS	2 Produce quarterly reports w/in 30 days of quarter end	Third quarter activity report was submitted.
IDFG	1 Participate in Steering Committee activities. Manage all aspects of StreamNet in IDFG, including budget, personnel, and work management. Products will include: Annual IDFG StreamNet work statement; Quarterly and annual reports of progress; and,	1) The Project Leader conducted all parts of StreamNet management for IDFG, including progress reports, budget management, work management, and supervision. 2) The Project Leader participated in Steering Committee activities.

ODFW	1 Administer all aspects of the project for Oregon, including budget oversight, personnel, staff work plans, project implementation and coordination, Steering Committee and technical issues meeting attendance.	<ul style="list-style-type: none"> 1) The Project Leader attended the August StreamNet Steering Committee meeting in Gladstone. 2) We submitted a revised request-to-hire, position description, and physical factors paperwork for our vacant GIS Analyst position. The position was announced on September 17.
ODFW	2 Participate/attend appropriate training and conferences in order to enhance technical skills which are relevant to StreamNet's mission.	One staff member took a free Sigma Plot computer class at OSU and one staff member cross-trained on the Chinook research and monitoring project in the Nehalem basin.
ODFW	3 Produce and provide a Statement of Work, budget proposal, quarterly reports, and annual report for Oregon.	<ul style="list-style-type: none"> 1) We submitted the 2001-1, and 2001-2 Oregon StreamNet quarterly reports to Regional StreamNet. 2) We submitted the FY 2000 Inventory Report and Annual Report. 3) We developed and submitted a FY-2002 budget proposal for Oregon. 4) We developed and submitted a justification for this year's Oregon StreamNet cost overrun. 5) We submitted a list of products and needs that could be addressed using StreamNet carryover funds that recently became available. 6) Staff submissions were incorporated into the third quarter Report. 7) We developed and submitted the CRM budget for FY 2002 8) We revised the CRM work plan for FY2002 9) The CRM 2001-3rd Quarter Report was completed.
Region	1 Provide oversight for the StreamNet Program	Normal program administration continued during the quarter. Specific accomplishments included fiscal year end budget adjustments, prioritization of work Objectives for next year, and finalization of the FY 2002 work statement
Region	2 Supervise StreamNet regional staff. Provide training opportunities for project staff to further their technical development and capabilities.	<ul style="list-style-type: none"> 1) During this quarter a StreamNet programmer was recruited. Greg Wilke was hired and began duties on September 17. Training of Greg continued through the end of the quarter in order for him to learn the web query system he will be responsible for, and associated information. In addition to information related directly to his programming responsibilities, Greg was given an overview of fisheries management, fisheries management in the Columbia River basin, types of fisheries data, fisheries data storage and management in general, the role of StreamNet in regional fisheries management, and his role within StreamNet. This background understanding will be very useful as he learns the requirements of his position in order to best provide the services needed. 2) A learning experience was provided for the non-biological regional staff in field data collection methods by participation with ODFW staff in spawning ground surveys.

Region	3	Develop program budgets and manage / monitor expenditures	Year end budget tracking was conducted. The Program Manager worked with BPA regarding year end expenditures.
Region	6	Coordinate with regional management agencies / entities and data using entities to determine information and data service needs and to assure rapid response to reasonable data and information needs.	StreamNet coordinated with the state, tribal and federal agencies involved in stocking in the Columbia Basin to obtain data on adipose clipping of hatchery salmon to meet a request for information from the NWPPC.
Region	7	Produce quarterly reports within 1 month after the end of each quarter	The report database was improved to speed production of quarterly reports. Significant progress was made, but the second and third quarter reports did not get formally released until the first quarter of FY2002.
Region	8	Produce final report within 2 months of the end of the contract period	The annual report was delayed in FY 2001 due to competing work priorities. The report database was improved during the fourth quarter and the FY 2000 annual report was completed during the quarter. The improved report database should improve the speed with which reports are completed in the future.
Region	9	Manage and serve the StreamNet Steering Committee through: Organizing and conducting committee meetings at least quarterly; Calling additional meetings as needed to address timely issues; and, Actively consulting with Steering Committee on program activities	The regional office hosted the summer Steering Committee meeting in Gladstone on August 7 and 8. Among the issues addressed were initial demonstration of what ArcIMS interactive internet mapping can do, and review of the FY 2000 Annual Report. Based on lessons learned in organizing the FY 2000 Annual Report, a new approach to defining and organizing work activities for the FY 2002 Work Statement were discussed and adopted.
Region	10	Prepare a project proposal and Statement of Work for FY2002.	The organization and prioritization of tasks for the FY 2002 Statement of Work were modified as part of the summer Steering Committee meeting. The Objectives were changed to separate the development of specific data sets into two tiers: top priority and other priority, and these became Objectives One and Two, respectively. Distinctions between separate Objectives for anadromous species and resident species were dropped, with these details to be handled within the individual jobs under each Objective and Task. All sub-Tasks were eliminated to provide a more succinct and understandable organization. Some sub-Tasks were combined, while others became individual Tasks. A new template was written to facilitate entry of each project's work elements into a database developed in the new format. And, a new report format was written so that the work statement can be easily printed. Most project had submitted their budgets and work components by the end of the quarter, but the finished work statement was not submitted to BPA formally until October.

WDFW 1 The WDFW StreamNet state coordinator will participate in all Steering Committee and StreamNet Project management activities. 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) Sikora reviewed Schmidt's initial draft Annual Report for FY2000 and provided extensive feedback. O'Connor attended the August 7-8 Steering Committee in Gladstone to complete fish distribution/use data discussions, resolve more budget issues (including unspent FY2001 funds) and make plans for the upcoming Rolling Review. Following the meeting, O'Connor and Sikora reviewed and commented on the FY2001 Carryover proposal and O'Connor finalized a proposal to spend extra EPA monies. For the FY2002 proposal, Sikora also projected potential wage increases for Smith and Lensegrav in FY2002.
- 2) O'Connor created a brief paper, "Strategy for the Upcoming Program Review", based on notes taken during the August meeting. As part of that Strategy, O'Connor and Sikora generated and circulated a "starter" list of White Paper topics appropriate for assignment to StreamNet staff.
- 3) O'Connor performed the usual staff and project management tasks during this period, including managing the FY2001 budget to near-zero balance, submitting the annual equipment inventory report, participating in the annual personnel evaluation for the Project Manager, and generating work plans and budgets for proposed extensions to StreamNet contract work, including one for EPA funds and one for FY2000 Carry-over funds.
- 4) Early July, Sikora drafted a work plan for Hudson's StreamNet priorities. O'Connor, Hudson and Sikora met in July and again in August to discuss potential issues and throughout the quarter continued coordinating priorities and work. Sikora worked with Woodard to revise his monthly or tri-monthly reporting style, relating a cohesive story of Smith and Woodard's work and ignoring the Objective, Task and Work Component numbers. Lensegrav updated the Access database with Smith, Woodard and his own third quarter work and Sikora synthesized the descriptions of their work with her own.
- 5) This year performance evaluations included several extra forms. On July 31, Sikora attended Woodard's performance evaluation of Smith and conducted Woodard's evaluation. Sikora then met with Kinney to discuss StreamNet issues. O'Connor evaluated Sikora on Aug 21 and Brown on Aug 24 with Sikora in attendance. Later in August, O'Connor evaluated Burns and Hudson, and submitted all required paperwork to WDFW. Planning issues were discussed in all the meetings. O'Connor also worked with Sikora and WDFW Personnel on finalizing the outcomes of a re-allocation petition for her position.
- 6) Smith began an on-line statistics class to improve her escapement data work and Sikora researched how she could file for class reimbursement. Lensegrav attended a ESRI GIS open house to preview new GIS software and assess relevance to future GIS work.

7) Throughout the FY, all staff kept current with their FY2001 activity reports and Lensegrav built a report to show all quarter activities (first - fourth) together to maximize space efficiency. Sikora thoroughly reviewed Schmidt's draft document of the first quarter report, noting the draft was merely an export of our Q1 Access database entries so future quarterly document reviews will not be necessary. The WDFW Third Quarter Progress Report was finalized and submitted to PSMFC. Sikora and O'Connor prepared the WDFW StreamNet FY2002 Statement of Work (SOW) and gave Schmidt feedback on corrections needed or issues of accommodating work. Extensive SOW comments were forwarded in early June (immediately after the late May Steering Committee meeting) and in August (following the early August meeting), mostly addressing the significant revamping proposed by Schmidt and the Steering Committee.

8) All WDFW staff increased their virus detection routines and a WDFW systems manager tailored the PC's to minimize the likelihood a virus would attack or spread (i.e. by removing Microsoft Outlook).

Objective 5 Project Management / Coordination

Task2. Participate in Fish and Wildlife Program Development Activities

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 aimed at identifying ways that StreamNet might more effectively contribute to the Fish and Wildlife Program (FWP). 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>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	1 Participate in appropriate coordination meetings with BPA, CBFWA, the Council, ESA officials, ISAB/ISRP, and/or staff and management of participating organizations aimed at identifying ways that StreamNet might more effectively contribute to the Fish and Wildlife Program.	Discussions regarding StreamNet role under the Fish and Wildlife program continued with NWPPC staff and contractors and with the RAAC group. NWPPC staff is much more receptive to a significant role for StreamNet in subbasin planning efforts. Specific have yet to be completely specified, and discussions will continue.
CRITFC	2 Where appropriate, 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, with particular emphasis on subbasin planning and R/M/E issues.	The Council released final draft guidelines for subbasin assessments and subbasin planning. These provide significant opportunities for defining a StreamNet role. CRITFC and ODFW staff developed a work statement and budget to implement subbasin planning in Oregon, defining specific roles for StreamNet to 1) provide information to subbasin groups, 2) assist subbasin groups with a variety of data management services, and 3) capture new information, including the EDT data sets, developed in this round of subbasin planning.

ODFW	1 Participate in activities aimed at identifying ways that StreamNet might more effectively contribute to the Fish and Wildlife Program, including participation in Fish and Wildlife Program advisory groups and applicable regional policy, planning, and management forums.	We assisted in drafting a letter requesting data from ODFW folks. Attended the July 11 WLC Technical Recovery Team meeting in Portland at the Bonneville Power Administration office. Provided input and support to the VSP database development effort.
Region	1 Participate in appropriate coordination meetings with BPA, CBFWA, the Council, ESA officials, ISAB / ISRP, and/or staff and management of participating organizations aimed at identifying ways that StreamNet might most effectively contribute data / information and support to the FWP.	The Program Manager participated in several Anadromous Fish Committee meetings. The data developed with state and federal agency input on adipose clipping were reviewed through the AFC to assure accuracy. Input for presentation to the Power Planning Council regarding the adipose clipping data request was solicited through AFC and incorporated in the presentations to the Council.
WDFW	1 No specific work planned; available as needed for coordination	See related work under Tasks 1.6, 2.2, 2.7, 4.2a, 4.7a.

Objective 5 Project Management / Coordination

Task3. Coordinate with Other Related Activities

Maintain communications between StreamNet and other applicable regional and state-level fish and wildlife activities to identify means for collaborative data collection, storage, and dissemination. Collaborative data activities will target 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 agencies. Collaboration with coast-wide and private data collection/compilation efforts will be pursued when this supports overall project goals. Areas of particular emphasis are 1) participation in Fish and Wildlife Program monitoring and evaluation activities, and 2) exploring opportunities for integration of StreamNet data exchange formats into Fish and Wildlife Program contract terms and conditions.

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	1 Seek closer cooperation, coordination, and consistency of information management practices and standards between salmon restoration programs in the Columbia Basin (e.g. Mid-Columbia PUDs, LSRCP) by participating on appropriate work groups.	No activity occurred this quarter. It is most likely that coordination of information management across programs (e.g. the Power Act, Forest Service, and LSRCP) will surface during subbasin planning which will be most active during the next two fiscal years.
ODFW	1 Establish / maintain working relationships with data collection projects within and outside ODFW to promote efficient and beneficial data sharing.	1) The project leader attended a meeting at OWEB to discuss the creation of an OWEB - Oregon Plan Information Manager position. 2) The project leader attended the N. & S. Willamette Watershed District meeting where data collection activities in the basin were presented and discussed.

Region	1 Coordinate the efforts of the StreamNet project with other data compilation projects occurring in the region. Address issues of data gaps, duplication of effort, data set integration, georeferencing standardization, scientific rigor, management needs, etc.	<p>1) StreamNet and Xerces Society personnel developed a project proposal for creation of a regional aquatic macroinvertebrate database. This project, if funding can be obtained, will add macroinvertebrate data to StreamNet and produce a region-wide program of data reporting. This system would ease flow of required data to EPA and would allow aquatic managers and researchers to quickly and easily obtain data of interest in a standard format. Several possible sources of funding for this proposal were identified, and a greater effort to locate funds will be undertaken in FY2002.</p> <p>2) StreamNet personnel provided advice to personnel from California Department of Fish and Game with their efforts to produce a standard hydrography layer with LLIDs for the state of California.</p> <p>3) Because much of StreamNet's hatchery release data are obtained from the coded wire tag database, the Regional Fisheries Biologist discussed georeferencing of hatchery releases with the CWT program manager. It was learned that many of the locations are not well defined in the CWT database due to the data submitted to them. Options for eventually correcting this problem were discussed.</p>
WDFW	1 Maintain working contact with Washington Hydro Framework partners and USGS Regional Ecosystem Office staff to promote effective sharing of hydrology base layers and attached fish and habitat data.	Hudson attended two state Hydro Framework meetings and a meeting of the SWIM-TAC Hydro Action Team to advise on testing of hydro check-in and check-out procedures. These groups work to coordinate hydro layer work among the state and federal agencies of Washington and Oregon. As current subject material is quite technical, Hudson is attending these meetings in place of O'Connor.

Objective 5 Project Management / Coordination

Task4 Prepare Public Information Materials.

As needed, produce public information materials including updated versions of the project brochure, computer demonstration materials, and/or other appropriate materials

Objective 5 Project Management / Coordination Task 4 Prepare Public Information Materials.

Task4.a Prepare Public Information Materials

As needed, produce public information materials including updated versions of the project brochure, computer demonstration materials, and/or other appropriate materials

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	1 Produce and update a Library brochure and Access guide listing services, hours and cost recovery fees.	Brochure was distributed at a Tribal Water Quality Conference at Kah-Nee-Ta Resort.

ODFW	1 Write informational articles on StreamNet data activities for natural resource oriented publications and give oral presentations to relevant user groups.	<p>1) We prepared and gave a presentations on the ODFW Fish Screening and Passage Program Database to the Fish Screening and Passage Task Force. A representative from NMFS indicated that they'd be interested in using the database to capture like data in Washington.</p> <p>2) We wrote a rough draft of an article on the Incidental Fish Observation database for ODFW's internal bimonthly publication, "Inside Tracks".</p> <p>3) We worked with Fish Screening and Passage staff to draft a short article on our database development efforts for them.</p> <p>4) We developed Willamette basin fish distribution maps and finalized the Sport Fish Restoration report and submitted it to ODFW Fish Division.</p> <p>5) We drafted an article on Spreadsheet vs. Database utilities for biologists, to be posted on the web sometime in the future. We also drafted another "Inside Tracks" article about who NRIMP is and how we are involved in StreamNet.</p>
Region	2 Create improved web page help files to assist users in understanding and making better use of StreamNet information.	<p>During the quarter we considered how to help users better understand the contents of the StreamNet on-line database, the work done by StreamNet, and the products and serviced provided by StreamNet. A series of white papers was suggested that would explain these various aspects of the StreamNet project. Several white papers were suggested, and one was developed as a potential template. This template white paper was a description of the habitat restoration projects database held by StreamNet. If feasible, we plan in the future to create a white paper for each of our data types, in order for users to better understand the data available to them.</p>

Objective 5 Project Management / Coordination Task 4 Prepare Public Information Materials.

Task4.b Participate in informational meetings/conferences

Participate in appropriate state, regional, and national educational and professional conferences, including, where applicable, giving presentations, preparing poster session materials, and contributing to conference proceedings.

<u>Project</u>	<u>Work Element</u>	<u>Accomplishments, Fourth Quarter, FY2001</u>
CRITFC	1 See Task 3.5	An abstract was accepted for presentation of a paper at the NRIC conference in October.
IDFG	2 Serve as chairman and organizer for the 2001 ArcInfo User's Group Conference scheduled for October 2001. catering, scheduling, registration and advertising.	The Project Leader organized all aspects of the 2001 Northwest GIS User Group Conference, including facility planning, program development,

ODFW	1 Participate in appropriate meetings & conferences as opportunities arise to highlight StreamNet programs & data	<p>1) Staff attended a presentation/demonstration by Shaun McKinney on the USFS Natural Resources Information System - Water Module. No commitment was made on behalf of StreamNet to exchange information at this time, but OWEB's Restoration Tracking Project and ODFW's Aquatic Inventory Project have agreed to give some of their data to Shaun so he can integrate it into his system as a demonstration of NRIS's utility.</p> <p>2) We attended a meeting in Hood River to discuss and develop a process for prioritizing culvert replacements.</p>
Region	2 Represent StreamNet in relevant state, regional and national meetings and conferences.	<p>During the quarter topics were developed for presentations at the November 2001 meeting of the Organization of Fish and Wildlife Information Managers, which will be held in Portland, OR. The Regional Fisheries Biologist will present an analysis of the quality of data for fisheries management decisions that exist in the StreamNet system; the Program Manager will give two presentations, one on strategies for developing data at a regional level from independent projects and another on obstacles to establishing standardized field sampling methodologies. Drafts of these preparation were completed this quarter.</p>
WDFW	1 Participate as opportunities arise to highlight StreamNet programs & data	<p>O'Connor agreed to give a presentation on Habitat Restoration Project data standards and issues (based on StreamNet Project experience) at the annual meeting of the Organization of Fish and Wildlife Information Managers (OFWIM) in November 2001.</p>