

StreamNet: EPA Contract Update

November 18, 1998

Task 6.1 SALMONID DISTRIBUTION

The principle objective of this task is to increase the accuracy and extent of the current distribution files. This will be accomplished through re-evaluation of use-type designations in areas where this information was not complete, fill in areas now known to harbor salmonids but not mapped, and to add information from reports which have been gathered since the data was first collected. Also, a more rigorous treatment of reference information for each event record will be conducted. Information sources include working with biologists, reports, and existing paper maps. Products will be made available via the StreamNet web and ftp sites. We will be working with ODFW, WDFW, and IDFG to accomplish this.

Issues of concern include improvements to the 100k that may be necessary to accommodate new data.

The StreamNet data exchange standards have recently been revised to address issues related to distribution, including use type and barriers. We are in the process of integrating population data standards as well. Work on data development for this task is underway and will continue throughout the fiscal year.

Task 6.2 STREAM SURVEYS

The principle objective of this task is to identify sources of stream survey data and convert them into the StreamNet exchange format, geo-referenced to the 1:100k hydrography. This will be accomplished through working with those that have the information to either help them prepare and convert this information, or to have StreamNet regional staff do this. Information sources include existing GIS layers, reports, or surveys. Products will be made available via the StreamNet web and ftp sites. We will be working with ODFW, WDFW, and IDFG to accomplish this, as well as BLM and USFS where possible. Issues of concern include referencing GIS data created with other hydrography and route systems, as well as updates to the 100k where surveyed streams are not portrayed.

Most of our stream survey efforts will focus on ODFW stream survey data. We have met with ODFW to discuss technical issues and believe that these can be resolved. We have yet to see the actual written proposal for this work and will not enter into a contract arrangement until we have done this and are confident that 1) the proposed work statement will result in a product that is consistent with regional protocol and 2) data will be made available for regional use.

Task 6.3 **STREAM TEMPERATURE SUMMARY DATA**

The principle objectives of this task are to collect, standardize, and incorporate into StreamNet mainstem and tributary stream temperature data from across the region. This will be accomplished through: 1) identification of existing temperature databases (NPPC, USFS, EPA, BLM, USGS-BRD, states and tribes); 2) creating a standard data exchange format; 3) creating geographic links within StreamNet's GIS; and 4) making the data available through StreamNet. Information sources include the Northwest Power Planning Council, tribes, federal and state agencies, federal and state land managers, universities, and private industries and organizations. Products will be made available via request and via the StreamNet web site. At first, we will simply make the data available. If we receive a substantial number of requests for summary statistics (daily minimum, maximum, standard deviation, residuals), we may later create routines to accomplish this. We will rely on the states and tribes to find and compile these data, while PSMFC staff will work with them to create a standard format that will be of use to users of the data.

There are two main issues of concern. First, the database size could potentially be very large; this may present concerns related to the speed of queries for these and other StreamNet data tables. If problems do occur, complete data sets may be replaced with daily summary statistics (but this is not anticipated). Second, there are a large number of data collection sites (probably over 2000) that will need to be geo-referenced in the StreamNet database; many of these will have poor geographic descriptions and sometimes poor time measures as well.

StreamNet is currently working with the Interagency Water Temperature Assessment Team (which includes representatives from EPA) to provide Internet and CD-ROM access to mainstem Columbia and Snake temperature data compiled by that team. A draft product is now available.

Task 6.4 **MACROINVERTEBRATE SAMPLING DATA**

The principle objective of this task is to incorporate macroinvertebrate data into the StreamNet database. This will be accomplished through initially working with Xerces and EPA to bring their existing database into the system. Additional data sources include state and federal agencies and land managers, universities, and private interests; we will work with the states and tribes to locate and acquire these data after the Xerces/EPA dataset is successfully incorporated. Products will be made available via the StreamNet web site.

There are few issues of concern, as Xerces and EPA have already conducted the majority of the work to create and standardize the database. Locating and acquiring additional data from other sources will be the biggest challenge. The Xerces Society intends to continually update the dataset. We are not prepared at this time to assume the long-term maintenance without a more detailed understanding of these data and the resources that will be required to maintain the system.

We have initiated contact with the Xerces Society and developed a preliminary strategy for integration. This should be rather straightforward and we intend to accomplish this task within the next 2-3 months.

Task 6.5 **WATER QUALITY**

The principle objective of this task is to create an event database that maps to the StreamNet 100k hydrography. This will be accomplished through creating a data exchange format and converting existing arc coverages to event data. Information sources include the current 303d coverages for region 10, as well as new data coming out during the year. Products will be made available via the StreamNet ftp and web sites. We will be working with EPA and the state environmental quality agencies to accomplish this.

Issues of concern include agreeing upon a data standard among the states, and fitting the arc-based data into event data format.

We see water quality data as the first and highest priority of all of the EPA contract tasks. Work will commence in December and will continue throughout the fiscal year.

Task 6.6 **GIS DATA PROCESSES**

This task will result in an easy to use, inexpensive, and standardized method for creating event data which can be used to display aquatic resource data using 100k hydrography. A system analysis will be performed to define the features of the program, to assess the technical strategies available to implement these features, and to apply StreamNet's data base design scheme to a distributed data entry system. Use of industry standard tools such as ESRI's MapObjects and the run-time version of Microsoft Access will be examined, as well as delivery mechanisms such as the use of CDROM's and the internet. StreamNet's regional staff and contract programmers will then build demo programs, and test these with data providers at the state level to evaluate the strategies and refine the interface. The final product will be an integrated system to see existing spatial data referenced to PNW hydrography, and to create and submit new event data to StreamNet for inclusion in the regional project.

Work on implementation of this task will begin within the next month and will continue throughout the remainder of the fiscal year.

Task 6.7 **DATA COMPILATION PROCESSES**

This task will extend the capabilities of the spatial data input tool discussed in task 6.6 to tabular data. It will provide for an easy-to-use mechanism for inputting a variety of data in StreamNet's exchange format. It will also provide a solid method for geo-referencing

these data sets to the hydrography. This will make the analysis of tabular data from a spatial perspective possible. It will also increase the efficiency of data input, and ensure that it conforms to established data exchange formats. The same development process and software components described in task 6.6 above would be used.

Work on implementation of this task will begin within the next month and will continue throughout the remainder of the fiscal year.

Task 6.8 **IRICC WEB PAGE**

The current IRICC web site will be substantially upgraded. The objective will be to create a site that provides essential interagency data standards information in an efficient and professional manner. We do not see this as a site that will receive significant "web surfer" use so graphic presentation will be restrained. The existing Multi-species Framework site (www.nwframework.org) is an example of the type of layout that may be used.

Upgrading of the IRICC site will be implemented in consultation with IRICC participants. IRICC meetings will provide a principal means for soliciting input from these partners, though one-on-one contact will also be employed.

We intend to work with IRICC participants to help clarify the geographic and subject matter scope of the products incorporated in the site. It may, for example, be appropriate to use this site to provide access to the PNW 1000k hydrography. Opportunities for coordination between StreamNet data exchange standards and those of IRICC will also be explored.

We intend to commence work on this in January, with a prototype available within a month. The site should be fully functional by March.