

**Technical Applications Development Strategy
Status Report Number 1**

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Pacific States Marine Fisheries Commission

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Introduction

In July of 1996, PSMFC received approval from the BPA project COTR to proceed with a strategy outlined in a paper titled 'Draft Technical Applications Development Strategy And Implementation Plan To Provide Platform Independent Access To StreamNet Data Products Through The World Wide Web (WWW) Service Of The Internet'.

This report outlines our progress in the first 2 phases of this strategy (porting and making available tabular data and beginning GIS prototyping). Phases 3 and 4 concern selecting final hardware and software configurations and implementing the final system and have not begun yet.

We are pleased to report that Phase I has proceeded reasonably smoothly and we hope to be complete with that phase by the end of September. Phase II will be exciting and interesting, and we are looking forward to proceeding with it more fully in October. These update reports will be prepared on an as needed basis, and will correspond to times when there is significant progress to report.

Please forward questions, comments, or concerns to Stan Allen or Duane Anderson at PSMFC.

Phase I Update

Task 1 : Port selected StreamNet datasets... :

Progress to Date : All distributed system datasets except spawner-recruit, distribution, some components of the reference system, and minor components of the hatchery facility dataset have been ported to the Onco Sparc Server at PSMFC using into a SQL database (Ingres 6.4.04).

Future Action: Port spawner-recruit data, distribution data, and remaining critical reference components.¹ There is a potential (and some demonstrated need) to add USGS daily flow data. As data updates are made to the regional data manager they will be mirrored to the Ingres platform (main management of the database will continue on MS Access until a final database platform is selected).

¹ The current SQL server we are using (Ingres 6.4.04) has a 2,000 byte record limit. This puts constraints on the implementation of so called 'memo' fields from the StreamNet Distributed system. In particular, the abstract and notes field in the reference system frequently exceed this size limit. For the current implementation, these fields will not be available. The problem will be resolved with the final selection of SQL server software for the project.

Task 2 : Develop, test....HTML... interface... :

Progress to Date : 2 major models of user interface prototypes have been developed. The first, Model 1, is a forms based approach allowing the user to specify multiple criteria per screen while the second, Model 2, uses a more traditional Web approach of tunneling down through one option at a time. Summary of comments to date look something like this:

General Comments : Some problems with the evaluation page when using with specific browsers, namely older Netscape versions and Mosaic. We are developing a strategy and plan to address these problems. Users encountered a variety of minor bugs and formatting issues - these will be dealt with as we go.

User Preference for Major Model Type:

Anonymous - 1 user (didn't fill in name) preferred Method 1

BPA - Preference for Model 2.

CRITFC - No comments

IDFG - No direct comments (I think Jerome prefers Method 2)

ODFW - Expressed strong preference for Model 1.

USFWS - No comments

WDFW - 2 user's preferred Method 1, 1 user thought we should support both for at least and interim time period.

Future Action: We will continue summarizing comments on the 2 models. We will continue refinement of the 2 models. We will develop short and long report formats and improve the graphing function. We will fix the download option to work properly. We will adopt a set of WEB development standards to which we will adhere and test. The system will be compatible with the standards selected. We will add a reference 'basic index' search capability to the system as well as reference reports.

Task 3) Select a preferred alternative...

Progress to Date : Based on the limited comments we have received so far, we have decided to support variations of both Model 1 and 2 into the near future. Both models will be refined to reduce the number of keystrokes to get from start to finish and employ hyperlinks as appropriate. Model 1 will be a forms based approach allowing the user to specify all search criteria from one screen while Model 2 will be a 3 tiered tunnel down approach.

Future Action: We hope to have acceptable versions of both models more or less perfected by the end of September. These models, and the associated database underlying them, will be moved to the public page at that time. Further major enhancements on either the data access tools or underlying database will be frozen for 2-3 months while ad hoc

GIS testing is prototyped (we will address bugs, and the underlying database will be updated as new data comes in).

Task 4) Expand current pre-prepared map catalog...

Progress to Date : Steve has added a variety of new map coverages to the current WEB page

Future Action: Continue to add coverages as they become available

Task 5) Explore the feasibility of providing pre-prepared map products in Arc Info Format...

Progress to Date : Steve has provided WEB page function to download files as GIS images, encapsulated postscript files (eps), and compressed Arc/Info graphics files (gra). Only a few of the map catalog choices are available in these formats at this time.

Future Action: Add additional formats as they become available

Task 6) Provide interactive query interface to map holdings...

Progress to Date : Steve has provided this function using UNIX based tools WEB (not an SQL database)

Future Action: Add additional features, if desirable, keep database updated, explore options for integrating map catalog information into SQL database.

Phase II Update

Task 1) In preparation of geographic prototyping prepare...

Task 1.1) Locate and prepare suitable test site for Oracle/SDE testing

Progress to Date: None

Future Action: In our research into the SDE we have frequently encountered references to ESRI's new software product called MapObjects. MapObjects is a collection of mapping and GIS components from ESRI, and consists of an ActiveX Control (OCX) and a collection of over 35 programmable ActiveX automation objects which let application developers add mapping and GIS capabilities to applications. Using MapObjects,

combined with a development environment such as Visual Basic, Visual C++, Delphi, etc., we hope to prototype a WEB application that provides ad hoc GIS capabilities on a WEB site. Because MapObjects can serve as an interface to data in the SDE or data available as shape files, we want to evaluate this product as soon as possible (see an ESRI demo of the product at <http://maps.esri.com>) using shape files (as opposed to the SDE). It may be possible to achieve a high level of function using only shape files as opposed to the SDE. MapObjects is a MS Windows application requiring Windows NT 3.51 or higher or Windows 95. To do testing we need to proceed with the following steps:

1. Purchase and setup MapObjects and software development suite (cost will be approximately \$2,500)
2. Setup and configure a test NT server outside of PSFMC firewall (cost will be approximately \$350 for NT license)
3. Enroll Doug in an ESRI SDE training session to be held in October. Continue exploration of SDE and test site development options (cost will be approximately \$2,000)

Task 1.2) Acquire and install test copy of ESRI's SDE...

Progress to Date: None

Future Action: We will continue to explore options for testing the Oracle/SDE option.

Task 1.3) Prepare Regional SQL / ArcInfo Test site(s)

Progress to Date: Duane met with BPA, they are moving forward with Sybase, ArcInfo Test bed - they requested data coverage for evaluation.

Future Action: Continue with preparation work.

Task 1.4) Select basin for geographic prototyping....

Progress to Date: None

Future Action: Work with BPA staff to select subbasin and begin acquiring and or sharing data between two test sites.

Task 2) Assess performance and feature options...

Progress to Date : None

Future Action: Develop criteria for assessment, proceed with assessment as prototypes come online.

Task 3) Develop, test, and revise as necessary HTML based...

Progress to Date : None from PSMFC, unknown from BPA

Future Action: Begin/continue development as appropriate

Task 4) Based on results of 1-3, prepare... recommendation...

Progress to Date : None

Future Action: Proceed with assessment/recommendation as steps 1-3 are completed.