

PROJECT PROGRESS SUMMARY

Summary

The following report details progress regarding the EVOSTC project titled: Herring data and Information Portal which has received funding for the FY07 fiscal year. The report addresses project status and progress on an objective by objective basis. The objectives listed below are those which were detailed in the FY07 project proposal. This progress report is reflective of work accomplished as of this writing which is July 9th, 2007. There will be considerable future progress made on these objectives through (now till September) the FY07 fiscal year.

Objectives and Corresponding Progress

Objective 1. Consolidate herring data sets, metadata and other electronic resources to publicly accessible web portal for herring information.

Considerable progress has been made regarding this objective. A widespread survey has been conducted to document and isolate existing herring specific data resources which are specific to the Prince William Sound geographic area. A data inventory has been created which details candidate datasets, metadata status, geospatial qualities and prioritizes the resource for absorption into the portal. Rob Bochenek has traveled to Cordova Alaska to acquire and organize data holdings at the ADF&G Cordova Office. Mr. Bochenek has also participated in a Modeling workshop at USC with the Kiefer modeling group which included Dr. Evelyn Brown. Dr. Brown provided copies of many existing PWS herring related datasets that were produced by the Sound Ecosystem Assessment (SEA) Project and her dissertation work. These datasets have been put in the queue for metadata creation, processing and eventual absorption into the Herring Data Portal. The table (Table 1.) below provides a list of candidate data sets that are currently being processed for ingestion into the Herring Data Portal.

<u>Source</u>	<u>Data Set</u>
Aerial Surveys - ADF&G	Linear extent of spawn
Aerial Surveys - ADF&G	Survey track line
Aerial Surveys - ADF&G	Biomass
Aerial Surveys - SEA	CASI Herring Survey in Prince William Sound - July 9-15-1997
Acoustics Surveys - ADF&G	Broad scale survey tracks
Acoustics Surveys - ADF&G	Acoustics tracks and data
Spawn Deposition Surveys	egg density, kelp types, fecundity
Herring age, sex, size	age, sex, size, gonad maturity
Herring disease assessment	VHSV, Ich prevalence
Herring disease assessment	VHSV, Ich index
Age structured model forecasts	prefishery run biomass, forecast
Com Fish	Historic commercial catch data
Com Fish	Modern Catch Data
ADF&G	egg loss/mortality database

SEA Program	SEA herring catch database
E. BROWN Dissertation	Evelyn Juv. Herring/ forage fish aerial survey
SEA Program	PWS zooplankton SEA project
SEA Program	PWS zooplankton nearshore SEA project
SEA Program	PWS hatchery zooplankton
SEA Program	SEA broadscale acoustic (seasonal)
SEA Program	SEA nearshore bay acoustic
SEA Program	SEA predator database
SEA Program	SEA stomach database
SEA Program	SEA tucker/box trawl
APEX Program	APEX zooplankton
APEX Program	APEX zigzag nearshore accoustics
E. BROWN Dissertation	Juv./Adult energetics
E. BROWN Dissertation	Age distributions

Table 1. List of candidate data sets

Jim Vansant has made considerable progress regarding the data management of ADF&G historical herring survey spawn event and biomass observation data. These key data sets have been consolidated, standardized and documented via metadata. The aerial survey spawn data set processing is almost complete and will be the first dataset to be absorbed into the portal. The biomass and related survey effort datasets will be complete later in FY07 or early in FY08 (if funds are acquired for FY08). The following diagram (Figure 1) provides an information process flow chart for the data processing of the ADF&G Aerial Survey Dataset.

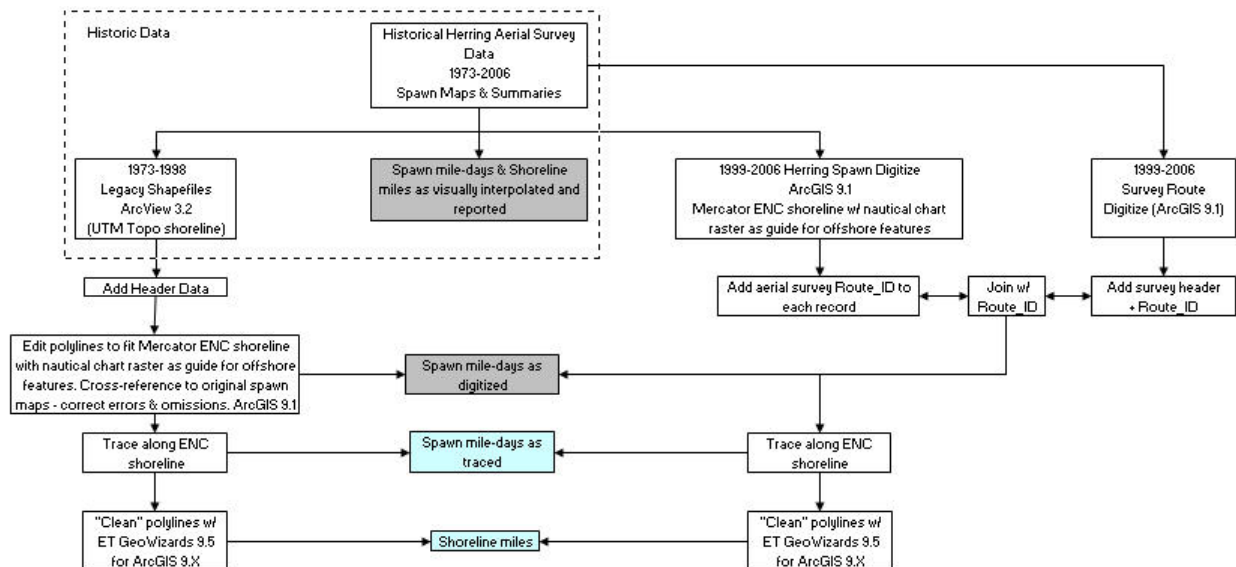


Figure 1. Aerial Survey Data Processing Flow Diagram

Objective 2. Provide web accessible map based visualization of geospatially enabled herring data through a Mapserver and Google Earth client interface.

Herring data portal staff member Rob Bochenek has been working with EVOSTC data management staff on developing technology for the storage and visualization of geospatially explicit scientific data. A draft relational database design which is geospatially enabled has been created which provides a flexible and scalable storage structure for a multitude of measurement types and geospatial features. The following diagram (Figure 2.) provides a brief view of the draft geo-spatially enabled database structure.

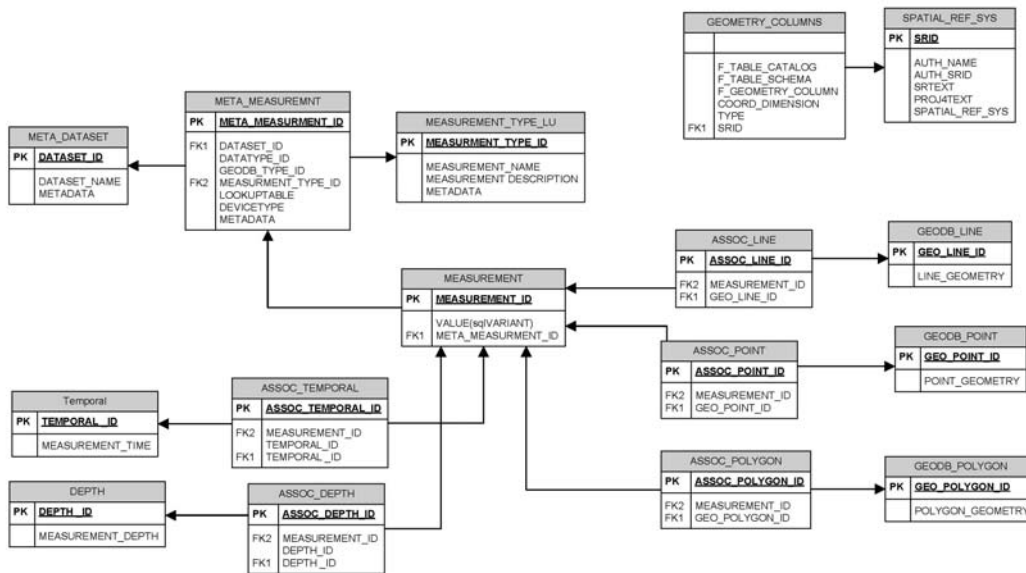


Figure 2. Draft Geospatially Enabled Data Model.

This data model is in draft form and will very likely change in structure to better accommodate data ingestion processing. Testing and redevelopment of this draft structure is scheduled to take place late in FY07 and into FY08.

Test aerial survey data has been loaded in the test database structure and KML has been successfully produced from the database through SQL queries. The KML then is loaded in google earth and provides geospatial rendering of Spawn events within the google earth interface. The following image shows this simple rendering of historic spawn events on the shoreline of Prince William Sound. This is a simple example of what is to come in the next few months as more sophisticated KML is generated from the data that is stored in the geo-spatial database.



Image 1. Google earth visualization of Spawn Data stored in Geo-database Structure.

Objective 3. Develop Standard Operating Procedures (SOPs) for the absorption of additional herring datasets, metadata and information to the centralized herring datasystem. Provide system architecture documentation.

This objective will be addressed later in the FY07 fiscal due to the fact that standard operating procedures for absorption of data into the herring data portal data structure are in a testing/experimentation phase at the moment. As the geospatially enabled relational database structure moves out of the testing/development phase and into the production phase explicit standard operating procedures can be developed which provide detailed instructions and documentation regarding data ingestion and manipulation. This deliverable is not scheduled for completion until September of FY07.

Objective 4. Develop Arcpad application to automate herring spawn data collection.

A beta version of the Prince William Sound Arcpad Aerial/Boat Survey application has been created which provides an automated and standard way to document herring specific physical and biological observations. The current version of the Arcpad application is being tested by ADF&G staff and user interface issues are being documented. Version 1.0 of the application

