

US EPA ARCHIVE DOCUMENT

EMAP-West Communications

Data Analysis Workshops Transfer Statistical Technology to Regions, States, and Tribes

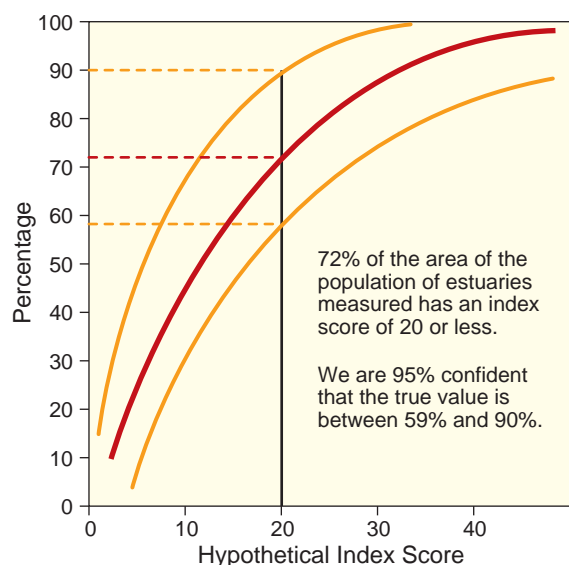
One of the main goals of EMAP-West is to develop, test, and transfer the technology behind the Program's monitoring design and data analysis to the cooperating states and tribes in EPA Regions 8, 9, and 10. This process is well underway for the Coastal component because 1999 data from the sampling of the estuaries of Washington, Oregon, and California are now ready for analysis. All three states will be conducting their own analyses of their data in cooperation with EPA scientists.

While the underlying sample survey design and data analysis are complex, a series of workshops accompanied with the appropriate documentation has simplified the process to make it more accessible to cooperating state personnel. The tools necessary to complete the analysis process are now available to the three coastal states and the analysis process has begun.

The workshops, jointly presented by the Western and Gulf Ecology Divisions, describe the EMAP probabilistic approach to estimating the condition of an ecological resource. The first part of a workshop reviews the steps necessary to create a data base that is ready for analysis. Included are:

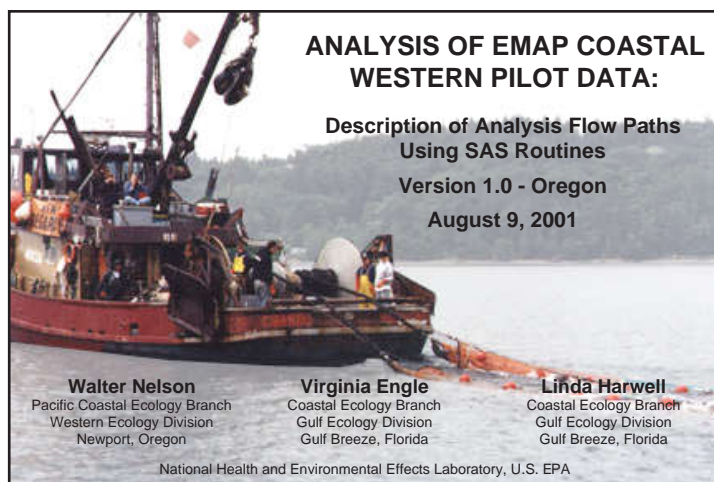
- A review of the process of creating survey sampling designs for coastal waters.
- The requirements for information management including data organization and accessibility.
- Quality assurance and quality control procedures and their importance in producing a report of condition that is scientifically defensible.

Since the overall objective of the Coastal Component is to provide a statement of the status of the west coast estuaries, a complete and well-documented data set is required. Once the data set is complete, the analysis process can begin. The primary output of these analyses are cumulative distribution functions (CDF) (see figure below).



The CDF enables the reader to estimate the cumulative total area (or proportion) of a resource with an indicator of condition less than some specified value (e.g., a state water quality standard). The survey design ensures that these estimates are made with a quantifiable degree of certainty.

To aid client organizations in building the internal capacity to analyze EMAP coastal assessment data, EMAP-West scientists have produced a series of "How To" technical manuals tailored to the specific assessment designs of individual state participants. (See example title page below.)



These manuals provide detailed instructions on how to process EMAP data thus easing the learning curve for new participants. The current manuals provide the statistical program routines that allow complex analyses to be conducted routinely using commercially available software packages. Individualized, hands-on training sessions are also conducted with state participants to insure their ability to effectively use a variety of analysis tools.

The initiation of the technology transfer initiative by EMAP Coastal has received very positive feedback from participating state organizations. The resulting data reports serve as the foundation for subsequent assessments of coastal condition jointly conducted by EPA and state personnel. Having the internal capability to develop and analyze EMAP data will make the state and tribal cooperators much more independent as they continue future status and trend monitoring.

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