



# *The Port of Long Beach*

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NSV LONG BEACH  
SSIC #5090.3

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September 15, 1995

Mr. Mike Radecke  
Southwest Division, Naval Facilities Engineering Command  
Code 1832.MR  
1220 Pacific Highway  
San Diego, CA 92132

Subject: Long Beach Naval Complex Marine Biological Data

Dear Mr. Radecke:

Pursuant to your conversation with Tom Johnson, of my staff, I am happy to provide you with an explanation of the Port of Long Beach's recent request to utilize biological data being collected for the Navy. The Port of Long Beach has been developing a historic agreement with the federal and state resource and regulatory agencies that, if implemented, would enable the resource agencies to conduct a restoration of the Bolsa Chica wetlands and would provide landfill mitigation credits for future port landfills. The agreement also defines the terms under which the credits could be used. A key remaining issue, however, is how to characterize the Navy Basin in terms of the mitigation credits needed to compensate for fills. There are no recent data that would allow us to define the ecological value of the area in the same way that other areas of the harbor have been evaluated. Accordingly, the Port has undertaken to produce the analyses needed to resolve this issue. This effort is very time sensitive because the opportunity to bring everyone together into this agreement has a narrow window in time.

We propose to compare your Navy Basin biological data with similar data being collected for us elsewhere in the harbor, to determine which harbor areas the Navy Basin most resembles. We propose to use multivariate statistical analyses to "cluster" stations on the basis of similarities in spatial and temporal patterns of species composition and abundance. Cluster analysis is a powerful tool for elucidating ecological relationships, and has been widely used in the San Pedro Bay area to define ecological differences and similarities (e.g., MEC, 1988, Biological Baseline and Ecological Evaluation of Existing Habitats in Los Angeles Harbor).

Our analysis would utilize two sets of benthic infauna data collected in 1994: the Navy Basin data collected for Bechtel, and the inner and outer Long Beach Harbor data collected for SAIC.



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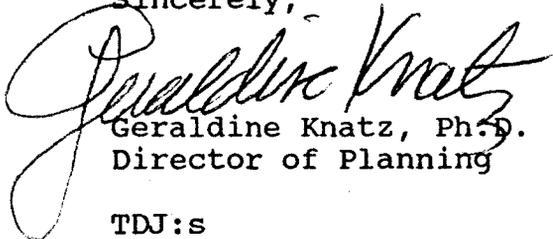
Both sets were collected by MEC Analytical Systems, Inc., using very similar methods. We would send the data in electronic format to Ecoanalysis, Inc., of Ojai, California, for analysis. Ecoanalysis has been conducting computerized multivariate analyses of marine biological data in Southern California, using standard methods that they have developed, for over ten years, and is a recognized leader in the field. The output will be cluster dendrograms, similar to the attached examples, that will describe similarities among Navy Basin, Inner Harbor, and Outer Harbor stations.

We propose to submit the completed dendrograms to the Army Corps of Engineers, National Marine Fisheries Service (Long Beach office), and California Department of Fish and Game (Long Beach office). We and they will evaluate the dendrograms and come to an agreement concerning the ecological status of the Navy Basin with regard to mitigation planning.

The Port of Long Beach is sensitive to your concern that data not be released before you have reviewed it. We would have to mention the source of the various data sets used, but we would not release the raw data on which the cluster analysis would be based. As you can see, the dendrograms identify sampling stations and species, but as they do not contain quantitative data on abundances, there is no danger of users acquiring the actual counts.

I feel confident that the Port's proposed use of the Navy Basin biological data would in no way compromise the Navy's interests. Accordingly, I request that you authorize Bechtel and MEC to release the data to us as soon as they are available. If you have any questions, please contact me at (310) 590-4154. Thank you very much.

Sincerely,



Geraldine Knatz, Ph.D.  
Director of Planning

TDJ:s

Attachments

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## ATTACHMENTS

MARINE BIOLOGICAL DATA

DATED 15 SEPTEMBER 1995

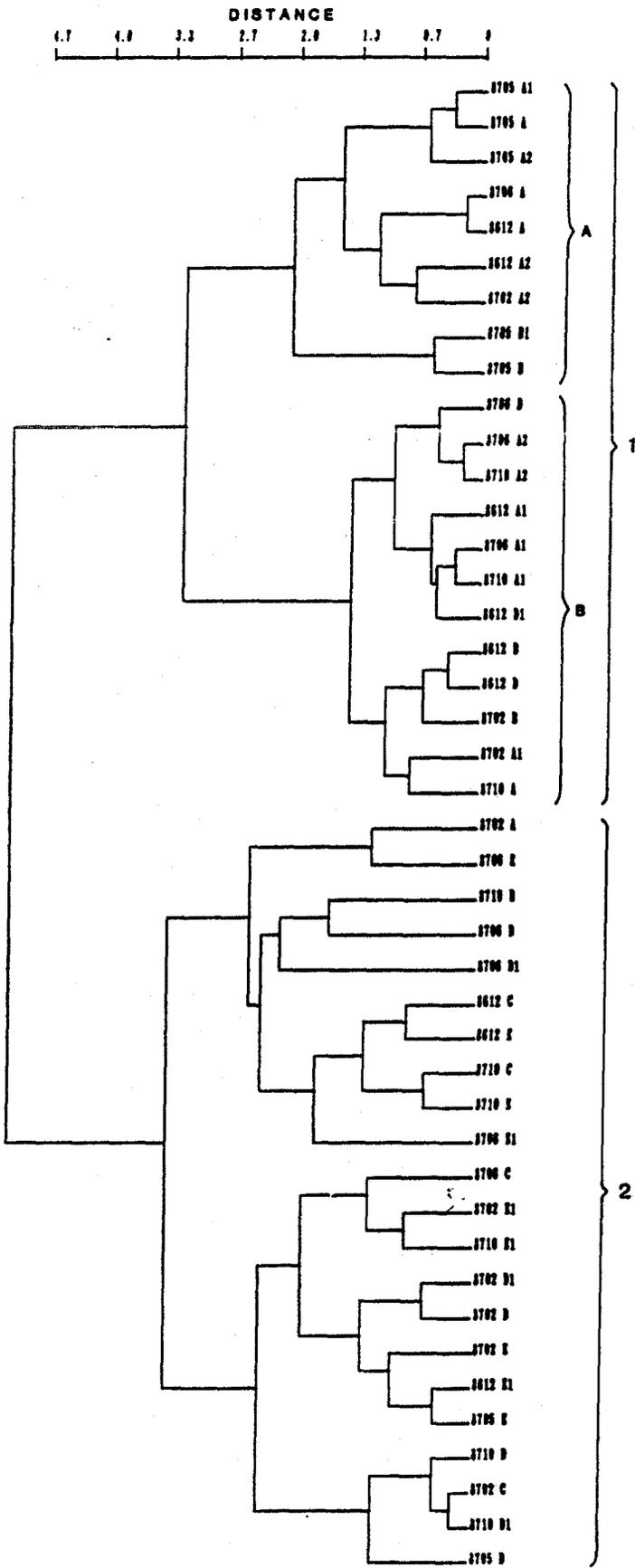


Figure 3-20. Survey-station dendrogram from the cluster analysis on lampara collections, 1986-1987 Los Angeles Harbor baseline study. Cluster groups and subgroups are identified by numerals and letters to the right of the survey-station listing. Each survey-station is given as survey date (year, month) and block. Thus, for example, 8705A1 refers to the lampara collections in Block A1 on the May 1987 survey.

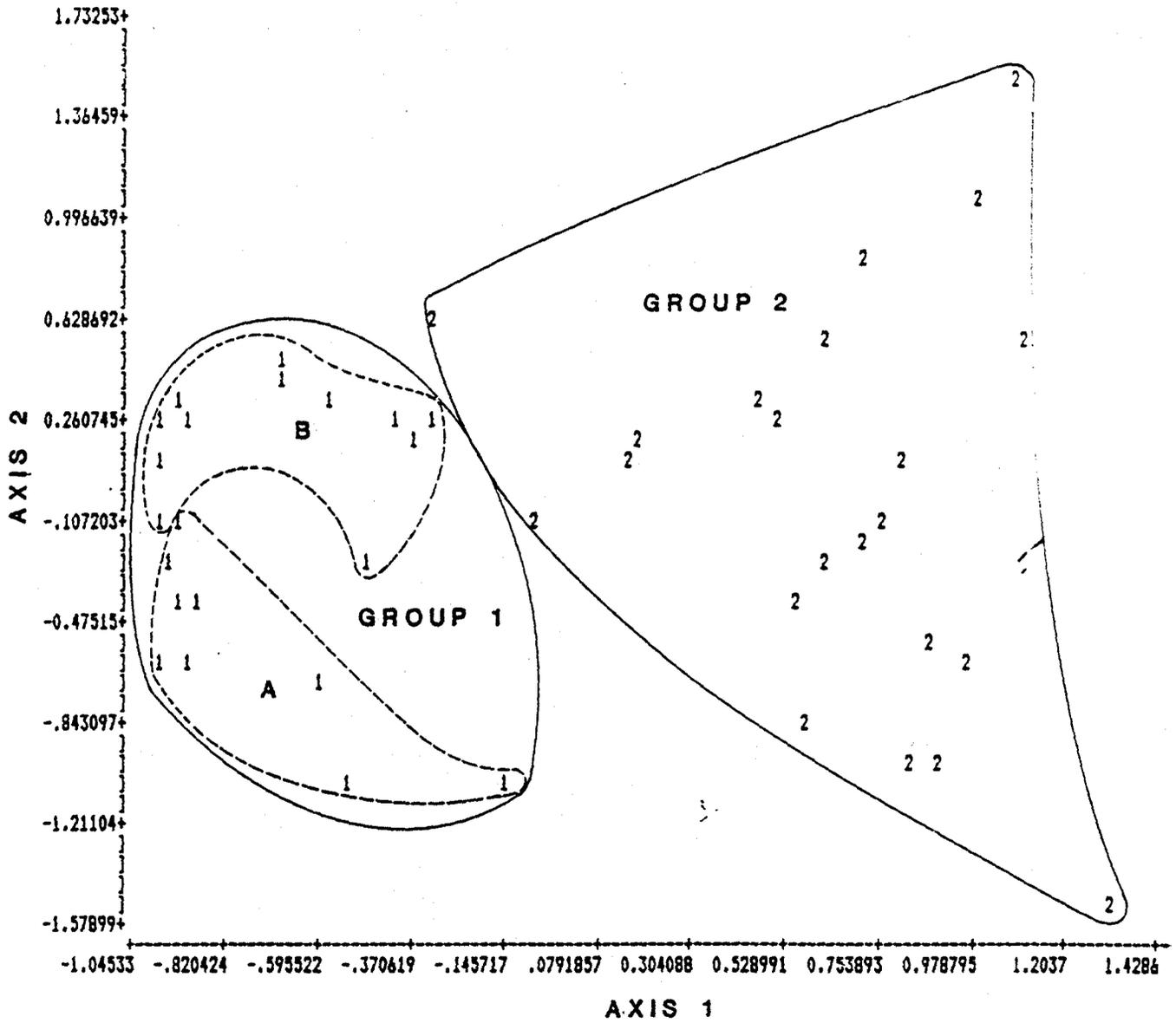


Figure 3-23. 1986-1987 Los Angeles Harbor lampara cluster groups plotted in ordination space to show the separation of Groups 1 and 2 along ordination Axis 1 and the separation of the two subgroups of Group 1 along ordination Axis 2.

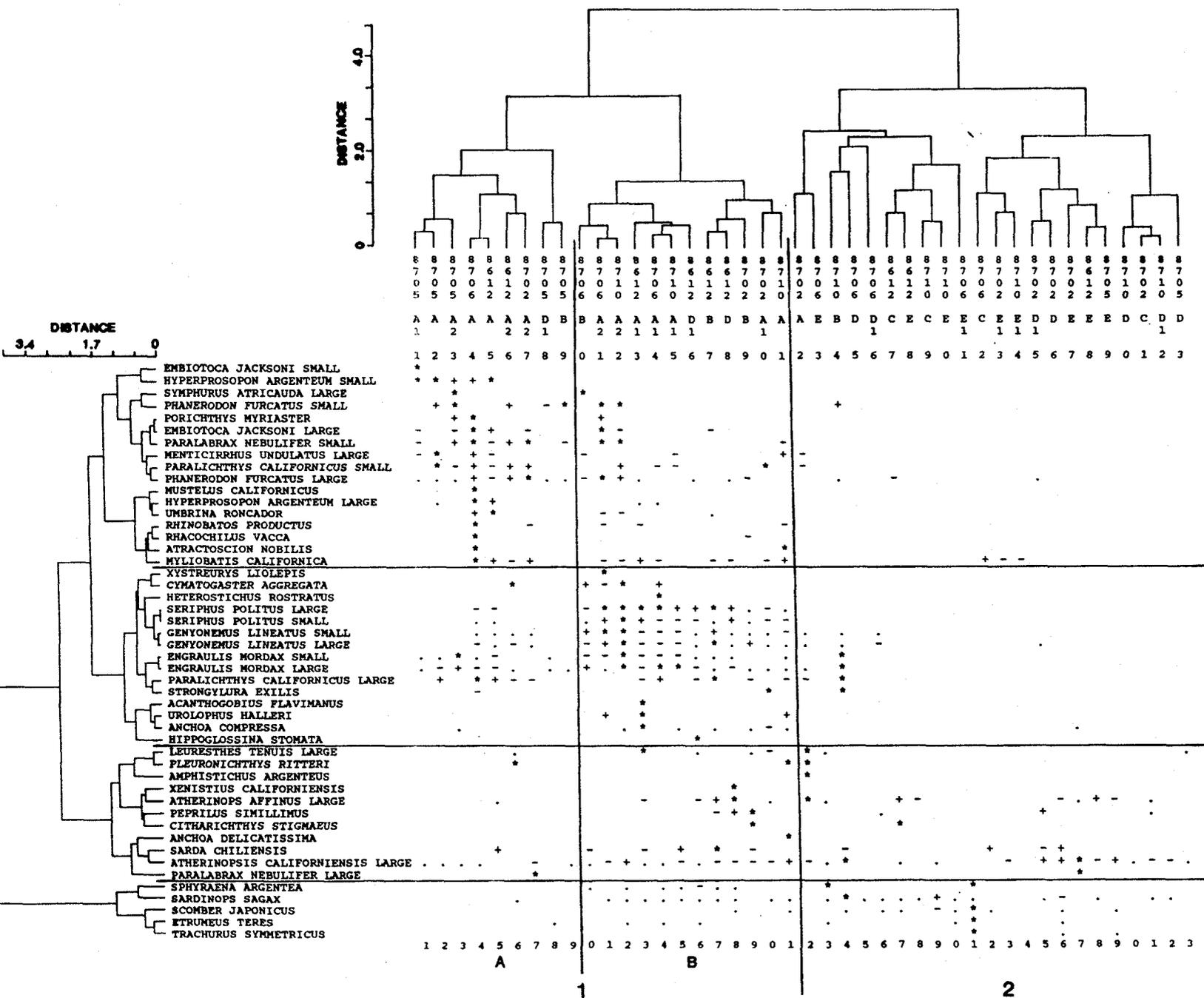


Figure 3-22. Two-way coincidence table from the cluster analysis on lampara data, 1986-1987 Los Angeles Harbor baseline study. Surveys and stations are listed across the top of the table; taxa are listed down the left side. Major survey-station cluster groups are identified by numerals at the bottom and subgroups are identified by letters; these correspond to the groups identified on the dendrogram in figure 3.20. Standardized abundances of taxa are indicated by symbols: blank=0; \* = 0 to 0.25; + = 0.25 to 0.50; \*\* = 0.50 to 0.75.