Assessment of Offshore Surf Clam Populations in Mid-Atlantic Waters: Data, Methodologies and Analyses

Questions and Answers

by

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78-25

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Questions and Answers on Surf Clam Assessment

1. What information was used in assessing the status of the surf clam fishery in the offshore areas for use by the Middle Atlantic Regional Council?

   A) Landings by states from 1950 to 1976.

   B) Intensive coverage by interviews of fishermen in New Jersey from 1965-1970 and light coverage by interviews of fishermen in Delmarva from 1970-1976.

   C) Research cruises done primarily to collect biological data and to map distribution in 1965, 66, 67, 69, 70, 74, 76, and 77.

   D) Studies of size at age by Virginia Institute of Marine Sciences and the Northeast Fisheries Center.

   E) Studies of size and age at maturity by the Northeast Fisheries Center.

2. How was survey data used in assessing the status of the clam population?

   An index of relative abundance, i.e. catch in numbers of clam in survey dredge tows, was used to follow trends in population size. This was done for both commercial and pre-commercial sizes. Estimates of total surf clam populations was not made from the survey for use in the assessment provided the Council.

3. How and why were the surveys begun?

   The surveys were initially begun at the request of industry to help locate areas of commercial concentrations of clams. Industry supported the continuation of the early cruise program for this purpose. Now surveys will need to be re-designed to meet FCMA assessment priorities.

4. How was commercial data used in the assessment?

   Reported landings were assigned to inshore and offshore areas and to regions, e.g., Northern New Jersey, from interviews. Trends in catches by area could then be followed.

5. How were these data combined into the assessment?

   The catches were related to survey trends by area taking into account the size of the areas.

6. What gear has been used in the surveys?

   A dredge similar to those used by the commercial vessels, initially with a 30-inch blade and lately with a 48-inch blade. The dredge has been adapted to catch smaller clams as well as larger clams.

7. Has the survey gear been compared with commercial gear?

   Yes it has. Comparison studies made in 1976 indicated that after adjusting for blade size, the commercial vessels caught six times as many clams as the research vessel.

8. What are the differences between the goals of commercial clammers and research surveys?

   A) Clammers maximize catch of marketable clams by minimizing trash caught, while research vessels need to collect an unbiased sample of the total population including smaller clams.

   B) Clammers search out areas of highest concentrations while research cruises need to have representative coverage of the total area.

   C) Clammers try to adjust their dredging procedures to attain the greatest efficiency for every tow while researchers try to standardize procedures so tow to tow results are comparable.

9. Can the research surveys be improved?

   Yes, they can and are being improved for better coverage of both surf clams and ocean quahogs.

10. What is being done?

   A) NEFC statisticians have been studying station selection procedures and a more appropriate random sampling design to meet FCMA assessment needs was used in the January 1978 survey. Fuller evaluation will have to await more cruises.

   B) Vessel operations have been reviewed by NEFC engineers and a doppler measuring device is being installed on the vessels to standardize distance and speed traveled over bottom.

   C) NEFC engineers in cooperation with the underwater dive team are studying the dredge operation. The first cruise has been completed and analysis is underway.

   D) Currently, the engineers are also adjusting the dredge and the maintenance procedures to enhance standardization.

11. Can the commercial data input be improved and how?

The commercial data input can be greatly improved by having records of actual catch and effort by vessels for the fleet, and by having length frequency samples taken and having samples of clams aged.

12. What is being done to do this?

A) The management plan required logbooks which will improve the ability to relate survey and commercial data and allow trends in catch effort to be followed as a time series develop

B) A minimum length frequency sampling program has been re-instituted.

C) A preliminary program has begun to develop an age processing program in Delmarva through a contract with the University of Maryland Eastern Shore.

13. What is NEFC's evaluation of the assessment relative to the quota established by the Middle Atlantic Regional Council?

The Council stated that their optimum yield goal was to stabilize the offshore surf clam populations. Survey cruise indices showed lower abundance off New Jersey in recent years in an area additionally stressed by a kill due to low oxygen levels in 1976. Survey indices indicated a generally stable level off Delmarva. The latter correlated with catches of about 20 million pounds. Catches of 30 million pounds in earlier years off Northern New Jersey (an area of relatively similar size) had resulted in a demise of that fishery. Adjustment of New Jersey offshore catches in previous years by the relative change in abundance given by the survey resulted in estimates that catches of three to five million pounds could be sustained. Considering that some fishing is done offshore outside of these areas, there is a good probability the quota will achieve the goal in 1975 of stabilizing (i.e. ± 20%) the population at the end of the 1977 level provided that there are not large shifts in the areas being fished in 1978.