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Species Mixture in the Boundary Areas Between

5ZE and 5ZW

by

Bradford E. Brown

National Marine Fisheries Service
Northeast Fisheries Center
Woods Hole, Massachusetts 02543

At the 1972 Annual Meeting of ICNAF the question of reporting statistics for Division 5Ze and 5Zw arose in light of the need for the maintaining of yellowtail flounder statistics using the 69° longitude line as a boundary. United States scientists were requested to review the statistics in this area to determine the feasibility of changing the divisional boundary line from 70° to 69°. This document reviews this question in consideration of the present management regime which requires assessment advice on TAC values for some 20 "stocks" in this area.

The distribution of species in SA 5 and 6 was reviewed by Grosslein in ICNAF Res. Doc. 73/9. Several illustrations from this paper will suffice to illustrate the complexity of the problem. For haddock (Figure 1), the 70° line appears suitable while a 69° breakdown would only confuse assessment analysis. For redfish (Figure 2) a 70° division appears reasonable but obviously a finer breakdown based on depth zones would be more useful. For cod (Figure 3) the 70° boundary also appears adequate as contrasted with that of 69°.

Yellowtail flounder and red hake, on the other hand, are already regulated on the basis of 69° based on the Assessment Subcommittee's evaluation of the stock division boundaries, although the 5Zw area is one of overlap in the case of red hake (Redbook 1972, Part I). Silver hake has been managed on the basis of the 70° line but the Assessment Subcommittee (Redbook 1972, Part I) has concluded that the area between 69° and 70° is an area of stock intermixture. Anderson (Res. Doc. 74/) suggests that silver hake on the Cultivator Shoals area of 5Ze may intermingle with those in the Gulf of Maine and that the silver hake off the outer edge of Cape Cod may be part of the Gulf of Maine stock. For other species - e.g. herring, mackerel, squid, current assessments are based on a single stock for SA 6 and Division 5Z and thus either a 69° or a 70° division would be just as meaningful for assigning catches to stocks. The mixture of species in Division 5Z and SA 6 (Figure 4) clearly indicates the impossibility of establishing a subdivision boundary line which serves all purposes for all species. Therefore, we can only conclude that there is no basis for changing the subdivisional boundary at this time. Where TAC's are set for different stocks at different boundaries then dual statistical breakdowns are needed: i.e. 1) for management areas, and 2) for the standard ICNAF Statistical Divisions. This above discussion illustrates the obvious necessity for having catch-effort statistics on a small unit area basis so that they can be combined at any time, in any way, for both reporting purposes and for analyses. Likewise, the length/age frequency breakdowns can be summarized initially by desired stock areas; but since the stock areas may change as additional information becomes known, the real need is to have individual sample data recorded in the ICNAF data bank, so that the more appropriate summaries can be made as required.

REFERENCES

- Anderson, E.D. 1974. Comments on the delineation of red and silver hake stocks in ICNAF Subarea 5 and Statistical Area 6. Annual Meeting International Commission Northwest Atlantic Fisheries Res. Doc. 74/) (mimeographed).
- Grosslein, M.D. 1973. Mixture of species in Subareas 5 and 6. Annual Meeting International Commission Northwest Atlantic Fisheries, Res. Doc. 73/8, Ser. No. 2911, 49 pp. (mimeographed).
- ICNAF. 1972. Report of the Standing Committee on Research and Statistics. International Commission Northwest Atlantic Fisheries, Redbook, Part I, p. 32-36.

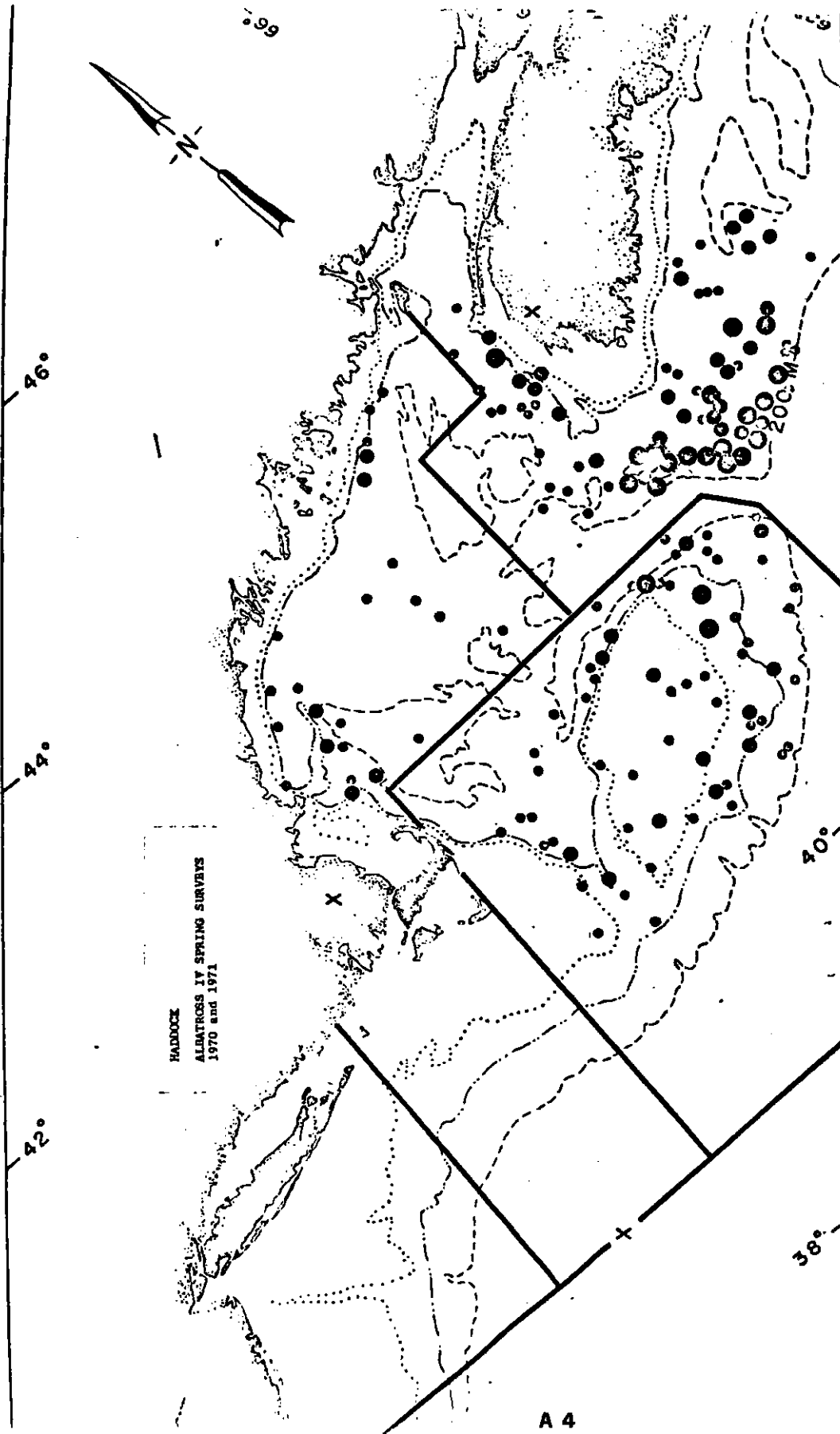


Figure 1. Distribution and abundance of haddock observed during spring research surveys by ALBATROSS IV, 1970 and 1971.

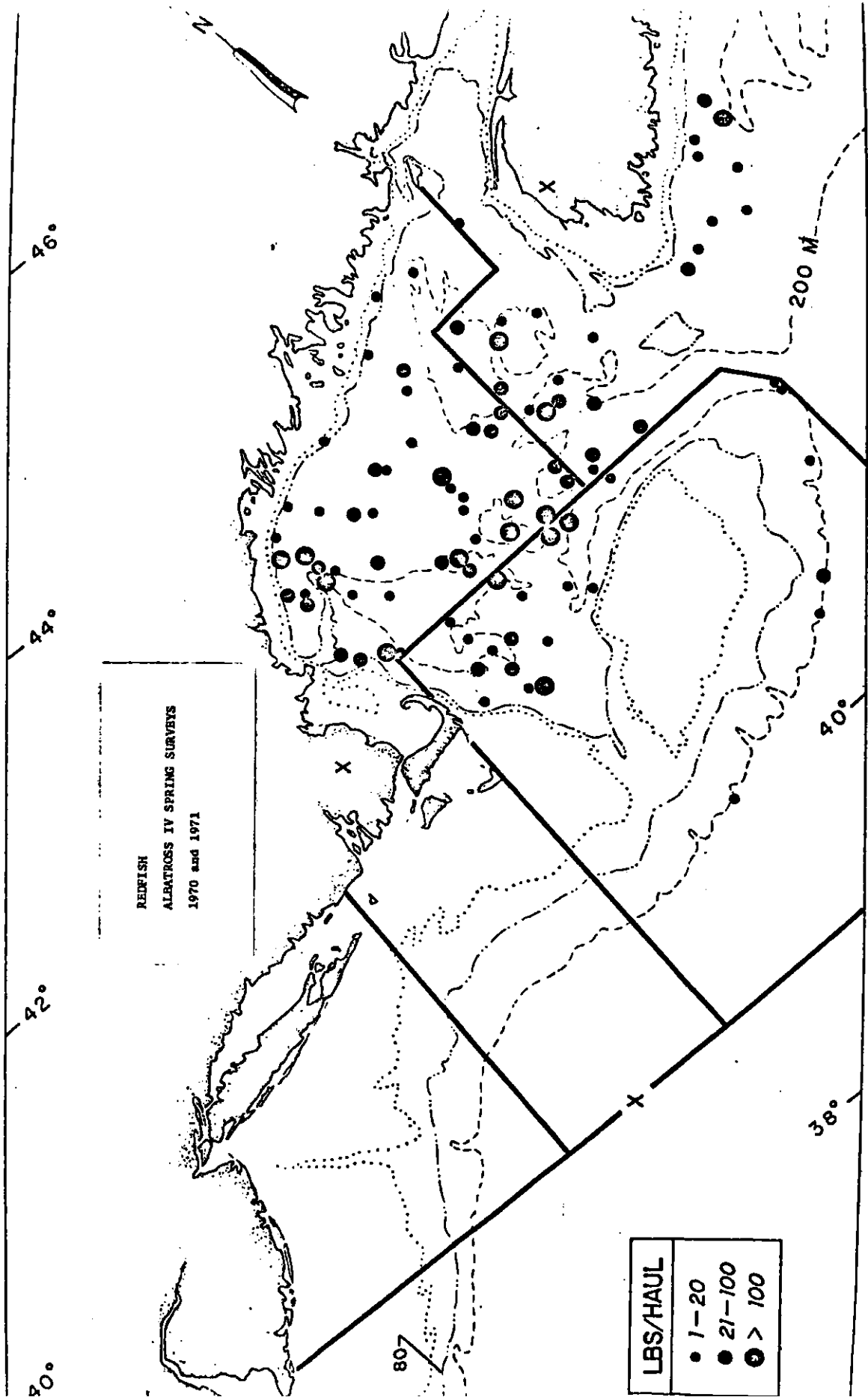


Figure 2. Distribution and abundance of redfish observed during spring research vessel surveys by ALBATROSS IV, 1970 and 1971.

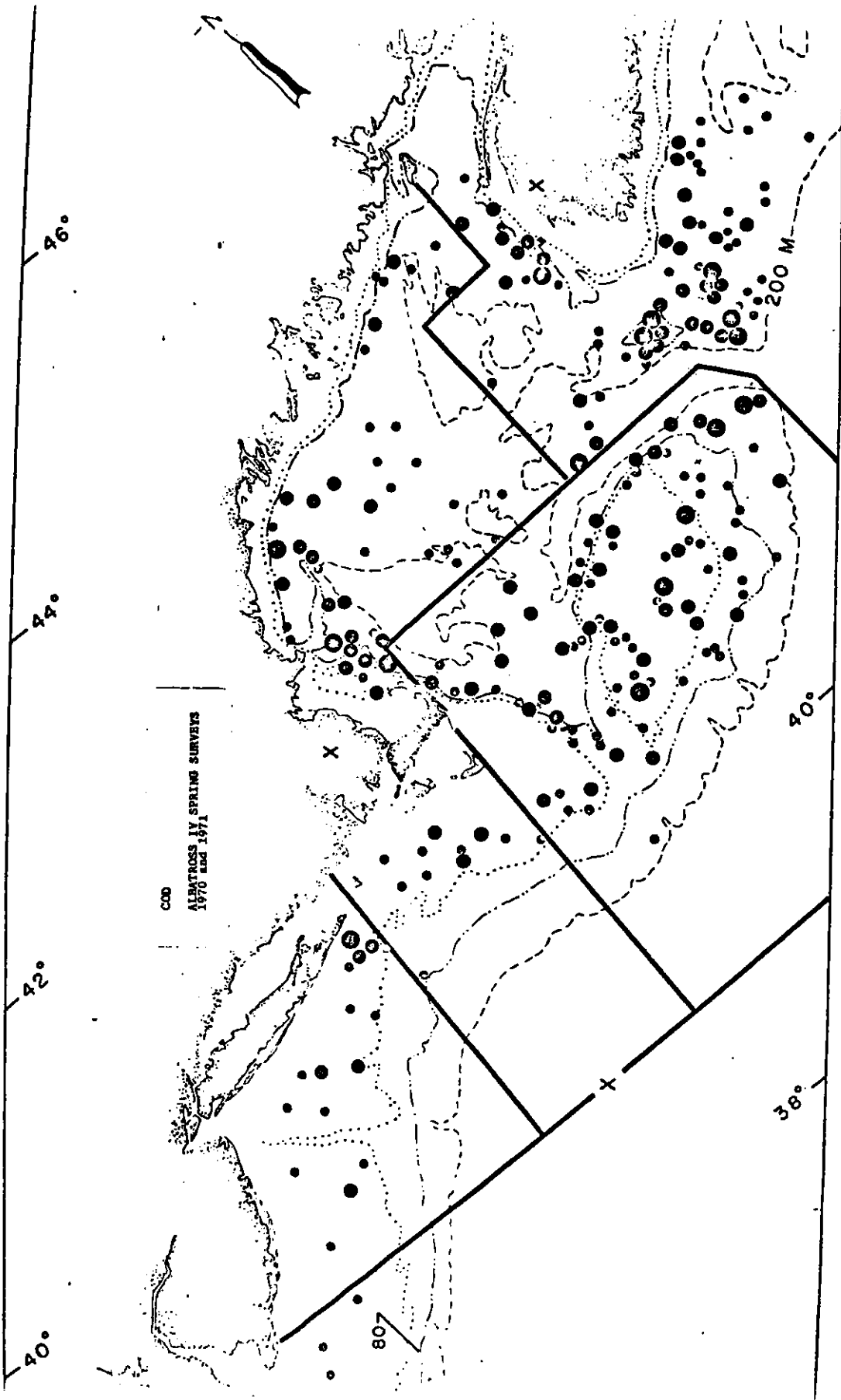


Figure 3. Distribution and abundance of cod observed during spring research vessel surveys by ALBATROSS IV, 1970 and 1971.

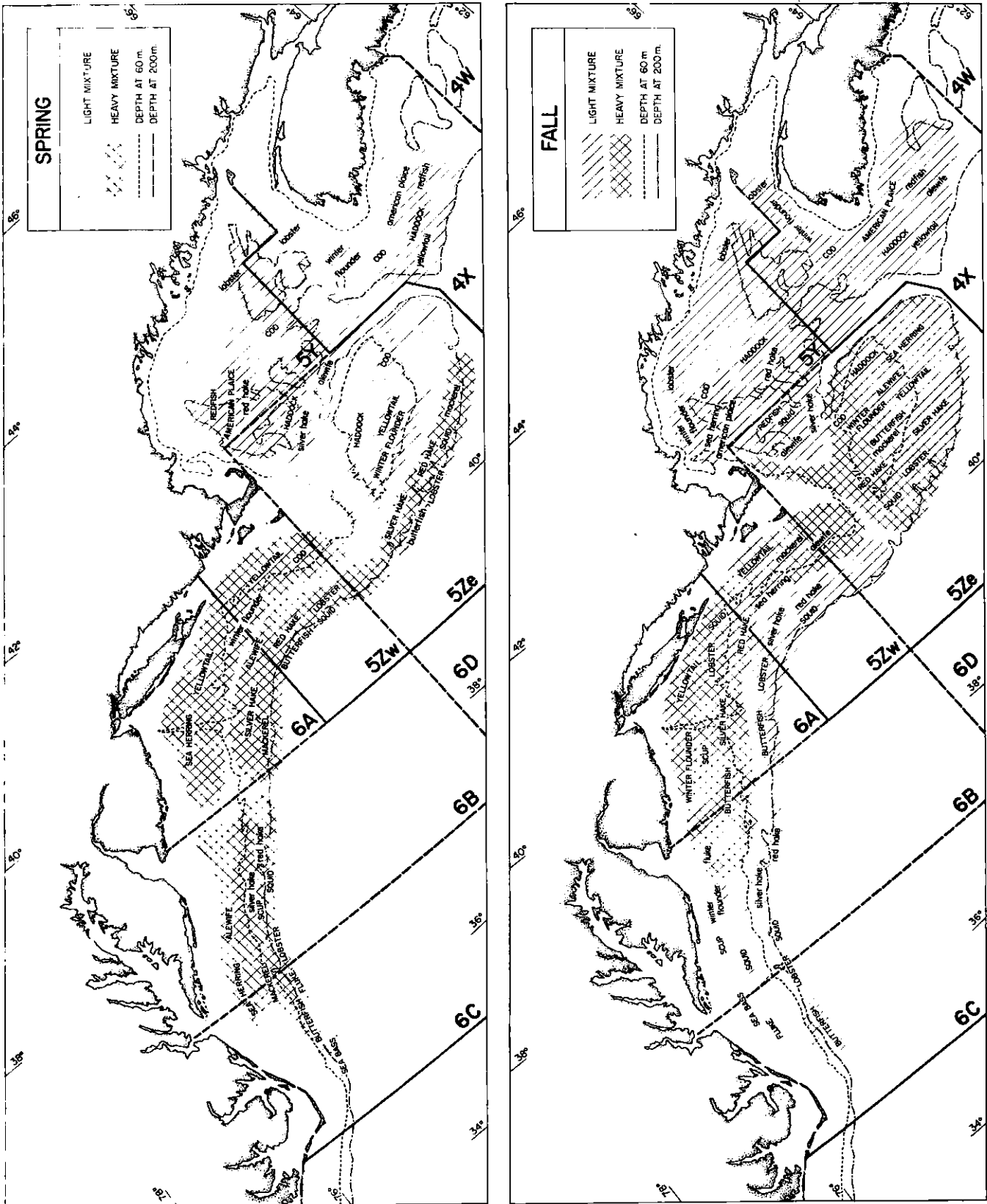


Figure 4. Generalized picture of mixture of important species vulnerable to bottom trawling - based on plots of individual catches of groundfish surveys. (see Appendices for sample plots)