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ESCAPEMENT OF FLATFISHES IN TRAWL PARTS FORWARD OF THE CODEND

by

Fred E. Lux

U.S.A. National Marine Fisheries Service

Woods Hole, Massachusetts 02543

The escapement of small fish through otter trawl meshes of sufficient size has been clearly demonstrated for numerous species including flatfishes (Todd, 1911; Davis, 1934; Herrington, 1935; Clark, McCracken, and Templeman, 1958). Some of the studies have shown that most of the escapement takes place in the codend, and this appears to be particularly true in the case of flatfishes. Thus Todd (1911), using fine mesh covers over the square, upper belly (batings), and codend, found that only about 0.5% of the flatfishes escaping escaped through the square and about 1 or 2%, through the upper belly. Ellis (1963) determined, through attaching covers to various parts of the trawl, that escapement of long rough dab, Hippoglossoides platessoides, was about nil forward of the codend. Margetts (1963), also using the cover method, found that in dab, Pleuronectes limanda, about 13% of the escaping fish went through the upper belly, while almost all of the other 87% escaped through the codend. Beverton (1963) showed that within the codend itself, about 95% of the dab escaping did so in the after one-quarter of the codend. This further indicated that fish make few attempts to escape until they reach the end of the net. Clark, et al. (1958) stated that escapement in net parts forward of the codend is restricted to smaller sizes of fish than is escapement in the codend itself. Observations of fishing gear in operation by divers and with cameras, such as in the film Fish and the seine net, lead to conclusions similar to the above.

In view of the preceding, it is common practice in selection studies to deal only with selection in the codend.

There have been no studies of escapement of yellowtail flounder, Limanda ferruginea, forward of the codend. During codend mesh selection studies in 1967, however (Lux, 1968), it was noted that when the net was brought aboard after a haul there were sometimes a few yellowtail gilled in meshes of the upper belly and wings, indicating that some fish escape there. The numbers gilled in those areas were small, however, compared with those gilled in the codend. The behavior of yellowtail within the net therefore probably is similar to that described above for other flatfishes, and escapement in forward net parts is relatively small.

Literature cited

Beverton, R. J. H. 1963. Escape of fish through different parts of the cod-end. ICNAF Spec. Publ. No. 5:9-11.

Clark, J. R., F. D. McCracken, and W. Templeman. 1958. Summary of gear selection information for the Commission area. ICNAF Ann. Proc. 8:83-98.

Davis, F. M. 1934. Mesh experiments with trawls, 1928-1933. Min. Agric. and Fish., Fish. Invest., Ser. II, 14(1):1-56.

Ellis, R. W. 1963. Experiments to investigate the escape of fish through the meshes of different parts of the trawl. ICNAF Spec. Publ. 5:97-101.

Herrington, W. C. 1935. Modifications in gear to curtail the destruction of undersized fish in otter trawling. U.S. Bur. Fish., Invest. Rep. No. 24:1-48.

Lux, F. E. 1968. Codend mesh selection studies of yellowtail flounder, Limanda ferruginea (Storer). ICNAF Redbook, Part III: 101-109.

Margetts, A. R. 1963. Escapes of fish through component parts of trawls. ICNAF Spec. Publ. 5:158-165.

Todd, R. A. 1911. Covered net experiments. Mar. Biol. Assoc. U.K., Int. Fish. Invest., 3rd Rep. (southern area), 1906-1908: 177-206.