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Long-distance migration of a short-finned squid (Illex illecebrosus)

by

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#### Abstract

The late-season recovery off the coast of Maryland of a short-finned squid tagged at Twillingate, Notre Dame Bay, Newfoundland represents the greatest distance travelled and longest time of tag retention recorded for Illex illecebrosus to date. This migrant had travelled at least 1260 miles in 107 days. The significance of this tag-recovery with respect to stock identity and autumn offshore migration is noted.

#### Introduction

Short-finned squid range in the Northwest Atlantic between central Florida and southern Labrador. Young squid are found in February-March in the vicinity of the northern boundary of the Gulf Stream (Fedulov and Froerman, MS 1980; Amaratunga et al., MS 1980). They occupy the continental shelf in May-June and support substantial fisheries inshore as well as on the continental shelf during summer-autumn. On the northeastern coast of the United States and Nova Scotian Shelf the major fisheries are prosecuted offshore, whereas in NAFO Subarea 3 the greatest proportion of catches occur inshore at Newfoundland. In November-December short-finned squid abandon inshore areas and the continental shelf presumably to spawn and die. Longevity for this species is believed to be approximately one year (Hurley and Beck, 1979).

Stock relationships for this species are presently not known but it is generally believed that populations in United States and Canadian waters are components of a single stock (Lange, MS 1979).

The long-distance migration of a tagged short-finned squid, reported in this paper, resulted from the 1979 squid tagging program conducted by Department of Fisheries and Oceans, Newfoundland Region. As part of 1979 tagging activities 13,490 squid were tagged during July-September at various localities around insular Newfoundland (Hurley and Dawe, MS 1980). This particular specimen was one of approximately 200 squid tagged at Twillingate, Notre Dame Bay (NAFO Statistical Area 3K) on September 6, 1979 (Fig. 1). Squid were captured using a Japanese mechanical jigger and tagged immediately. An anchor tag bearing a code number and a return address was applied to the dorsal region of the collar of each squid before being liberated. Other particulars of tagging methodology are described by Hurley and Dawe (MS 1980).

#### Results

One of these squid, tagged September 6, 1979 at Twillingate was recovered in NAFO Div. 6B at 38°14'N, 73°41'W, approximately 65 miles off the coast of Maryland on December 22, 1979 (Fig. 1). It was recovered using bottom trawl by the Taiyo Fishery Co. Ltd. stern trawler BANSHU MARU No. 7 at a depth of 150 m. This recovery represents the record longest distance travelled by a tagged squid, a minimum distance of 1260 miles, and the longest time of tag retention, 107 days. Minimum rate of travel for this squid was approximately 12 miles per day, a rate exceeded by only one previously reported long-distance recovery (Hurley and Dawe, MS 1980). The longest distance of migration previously reported was for a squid which travelled from Fortune Bay, Newfoundland to Cape Egement, Cape Breton Island a distance of 225 miles. Maximum tag retention previously recorded had been 62 days (Hurley and Dawe, MS 1980).

Late season southward migration of this squid is consistent with the belief that short-finned squid leave inshore Newfoundland in late autumn to migrate to the spawning ground. Spawning is believed to occur in January-February, south of Newfoundland, probably in the vicinity of the Gulf Stream. Two earlier recoveries from squid tagged August 22, 1979 at Twillingate indicated an early-season northward movement from the tagging site (Hurley and Dawe, MS 1980).

The recovery of a tagged short-finned squid off Maryland represents the longest distance of migration and the longest time of tag retention recorded to date. Migration of a squid over the greater portion of the range of the species supports the popular contention that Illex illecebrosus in the Northwest Atlantic constitutes a single stock.

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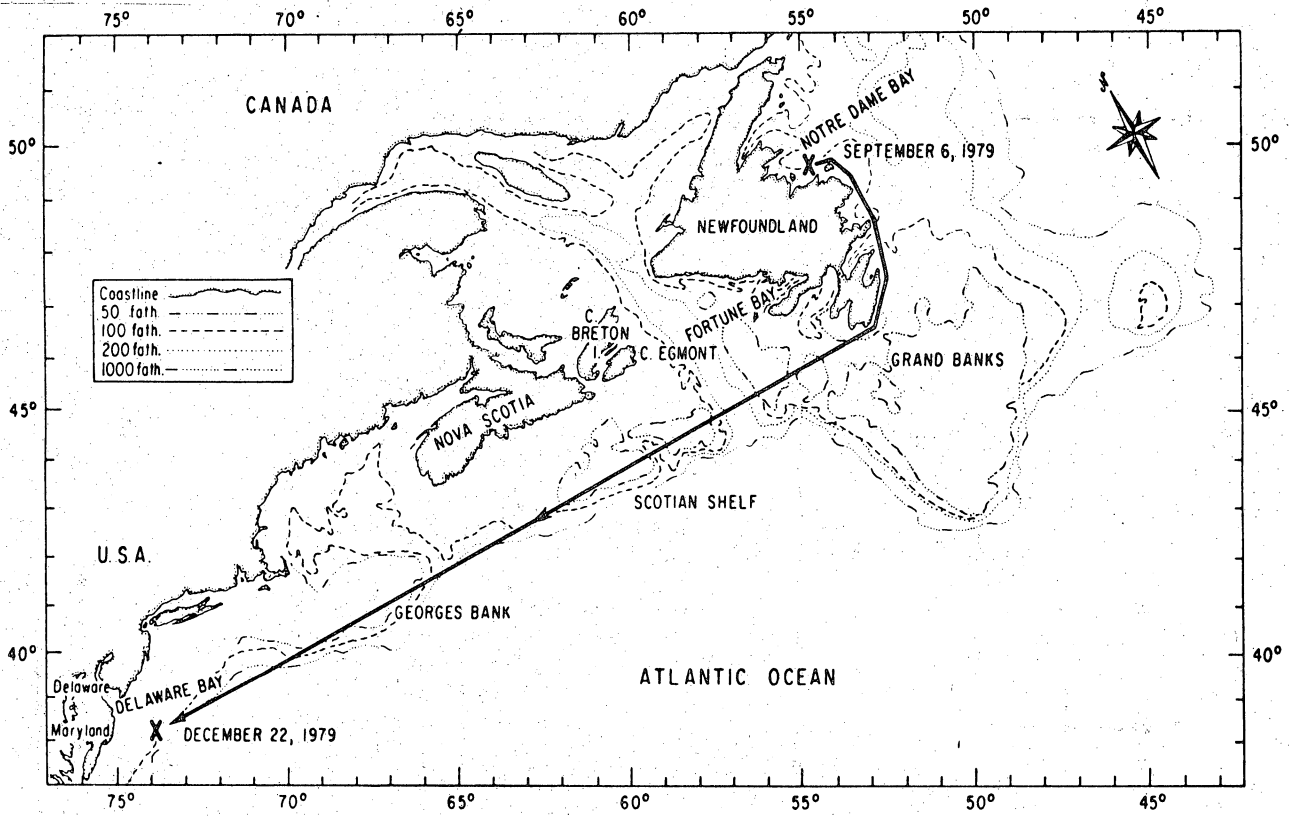


Fig. 1. Map of the Northwest Atlantic indicating shortest possible migration route from tagging locality to recapture site.