

Piloting a Low-Bycatch Commercial Squid Jig Fishery in Southern New England

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Background

Robust International Fisheries



High Seas



Coastal Waters

History of Regional Trials

Experimental Jigging for Squid off the Northeast United States

DOUGLAS LONG and W. F. PATHEEN

Introduction

Light attraction jigging is a fishing technique specifically developed for catching squid. Jigging for squid is one of the most important methods used in coastal squid fisheries in Japan. In Japan about 95 percent of the common squid, *Loligo pealeii*, which represents a major part of the squid catch, is caught by Jigging (Ogino and Misugi, 1976).

In North America there has been a traditional fishery for squid in Newfoundland where recent catches have approached 90,000 t annually. Experimental squid fishing using jigging and light attraction has also been conducted in near-shore New England situations through the New England Fisheries Development Program (Amers and Carr, 1980) and in the Gulf of Mexico (Bathen et al., 1979). During 1978 and 1979 the Canadian Government sponsored commercial level demonstration fishing for squid using Rigs in the waters east of Nova Scotia. Early reports of this experience suggested substantial catches could be made on a regular basis.

In 1973, the Japan Marine Fishery Resource Research Center sent the R/V *Hosoi-Maru No. 43* in 1974 and 1975 to conduct exploratory squid jigging trials

G. V. Dufley, Department of Fisheries and Oceans, St. John's, Nfld., Canada, Principal Investigator, New 29th Sea Grant (1984), (Ottawa, Ontario, Fisheries Research Board, Department of Fisheries and Oceans, P.O. Box 500, Halifax, Nova Scotia, Canada, Principal Cooperator.

Cape Hatteras in the Grand Banks. Fishing south of Georges Bank along the edge of the continental shelf yielded 105,475 kg (232,543 pounds) of *Illex illecebrosus* in 112 days of fishing (Hidkawa and Sato, 1976). These catches were taken in July and September of 1973 and 1974, respectively.

The Polish Deep Sea Fisheries Company Ultra equipped three of their vessels with Japanese squid jigging gear to conduct exploratory fishing. Their investigations began in May near the

Falkland Islands in the South Atlantic. Successful catches of *Illex argentineus*, with daily catches in excess of 8,000 kg (17,600 pounds) were made. Each vessel spent about 45 days working there, after which two of the vessels proceeded to the Fishery Conservation Zone (FCZ) off the U.S. northeast coast to investigate areas along the continental slope from Cape Hatteras to southeast of Cape Cod. The following is a presentation of observations of their squid jigging operations made while on board these Polish vessels during August and September 1979.

Fishing Vessels and Gear

The *Węgr 589-472* (Fig. 1), built in 1962, is a 61-m (200-foot) side trawler of 792 gross tons powered by a 1,275 horsepower engine. The *Marek 589-492* is a 69-m (226-foot) B-25 class

Duplec Jan is a 470 West Arctic, Ocea City, N.S. 2000, W. F. Bathen is with the Polish Deep Sea Fisheries Company, National Marine Fisheries Service, NOAA, P.O. Box 1099, Gloucester, MA 01930.



Figure 1.—Polish research vessel Węgr, 61 m long. Jigging gear is on the well deck.

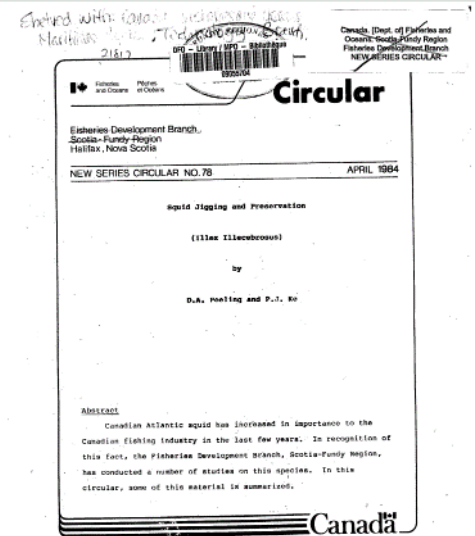


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Japan's Squid Fishing Industry

WILLIAM G. COURT

Introduction

Dried-squid (surume) has been an item of commerce, ceremony, and diet

Korea, Thailand, and Taiwan have established squid fisheries, a quality product, and good access to Japan's markets, and many other nations are

oceanographic changes, but it is now widely attributed to overfishing.

Increased catches by Japanese boats overseas has characterized the past 10

Rationale

Low Bycatch



Area Access

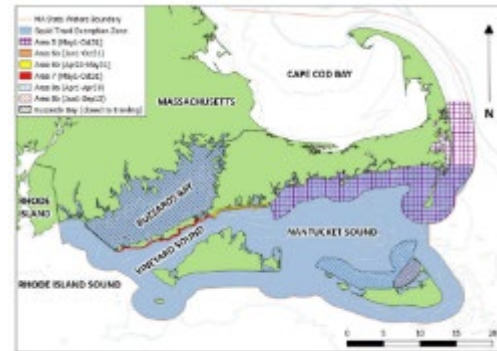


Figure 1. Massachusetts coastal small squid spatial use management areas. Source: STATEMP



Full Utilization/Market Expansion

- Longfin squid quota reached in only 31% of trimesters
- Potential for high value market



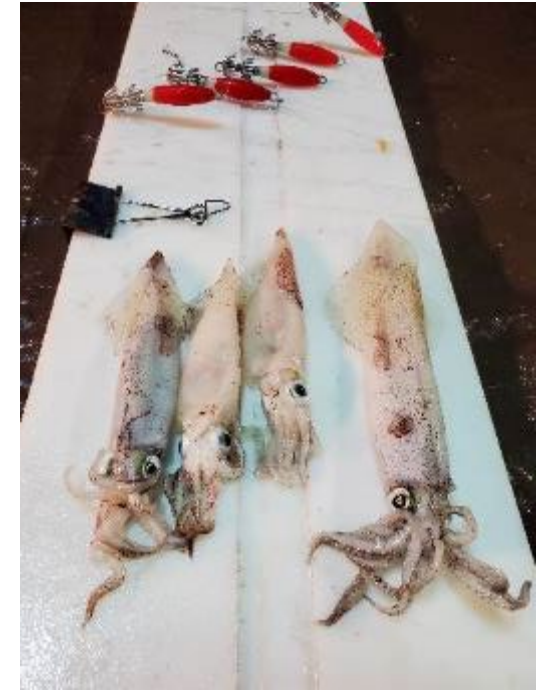
Gear



- 6 Squid Setups from Gaski Marine
 - \$3,850 each kit
- 100 lb – monofilament backing line
- 20-60 lb – monofilament jigging line
- 12-36oz Lead weights
- Swivel snapped to backing line
- Wired directly to boat battery

Catch

- Beginners luck
- No landings of commercial significance
- Size range: 8-30cm mantle length
- Could outperform w/ R&R
- High quality squid
- No Illex caught



Challenges: set-up, operations, & costs

- Little institutional knowledge
- Timing sea trials with daytime commercial trawling
- Jigs lacked precision
 - Look into alternative machines used in international fisheries
- Retrofit portability
 - High, unexpected costs for custom welding
 - Needed to redesign when gear was lost
- Industrial lighting fixtures were expensive



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Challenges: environmental & biological

Environmental Factors

- Moon Phases
- Tide
- Temperature
- Swell/wind
- Salinity
- Surface conditions



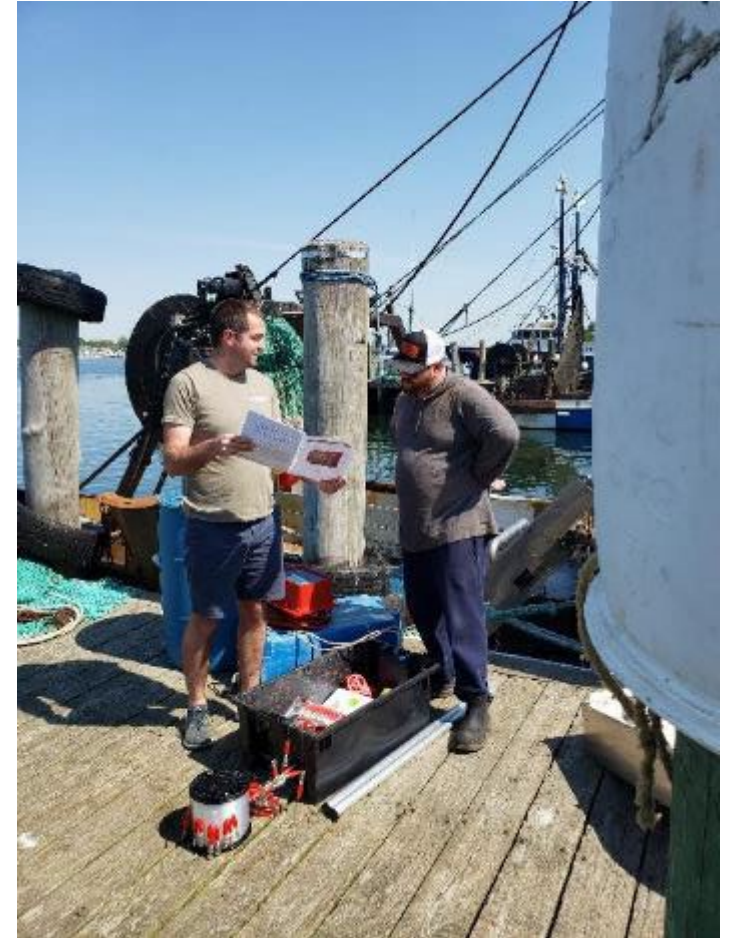
Biological

- Predation
 - Dolphins (Long Island Sound)
 - Seabirds
- Life/reproductive cycles



Next Steps & Discussion

- Knowledge exchange
- Seek expert industry input
 - International fishing fleets
 - Charter boats
- Trial other commercially used gear
- Develop/Investigate market niche for large, high-grade squid



Thank you!

- Clarke and John Reposa owners/captains of the F/Vs Miss Edi, Hadley Ruth, and Mattie and Maren
- Crew of the vessels

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- Mid-Atlantic Fishery Management Council (MAFMC)

