

Construction and operational efficiency of a  
“Two-seam 200 mesh x 30cm Monkfish Trawl”

Report submitted to:

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2003 Cooperative Research Project Development Proposal

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## Introduction

While under the current Monkfish Fishery Management Plan, implemented in 1999, stocks are reaching their predictive biomass targets, there is a need for a clean monkfish fishery, i.e. a fishery that will catch marketable monkfish without bycatch of other groundfish species or undersized monkfish. Evidence of a clean monkfish fishery will also be useful in crafting Amendment 2 by the NEFMC Monkfish Advisory Panel and Monkfish Oversight Committee, part of which would 'de-link' monkfish days-at-sea from groundfish and scallop days-at sea.

This project was designed to provide solid data on the efficiency of a large mesh (10") codend, built specifically to target monkfish and expected to produce minimal, if any, bycatch.

The project was a pilot study for the specified codend and aimed at producing current, accurate data, recorded by qualified individuals, to be presented at the council for use in the process of Amendment 2.

## Methodology

The net was constructed following the guidelines requested by the council for a two-seam 200 mesh x 30 cm Monkfish Trawl.

For the purpose of testing the performance of this novel net, the pilot project was conducted targeting monkfish in the Gulf of Maine, specifically in Wilkinson Basin.

The purpose-built codend (specs) was towed by the F/V *Theresa & Allyson* for 2 days during March 2004. During this trip, 10 hauls were performed, with an average duration of 1 hour and 58 minutes.

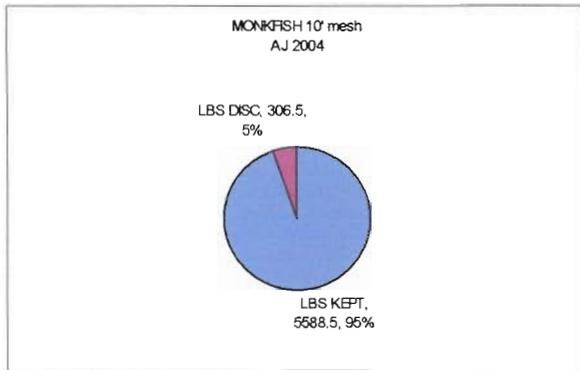
## Results

Pooling data from all the hauls, the catch obtained during this trip is shown in the following table.

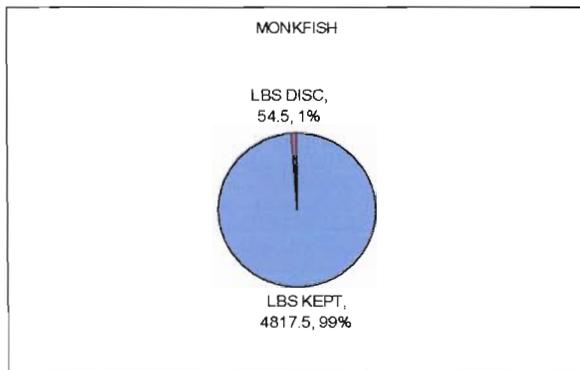
MONKFISH	4817.5	54.5	4872
WHITE HAKE	757	0	757
DAB	14	0.8	14.8
HALIBUT*	0	25	25
LUMPFISH	0	39	39
LOBSTER+CRAB	0	61.2	61.2
DOGFISH, SPINY	0	5	5
SKATE, THORNY	0	116	116
SILVER HAKE	0	5	5
total	5588.5	306.5	5895

\* released alive

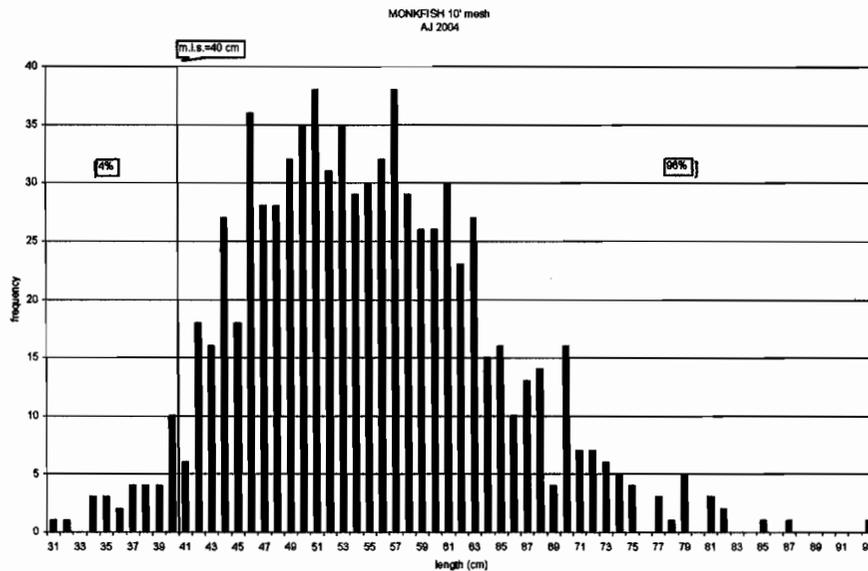
The experimental codend had an overall bycatch rate equal to 5% of the total catch.



In terms of monkfish, the target species, individuals below the m.l.s. of 40 cm total length (based on the regulatory tail m.l.s. of 11"), made up 1% of the monkfish catch in weight. These fish were discarded at sea.



All monkfish were individually measured. The length frequency distribution is shown in the following chart.



In terms of number of individuals, 4% of all monkfish caught were below m.l.s. and had to be discarded at sea.

### Discussion

This pilot project has shown clearly that a large mesh codend has the potential of greatly reducing bycatch rates, in terms of: a) non-target species and b) undersized monkfish, the target species.

During this study, overall bycatch rate was 5%, and no at-risk ground fish species were impacted. Bycatch rate of undersize monkfish was 1%, in terms of weight (equivalent to 4% in terms of number of individuals caught). While there were no control tows to compare these results to, it is known from other similar studies that a regulatory 6 1/2" mesh codend has much higher overall bycatch rates (up to 50%) and a bycatch rate of undersized monkfish also ranging from 40 to 50% (Glass, in prep.).

These promising results are worth further exploration, in order to assess and quantify the potential to achieve a clean monkfish fishery by using this purpose built large mesh codend. Further trials with adequate controls will be required to produce more definitive results



SKATE, NK  
WHITE-SIDED DOLPHIN  
TOTAL

0	0	0	0	0	181	0	5
4017	367	977	315.2	1048	283	4255.5	924.05

\* different net used this month (12")

C16M39	FEB
KEPT	DISCARD
519	12
0	216
0	0
802	48
0	132
0	0
670	37.5
382.5	21
0	0
7324	0
0	0
0	205
0	28
5883	278
0	4
1765	0
14	19
0	4
0	0
0	0
0	0
0	0
0	0
0	201
17359.5	1203.5

D05M39	FEB
KEPT	DISCARD
46	0
0	9.25
88	3.5
0	3100
0	5
26.5	0.5
0	0
0	0
499	0
0	0
0	42
0	36
3456	52
17	0
0	0
0	0
0	0
0	52
0	331
0	0
0	0

0

0

4132.5 3631.25