

GEAR TRIALS IN THE NORTHERN IRELAND *NEPHROPS* FISHERY (Phase 2)

(Project No CO4/039733/06)



Department of
**Agriculture and
Rural Development**
www.dardni.gov.uk



European Union
Structural Funds



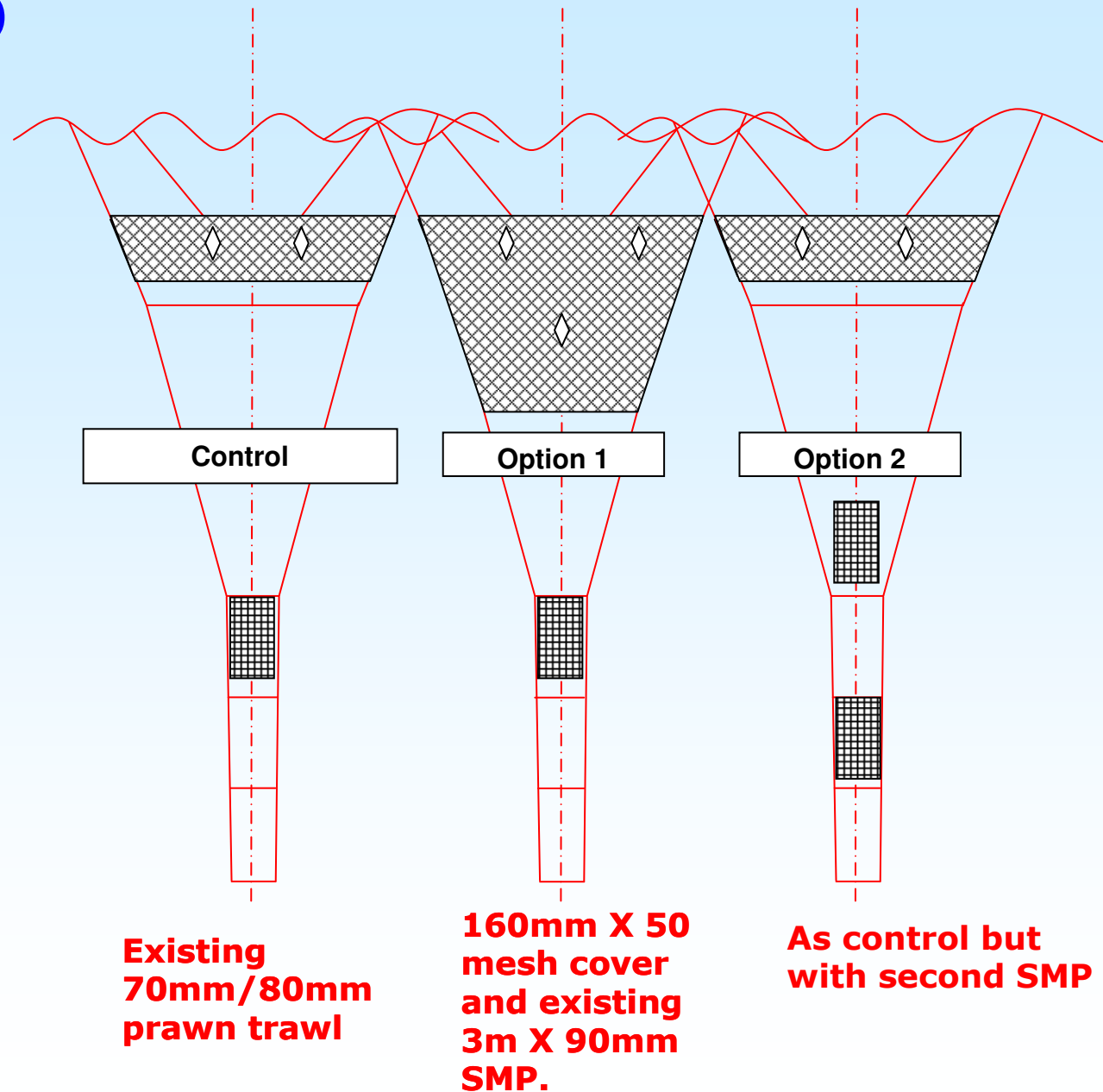
**Building
Sustainable
Prosperity**



BACKGROUND

PHASE 1:

Results indicated that neither option had a significant affect on catches.



PHASE 2

Project Steering Group

Walter Crozier	AFBI
Richard Briggs	AFBI
Pieter-Jan Schön	AFBI
Terry Cunningham	TC Nets
Jim Hamilton	James Hamilton Trawl Nets
Ian Humes	DARD
Paddy Campbell	DARD
Dick James	NIFPO
Ian Kelly	NIFPO
Alan McCulla	ANIFPO
John Cassidy	ANIFPO
Norman Graham (by Video link)	Marine Institute (Gear Technologist)

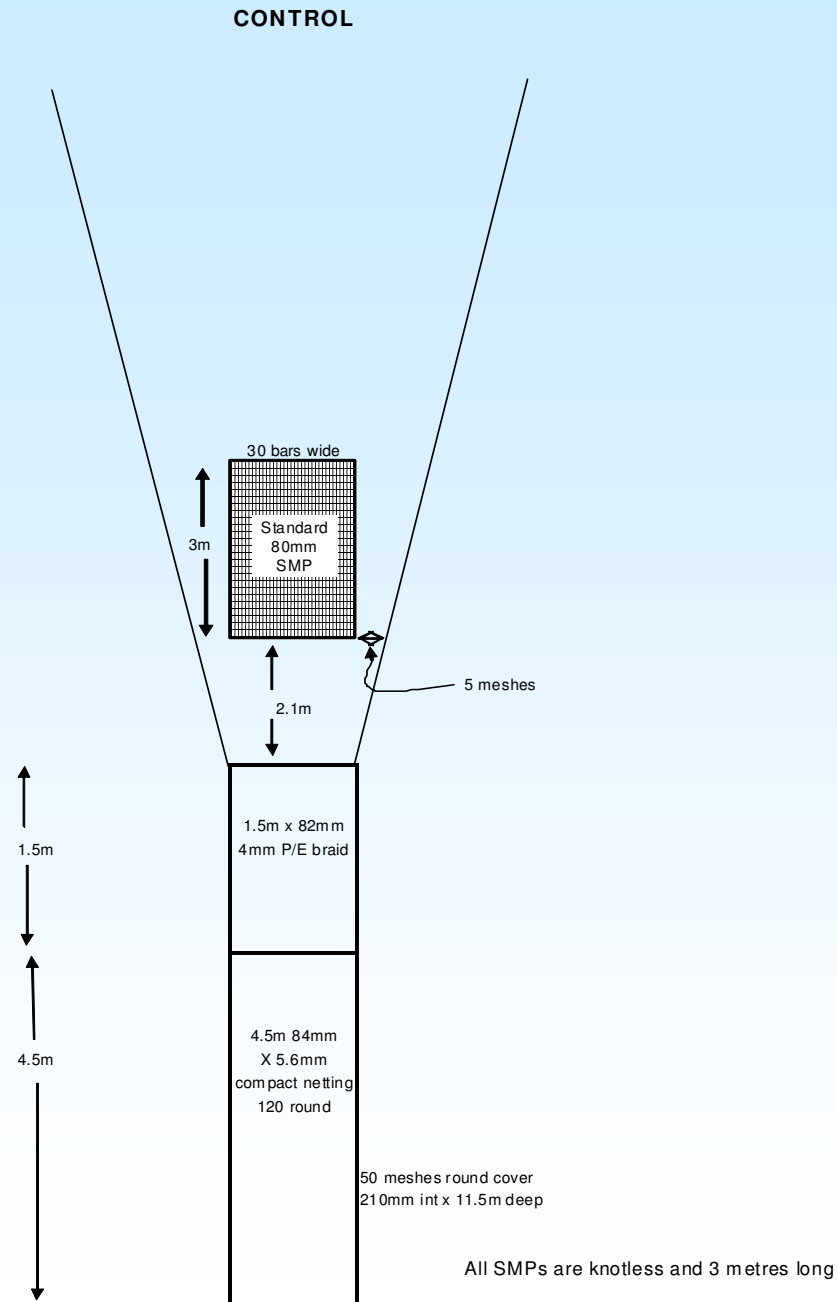
Skipper of *MFV Carreen*: Andrew Annett

Observers: Gary Dunlin
Gary Hughes
Robert Phillips

CONTROL GEAR

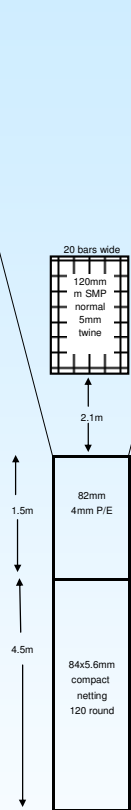
Standard *Nephrops* net

Standard 80mm SMP
2.1m from extension



EXPERIMENTAL OPTIONS

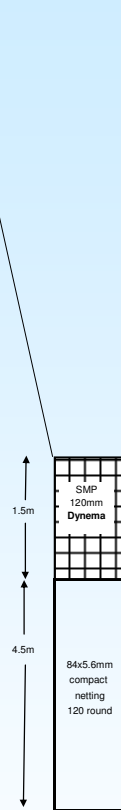
EXPT 1
120mm SMP - Usual position



Expt 1

120mm SMP
2.1m from extension
12 tows

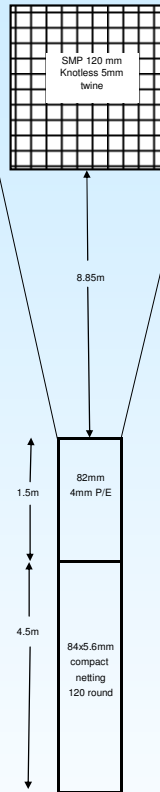
EXPT 2
120mm Dynema



Expt 2

120mm SMP of Dynema
near codend
12 tows

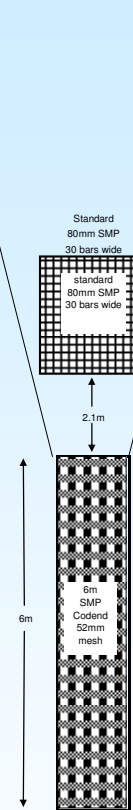
EXPT 3
120mm SMP in ROI position



Expt 3

120mm SMP
8.85m from extension
13 tows

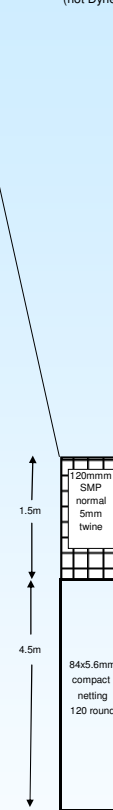
EXPT 4
SMP codend



Expt 4

80mm SMP
2.1m from extension
Square Mesh Codend
12 tows

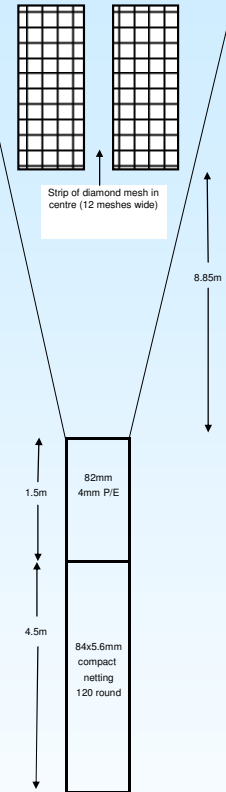
EXPT 5
120mm SMP (not Dynema)



Expt 5

120mm SMP normal mesh
near codend
4 tows

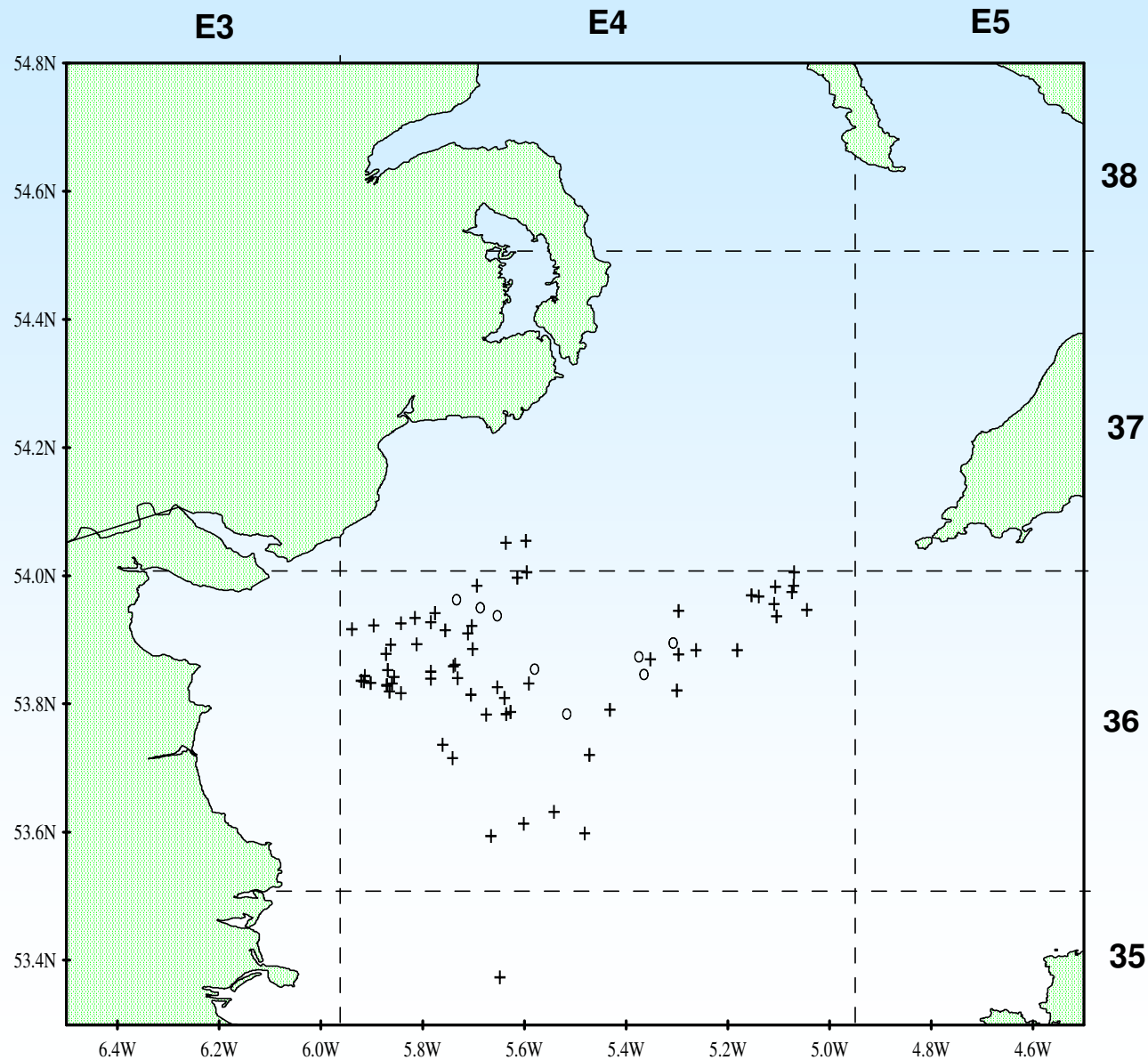
EXPT 6
120mm split SMP In ROI position



Expt 6

120mm split SMP
8.85m from extension
8+8=16 tows

AREA OF OPERATION: 15 September – 29 October 2008 (+) and extension study 2-5 March 2009 (o)



DATA PRESENTATION

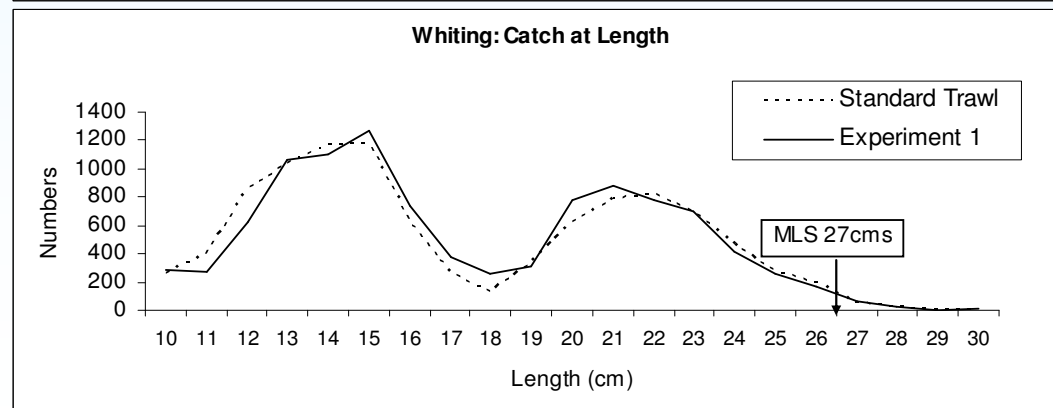
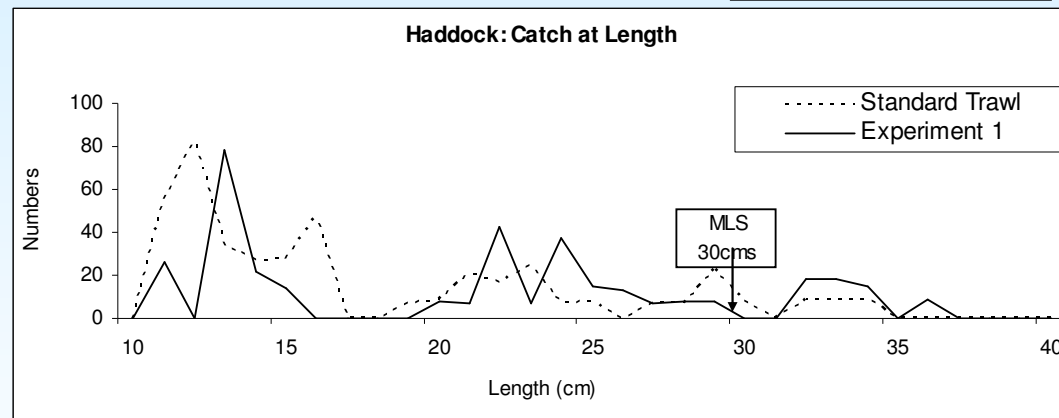
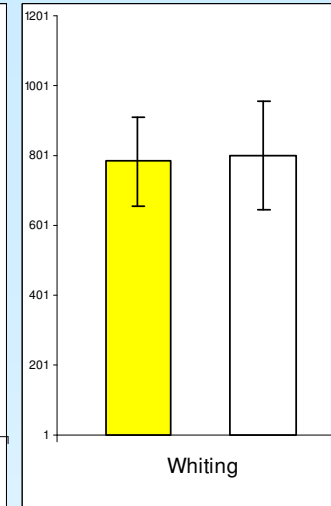
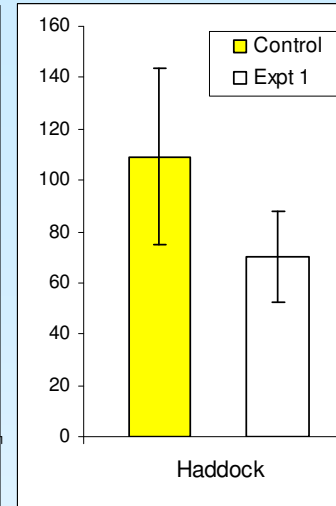
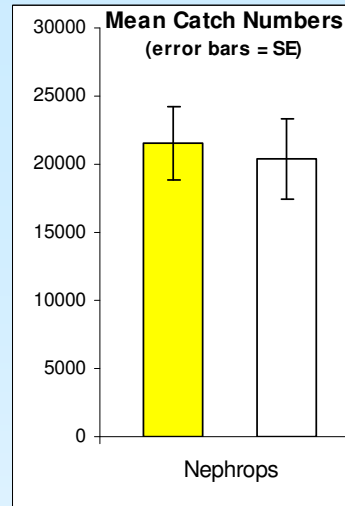
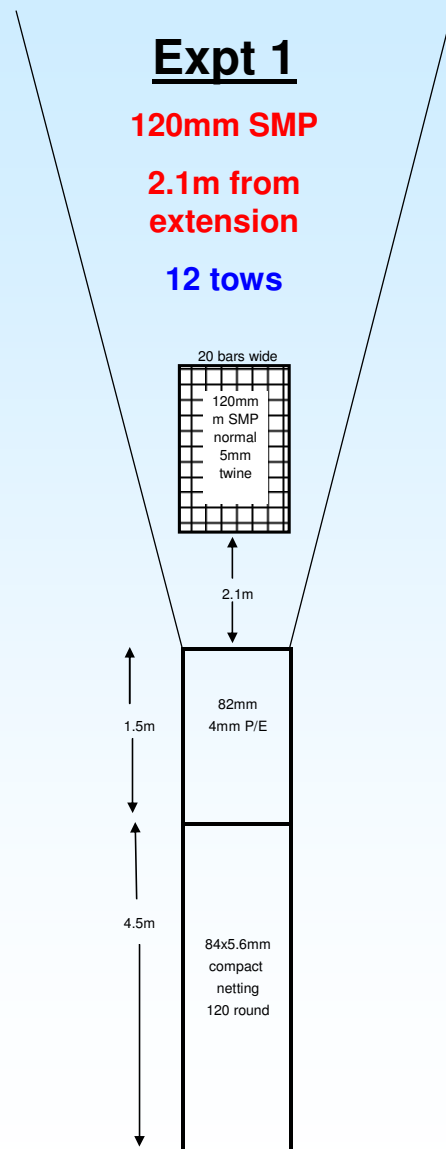
- (1) Catch Bulk
- (2) Catch at length *Nephrops*, Haddock and Whiting
- (3) Relative catch at length
- (4) Mean proportions P of total catch retained at length l :

$$P = \frac{C_{exp}}{C_{exp} + C_{control}}$$

C_{exp} and $C_{control}$ = catch numbers

If $P = 0.5$ no selection difference

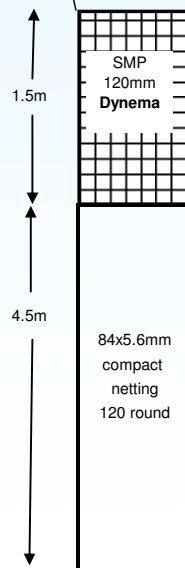
RESULTS



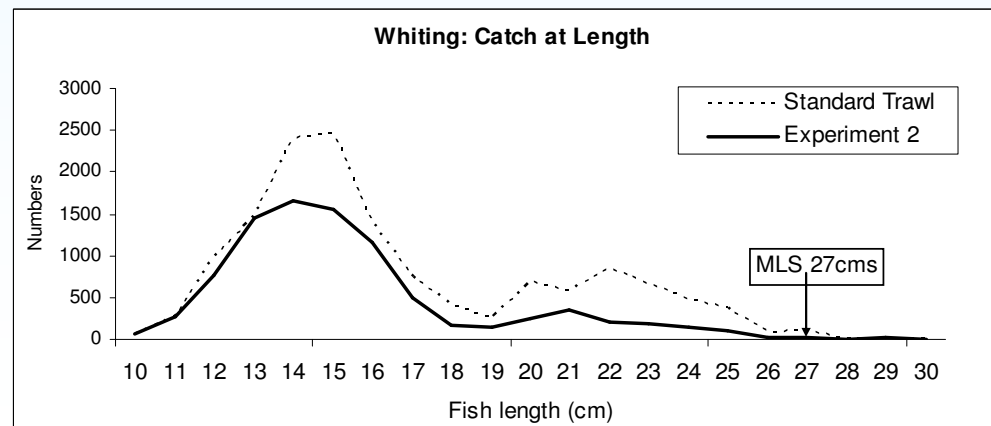
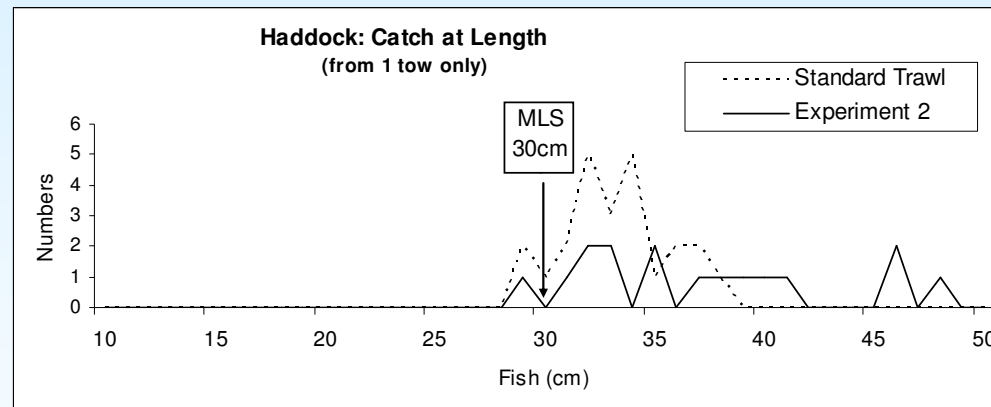
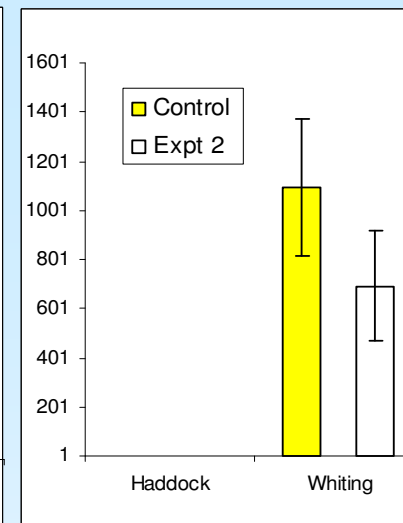
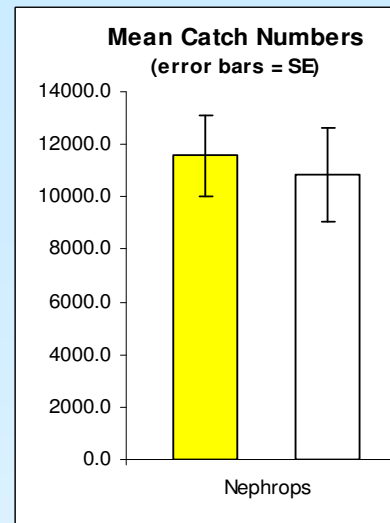
Expt 2

120mm SMP of
Dynema near
codend

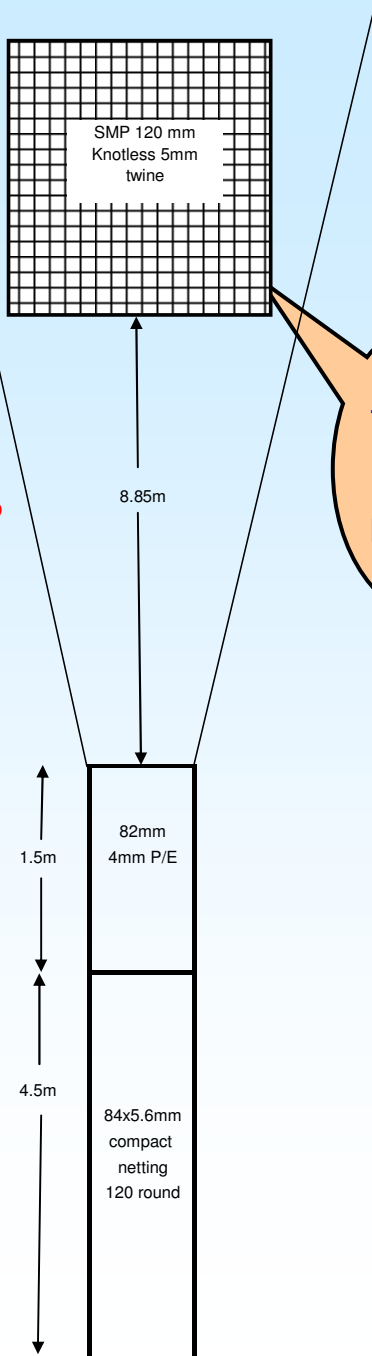
12 tows



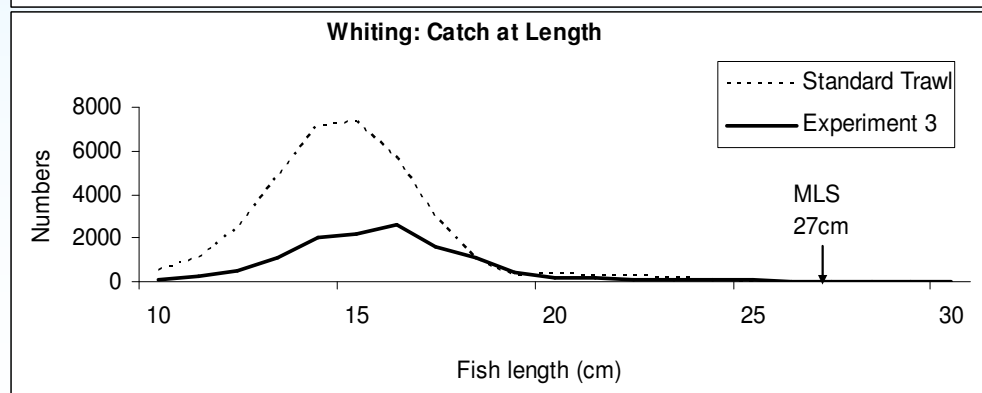
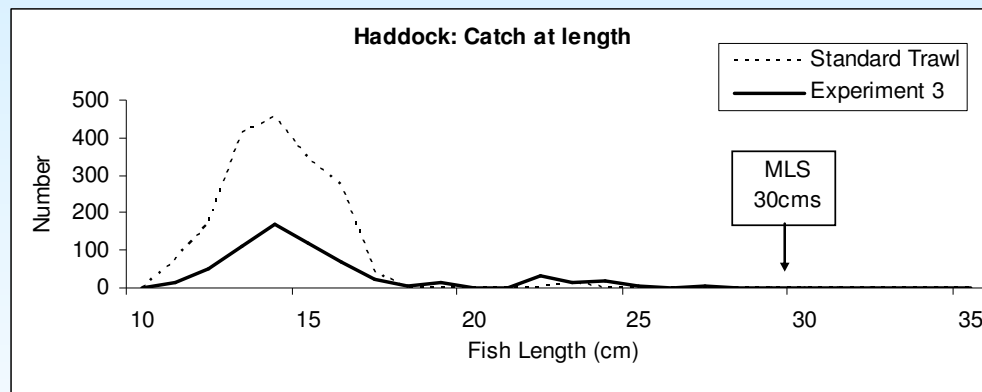
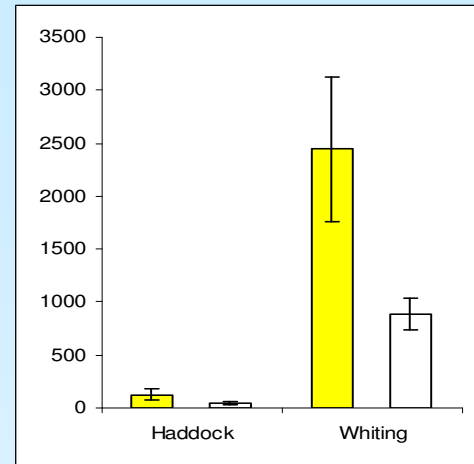
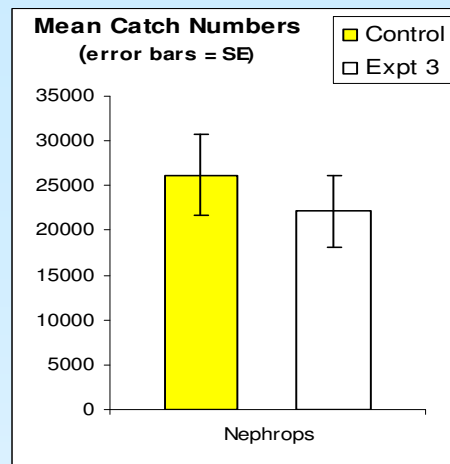
Note: Haddock only
caught in 1 tow



Expt 3
120mm SMP
8.85m from
extension
13 tows



**SMP
tended
to sag
(see
Expt 6)**

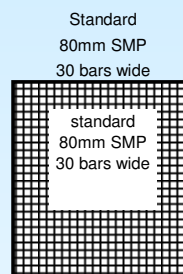


Expt 4

80mm SMP 2.1m
from extension

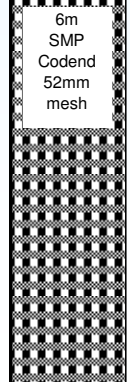
Square Mesh
Codend

12 tows

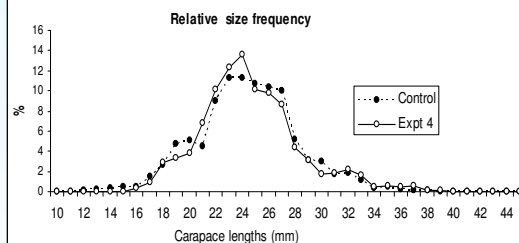


2.1m

6m

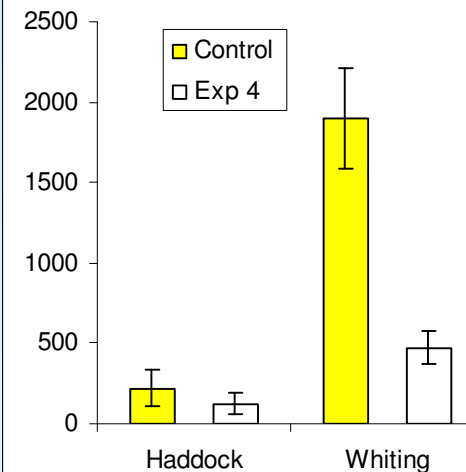
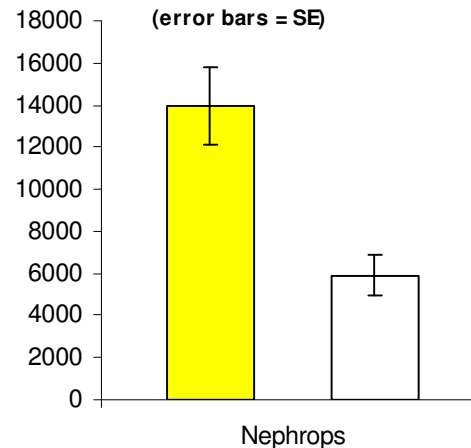


Nephrops: Relative size

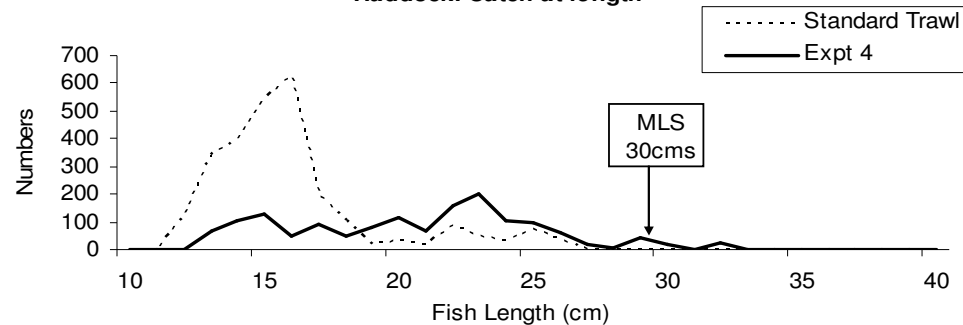


No improved *Nephrops* selectivity

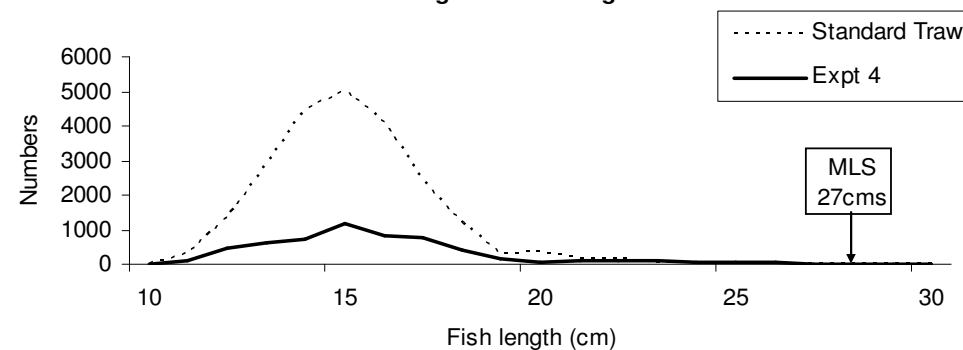
Mean Catch Numbers (error bars = SE)



Haddock: Catch at length



Whiting: Catch at length



Expt 4: Codend comparisons on hauling



80mm Diamond Mesh codend

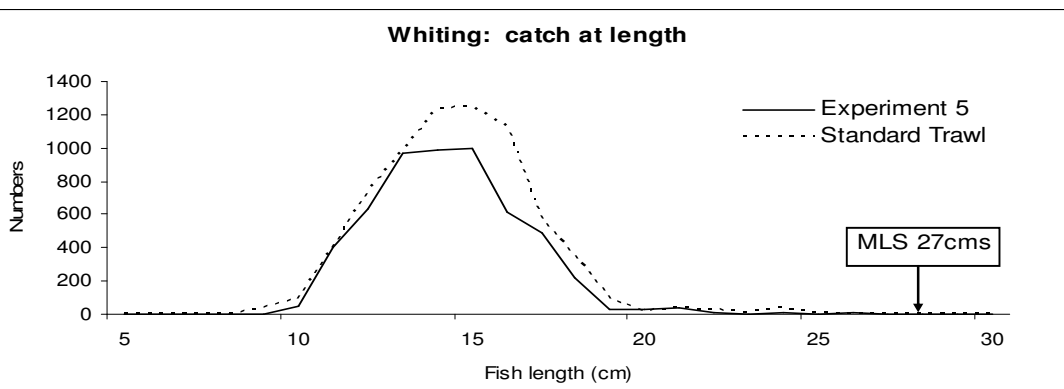
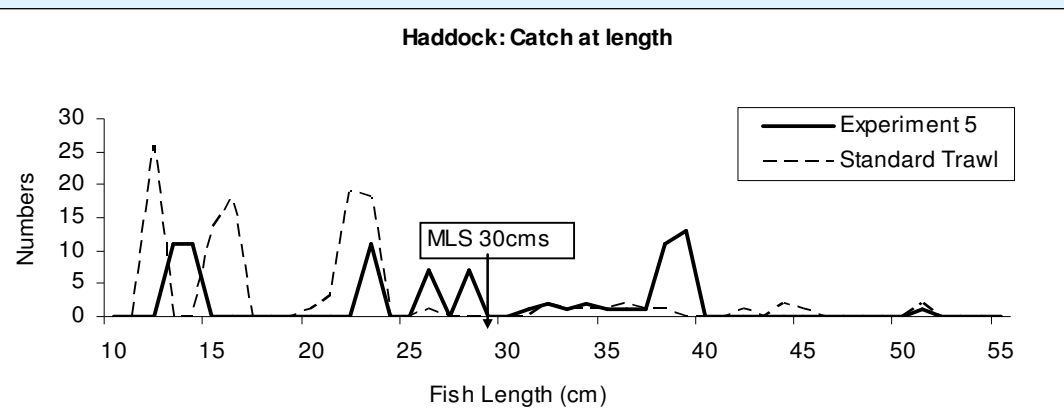
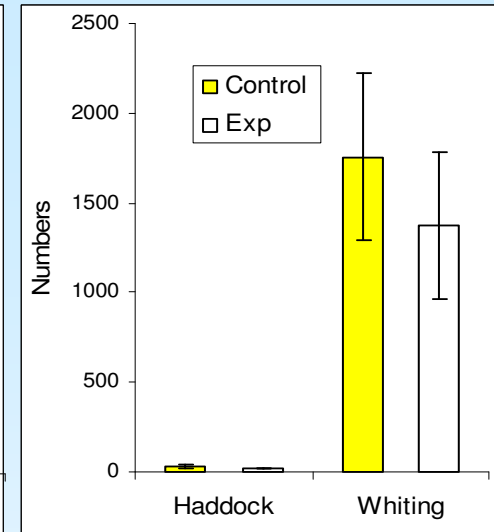
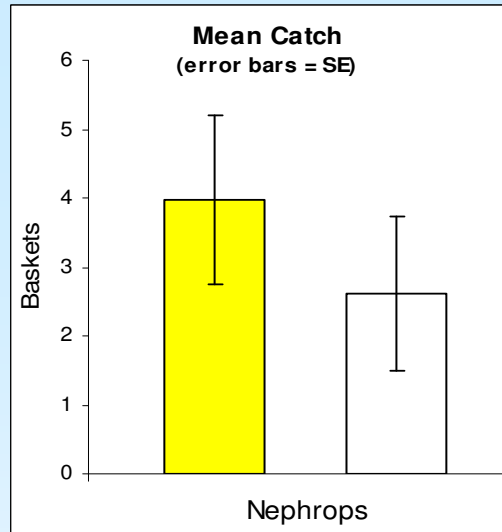
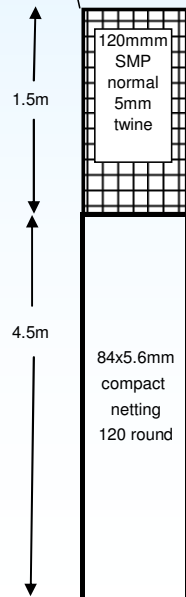


50-55mm Square Mesh codend

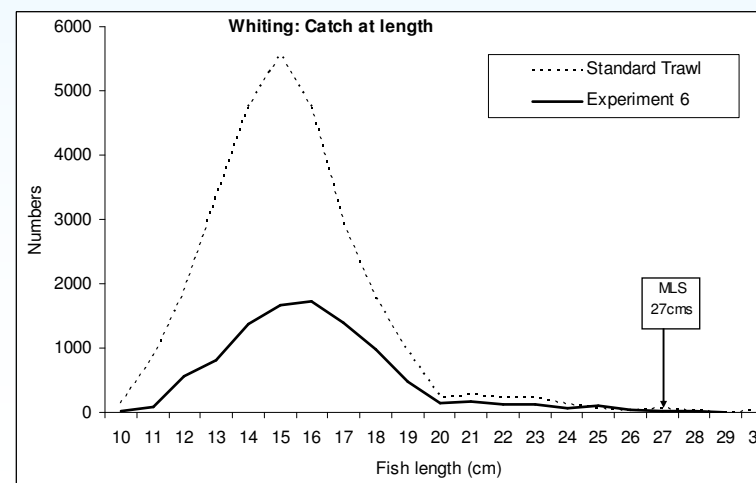
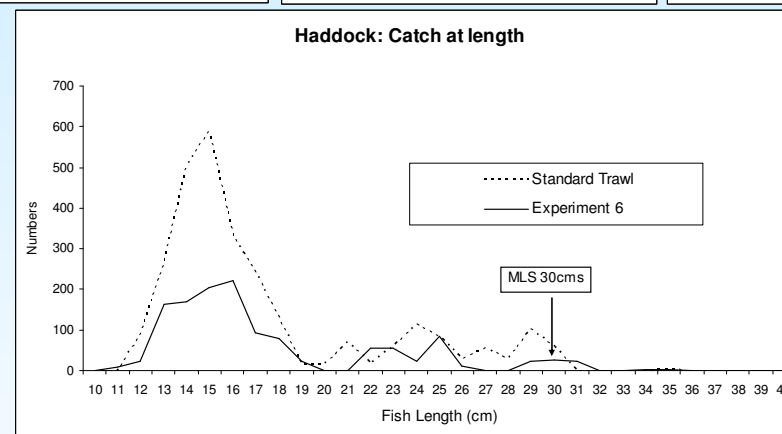
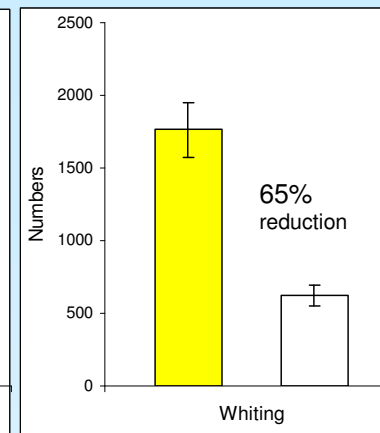
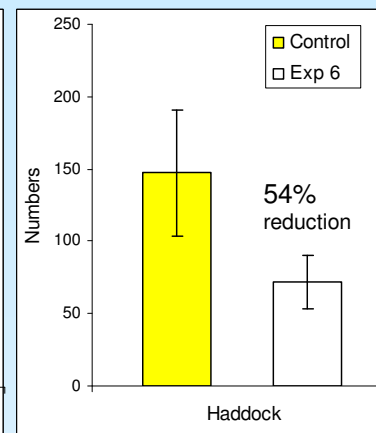
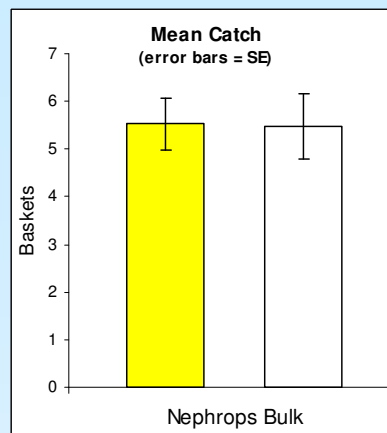
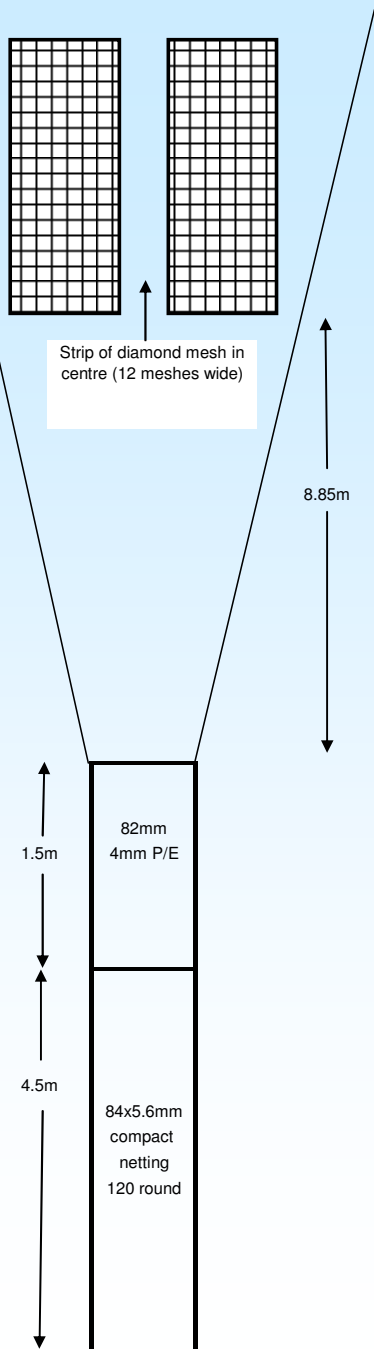
Expt 5

120mm SMP
normal mesh
near codend

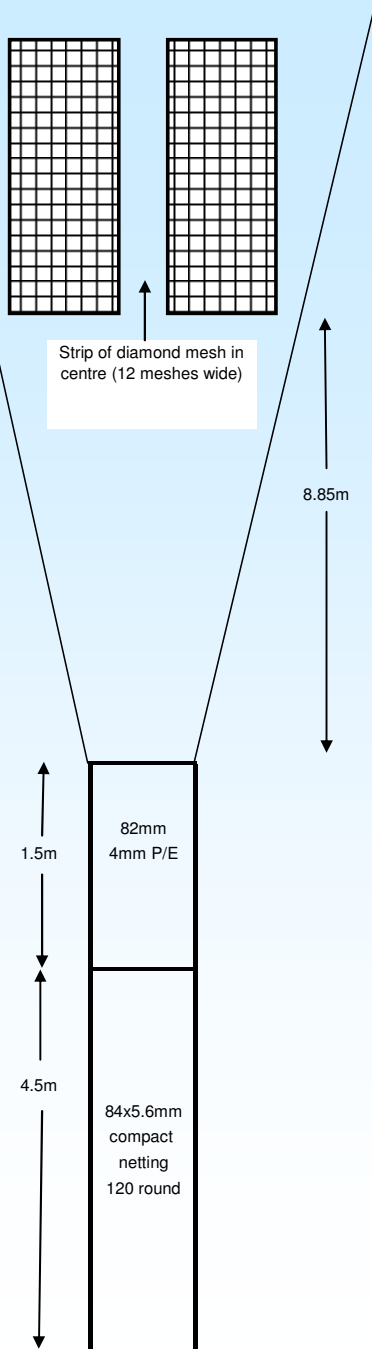
4 tows



Expt 6 **120mm split** **SMP** **8.85m from** **extension** **16 tows**

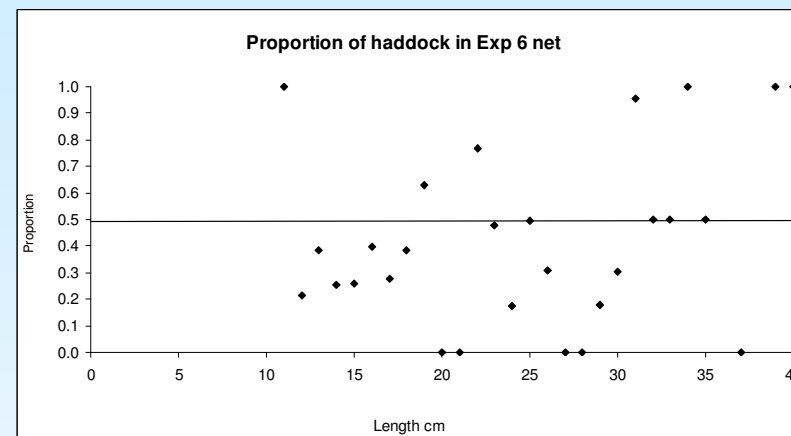


Expt 6
120mm split
SMP
8.85m from
extension
16 tows

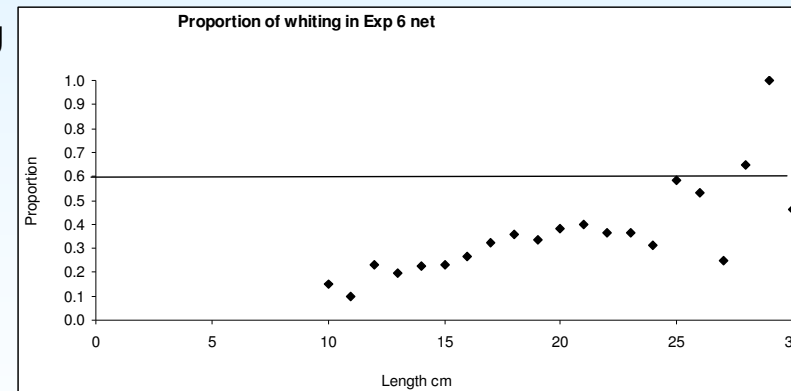


Proportions of total catch retained at length

Haddock



Whiting



Cod

Gear	Haul								Total
	9	10	11	12	13	14	15	16	
Exp 6	8	6	17	28	1	0	0	0	60
Control	8	30	3	2	0	0	1	1	45
Total	16	36	20	30	1	0	1	1	105

CONCLUSIONS

- Increasing the size of the SMP from 80mm to 120mm positioned 2m in front of the codend did not change the selection properties of the net.
- Significant escapes of juvenile haddock and whiting occurred when a 120mm SMP was inserted 8m from the codend extension. This reinforces the findings of earlier studies (Briggs *et al.*, 1996, Anon. 1996 and Armstrong *et al.*, 1998). The loss of some *Nephrops* with a 120mm SMP in this position could be due to sagging of the panel
- A 50-55 mm square mesh extension resulted in losses of 44% haddock, 75% whiting and 58% *Nephrops* by number
- SMP sagging was remedied in Experiment 6 by placing a 12 mesh strip of 80mm diamond-shaped netting between a halved SMP for support. This configuration reduced discards of juvenile haddock by 54% and juvenile whiting by 65% (number) with no loss of *Nephrops*.

