

# Northern Ireland Gear Trials Project 2017 - 2019



# The three main fishing harbours of Northern Ireland



# Aims

Design



Trial



Implement



More  
selective  
fishing  
gears



Full implementation  
of the Landing  
Obligation, January  
2019

- Reduce unwanted by-catch of quota species
- Avoid catching of juvenile fish species
- Retain commercially valuable target species



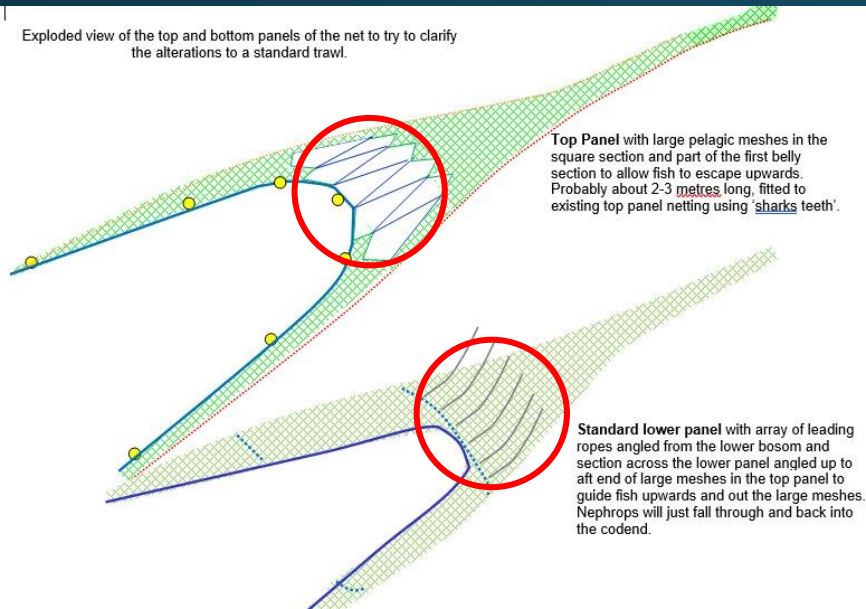
# New Technologies & Approaches

- Novel approaches to fishing activities.
  - Modifications to existing gear designs.
  - New gear designs.
  - Incorporation of new technology into gear....
- Lights.
  - Bubbles.
  - Sound.



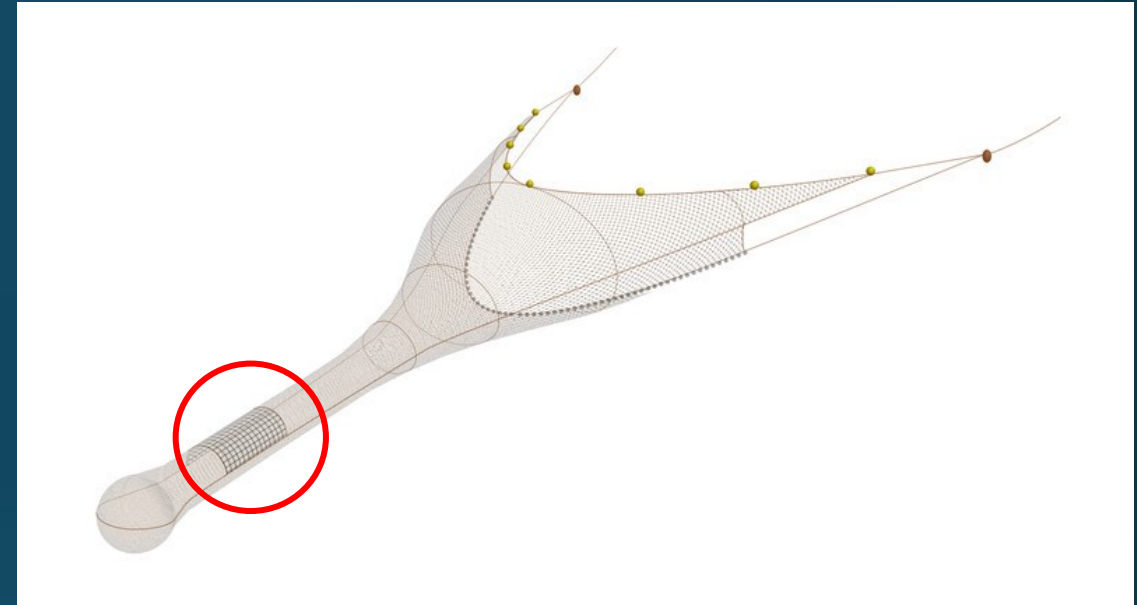
# Preliminary Trials - 2017

Exploded view of the top and bottom panels of the net to try to clarify the alterations to a standard trawl.



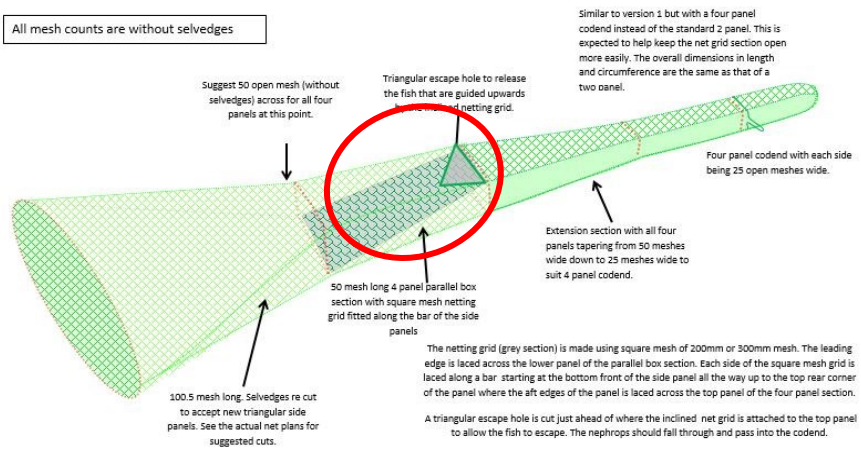
**Top Panel** with large pelagic meshes in the square section and part of the first belly section to allow fish to escape upwards. Probably about 2-3 metres long, fitted to existing top panel netting using 'sharks teeth'.

**Standard lower panel** with array of leading ropes angled from the lower bosom and section across the lower panel angled up to aft end of large meshes in the top panel to guide fish upwards and out the large meshes. Nephrops will just fall through and back into the codend.



Inclined Netting Grid - with a four panel codend fitted  
Short design with escape hole. (to release all fish)

All mesh counts are without selvages



Suggest 50 open mesh (without selvages) across for all four panels at this point.

Triangular escape hole to release the fish that are guided upwards through the inclined netting grid.

Similar to version 1 but with a four panel codend instead of the standard 2 panel. This is expected to help keep the net grid section open more easily. The overall dimensions in length and circumference are the same as that of a two panel.

Four panel codend with each side being 25 open meshes wide.

Extension section with all four panels tapering from 50 meshes wide down to 25 meshes wide to suit 4 panel codend.

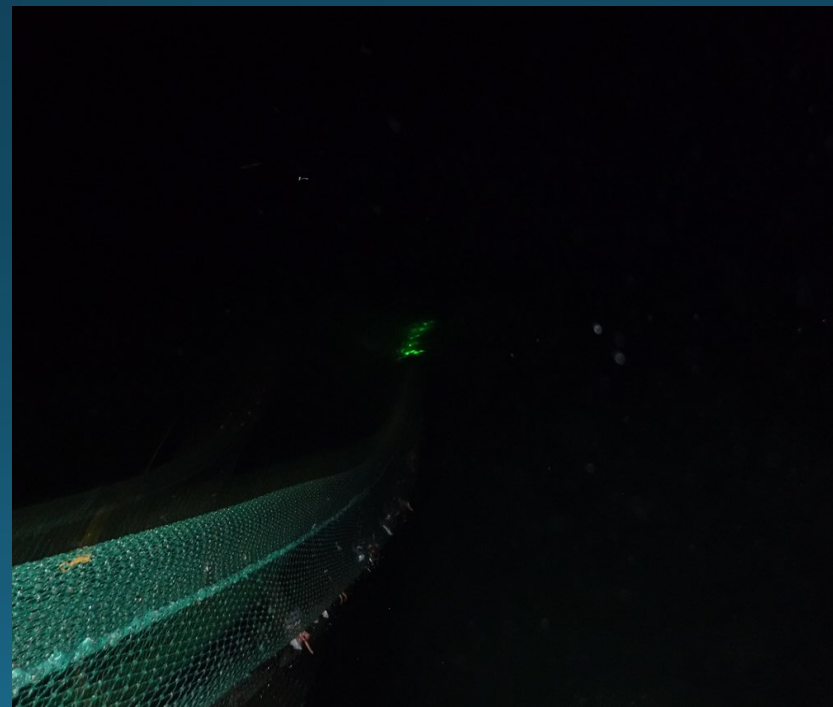
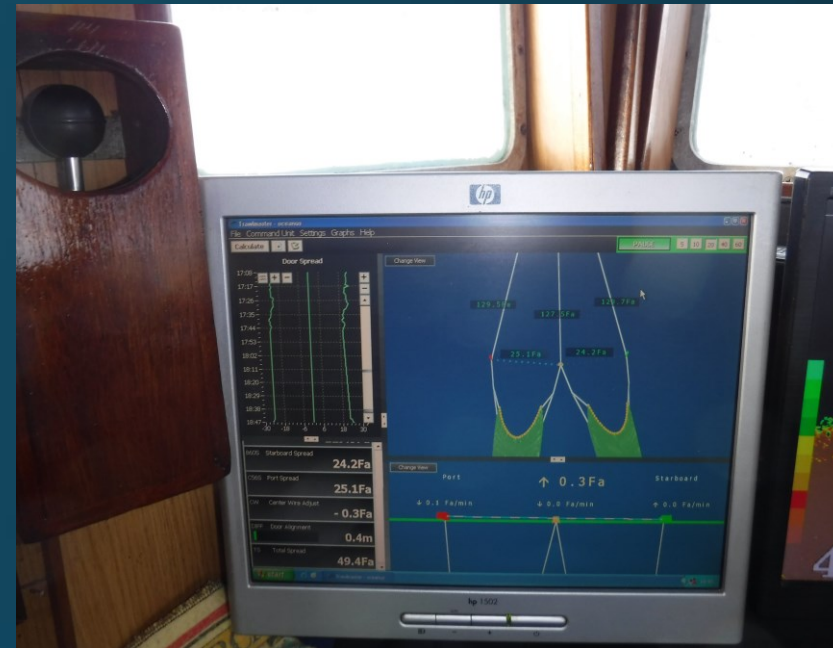
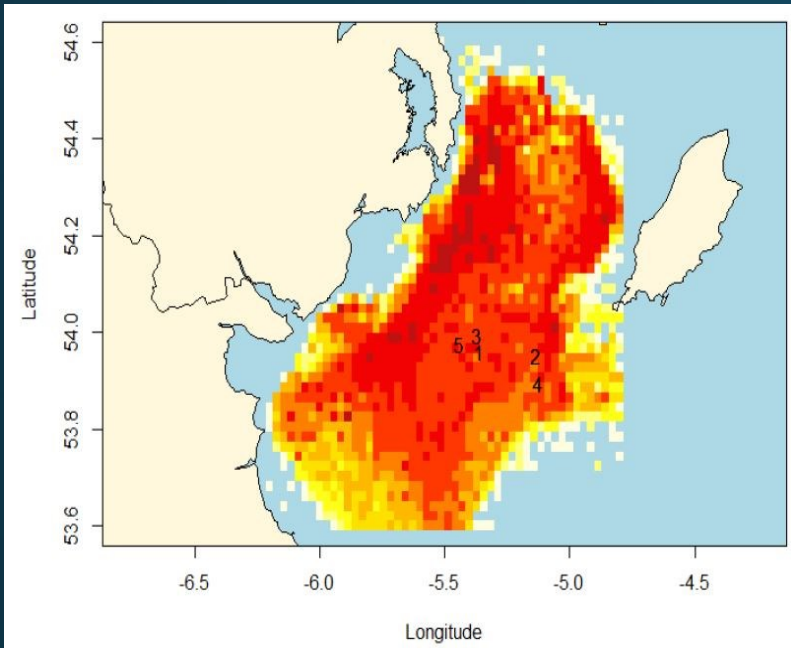
50 mesh long 4 panel parallel box section with square mesh netting grid fitted along the bar of the side panels

100.5 mesh long. Selvages re cut to accept new triangular side panels. See the actual net plans for suggested cuts.

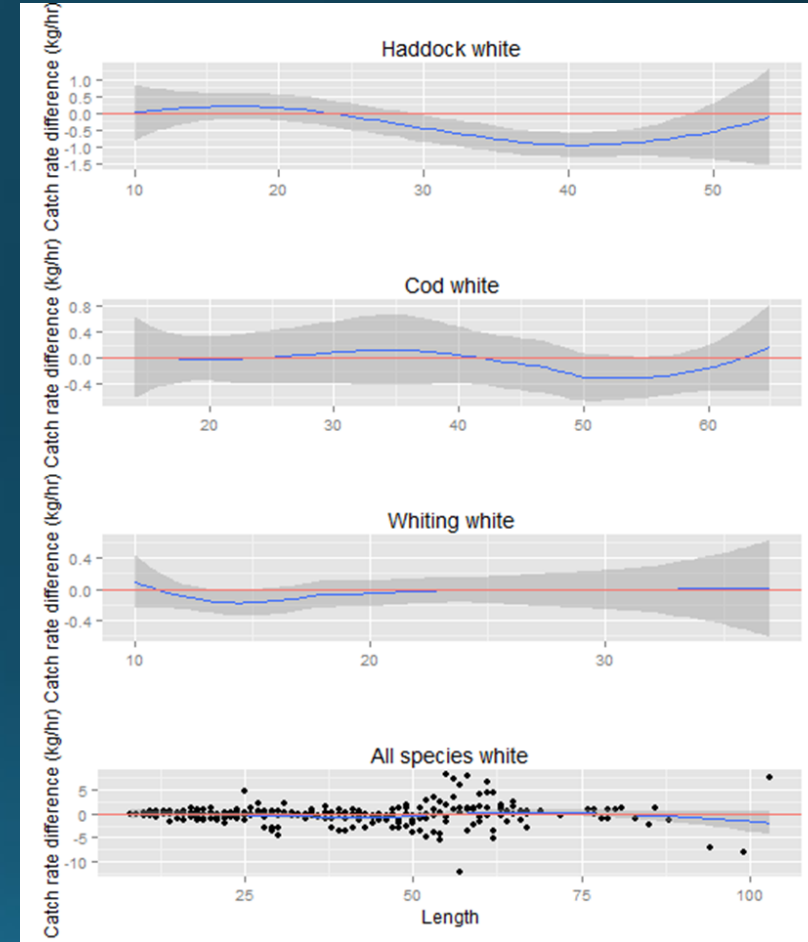
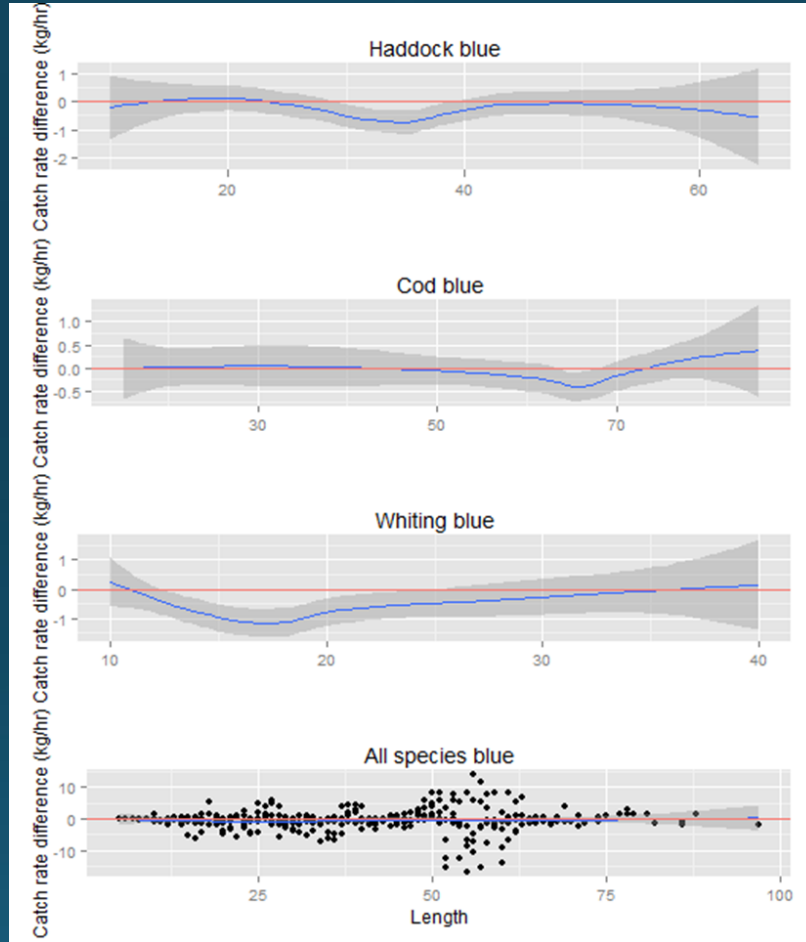
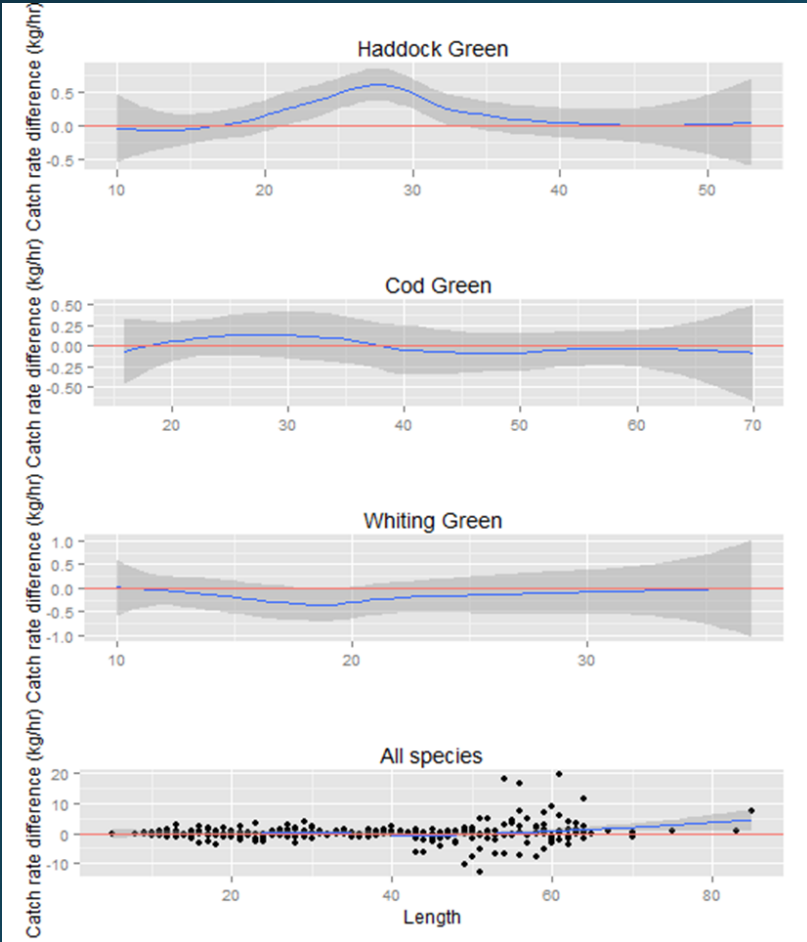
The netting grid (grey section) is made using square mesh of 200mm or 300mm mesh. The leading edge is laced across the lower panel of the parallel box section. Each side of the square mesh grid is laced along a bar starting at the bottom front of the side panel all the way up to the top rear corner of the panel where the aft edges of the panel is laced across the top panel of the four panel section.

A triangular escape hole is cut just ahead of where the inclined net grid is attached to the top panel to allow the fish to escape. The nephrops should fall through and pass into the codend.



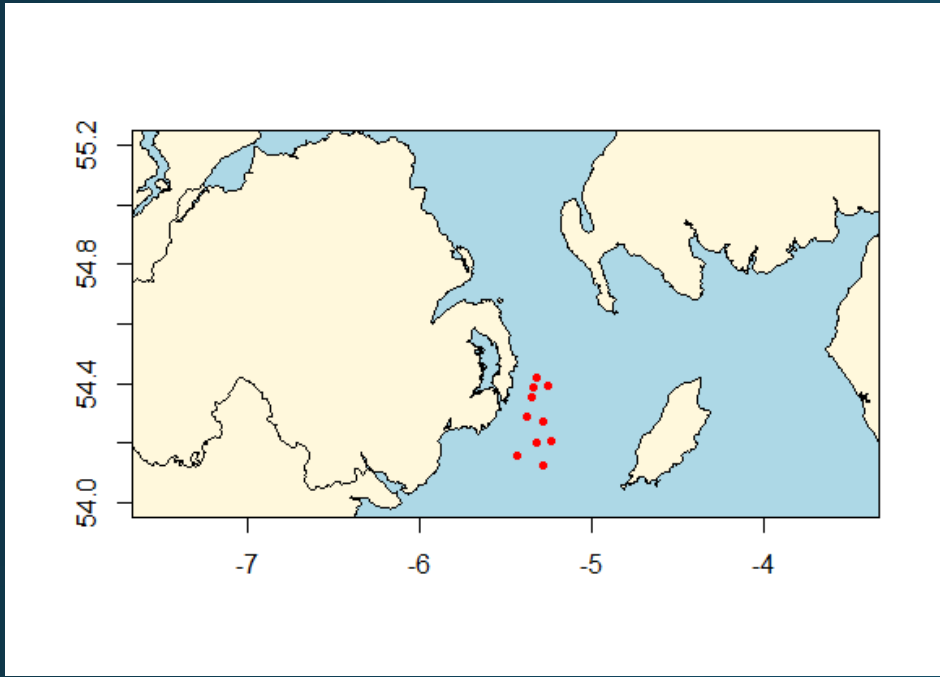


# Catch rate difference – Illuminating SMPs

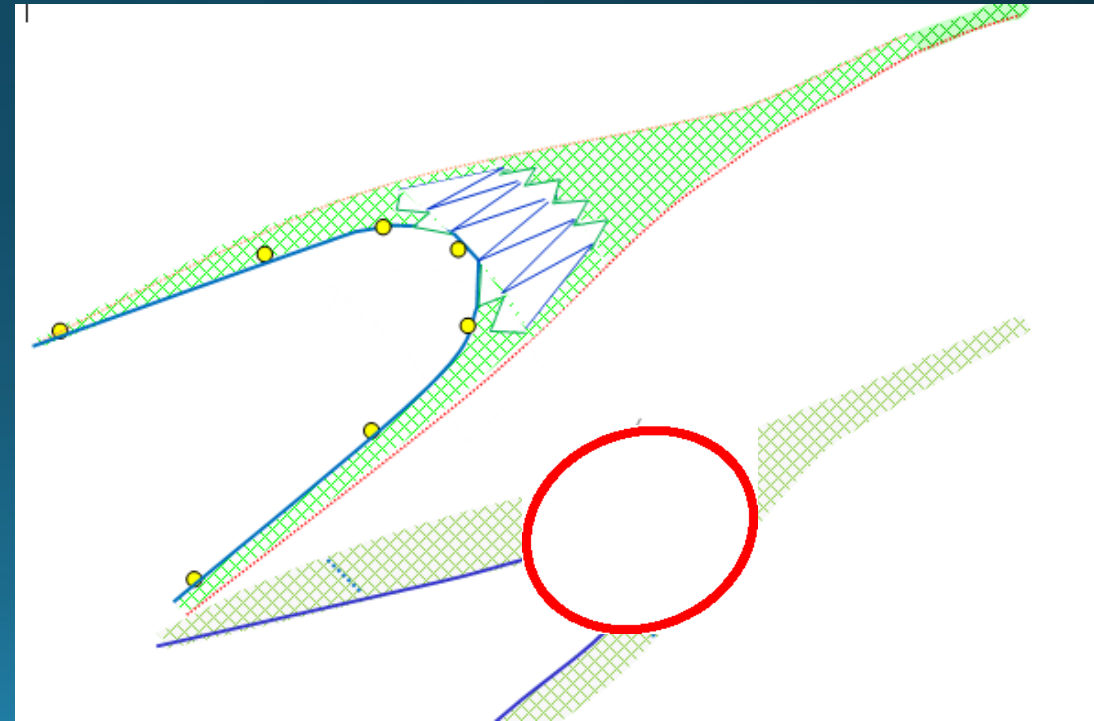
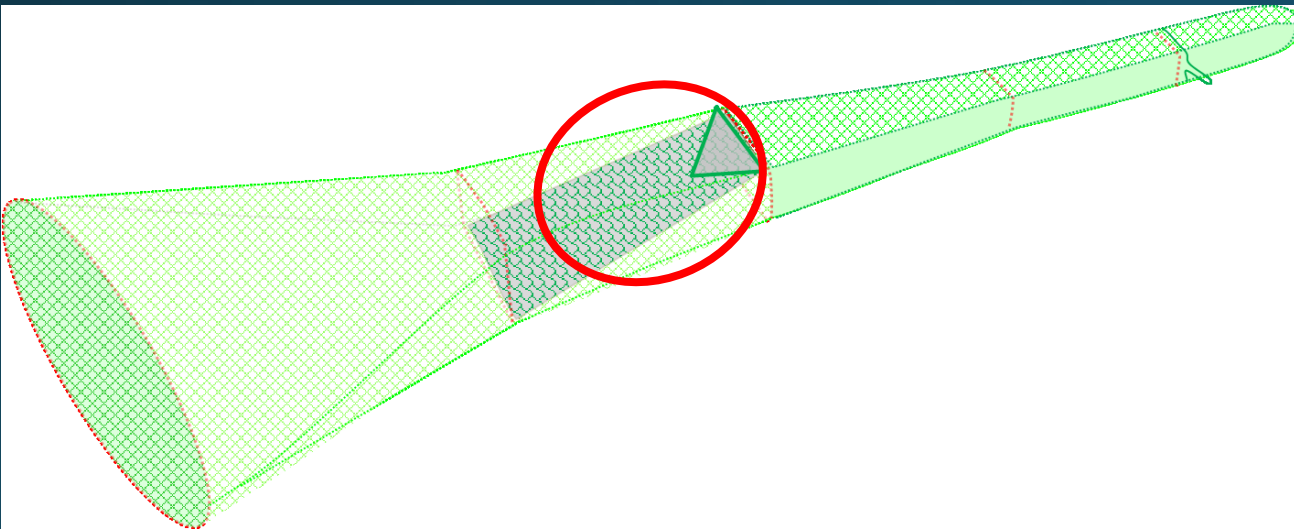




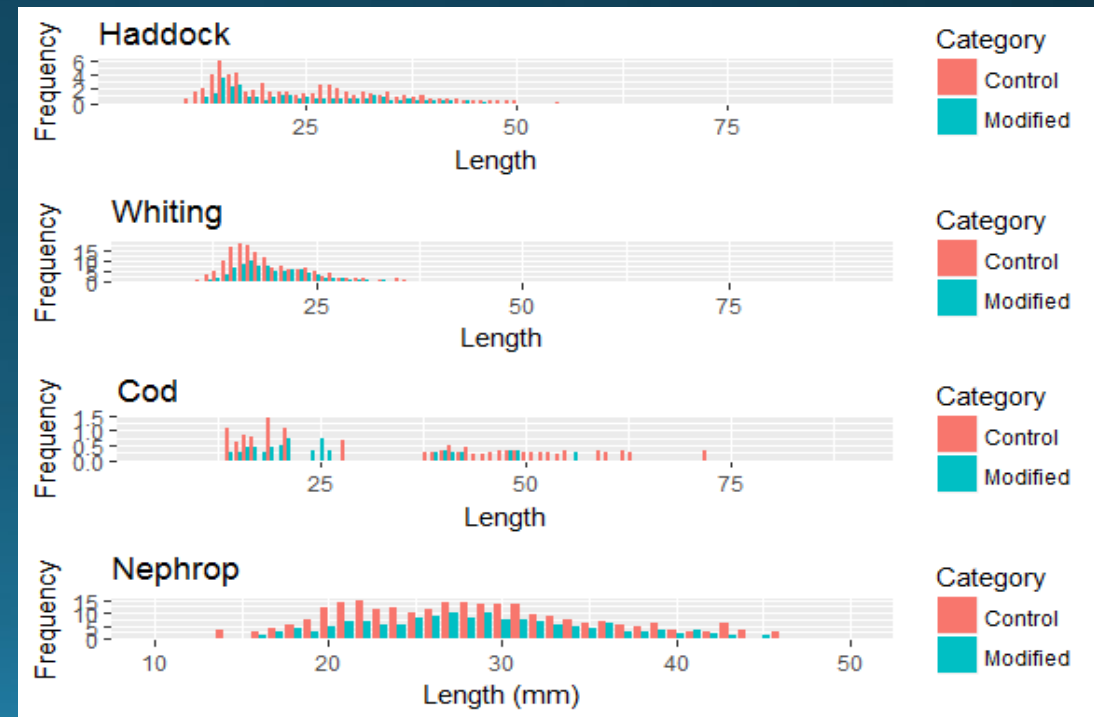
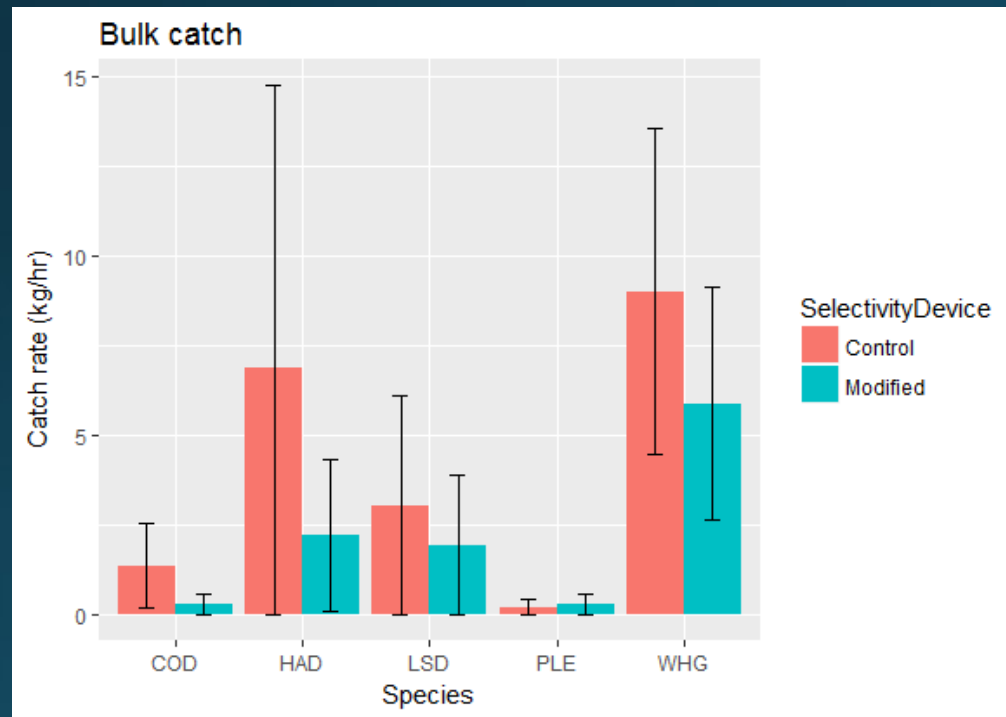
# March 2018 Trials



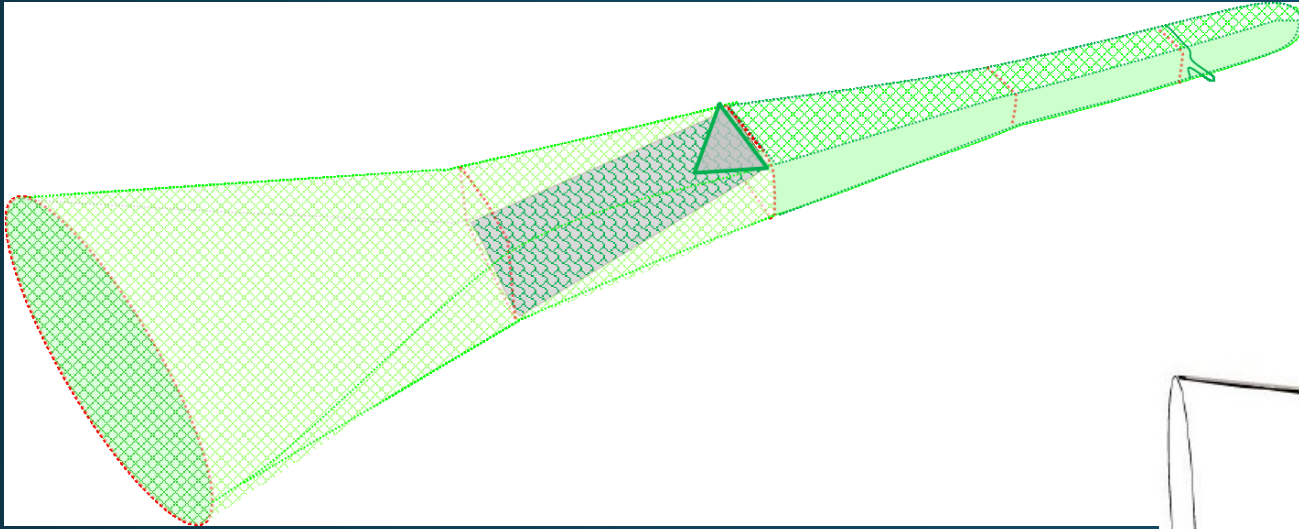
Trial Details	Trial Vessel
90mm codend/ext against 80mm codend/ext	Twin-rig
90mm codend/ext against 70mm codend/ext	Single-rig
Fin Fish Free/ green lights	Twin-rig
Inclined Net Grid/ blue lights	Twin-rig



Trial Details	Trial Vessel	Results
90mm codend/ext against 80mm codend/ext	Twin-rig	whiting +51%, nephrops -31%
90mm codend/ext against 70mm codend/ext	Single-rig	whiting -65%, nephrops -53%
Fin Fish Free/ green lights	Twin-rig	whiting +25%, nephrops -21%
Inclined Net Grid/ blue lights	Twin-rig	whiting -35%, nephrops -26%

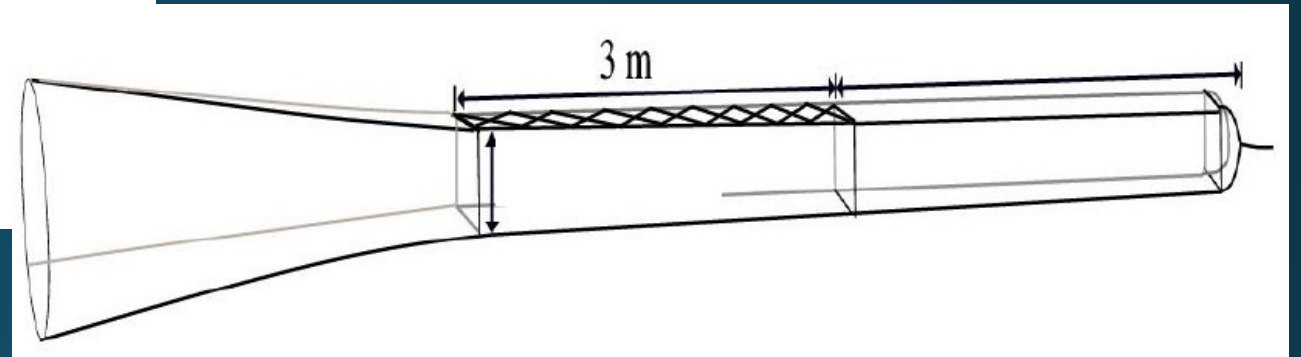


# August 2018 Trials



Inclined Net Grid x2  
Version 1 – repeat of March trial with lights removed  
Version 2 – 400mm net grid (no lights)

SELTRA 270 Trawl



## 300SMP/ SELTRA 270 – Results

Species	Control (kg)	Modified (kg)	Change
Cod	<1	<1	
Haddock	26	24	-7.6%
Whiting	44	45	+2%
Nephrop	1614	1852	+13%

Thank you for listening

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