SepNep - Towards a selective Nephrops fishery

Results joint German Dutch research cruise in September 2016

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Dutch Nephrops fisheries

- Otter trawl fishery (4 trawls)
- Catches up to 70% discards: small Nephrops & undersized flatfish
- Industry MLS Nephrops
    - 35 per kg
    - ~32mm CL

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SepNep history

- Developed by fisher Cees van Eekelen in cooperative research project (European Fisheries Fund)
- Tested on board of commercial vessel (WR189; 2014, 2015)
  - 65% less discards (-69% plaice, -78% dab)

→**Promising, but:**

- 21% loss marketable Nephrops
- More undersized Nephrops
- Application trawl complicated

- Improved design in 2016 (co-funded by MinEZ)
  - Minimize loss of marketable Nephrops
  - Optimize selection panel

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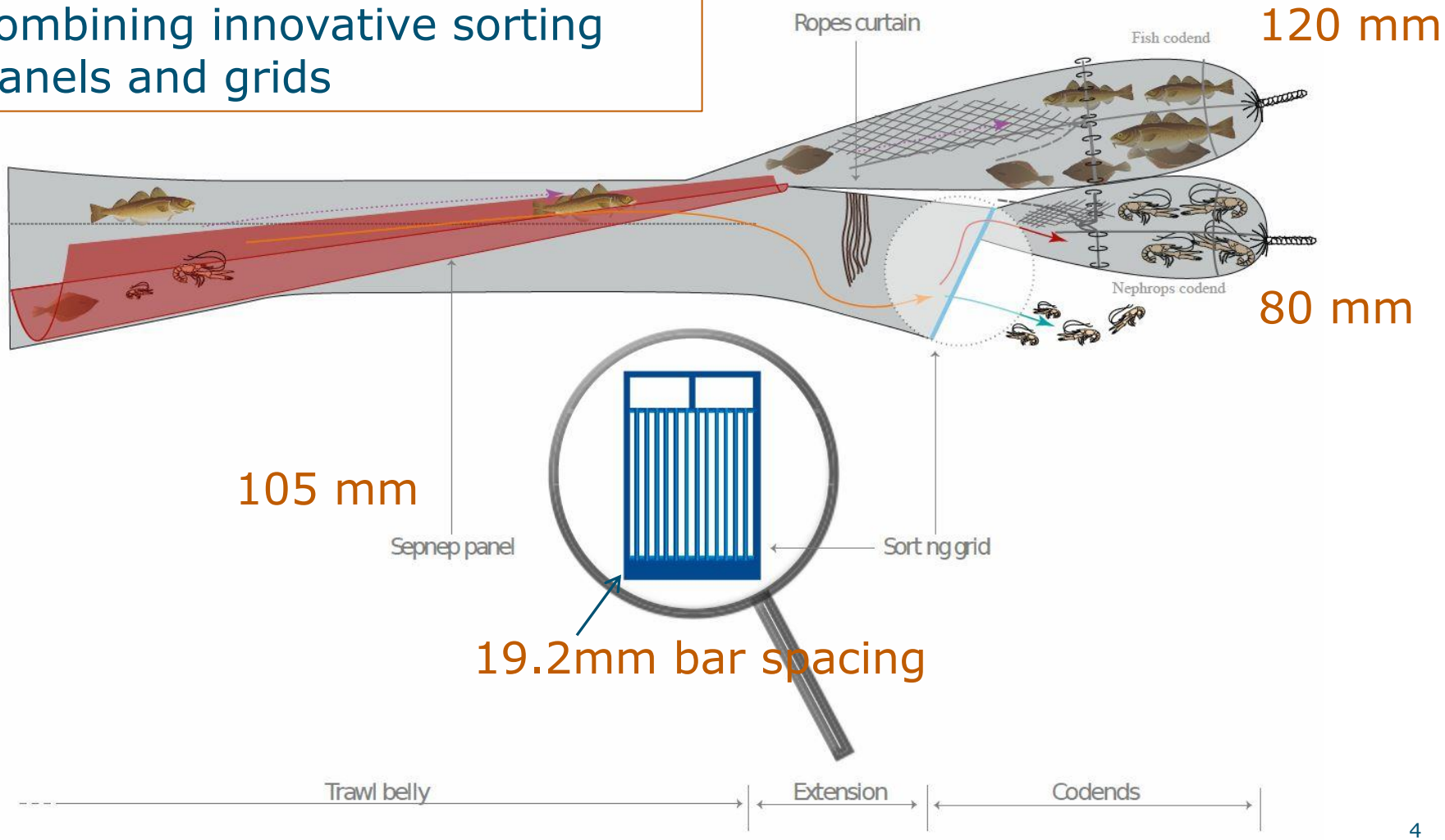
SepNep - the design

Multi-species selectivity by combining innovative sorting panels and grids



Research cruise RVS Solea (Sept. 2016)

- International cooperation science and fishers
- Fundamental knowledge of selection process
- Understand and improve design of sieve panel and grid
- Optimize the selection process
- Systematic approach

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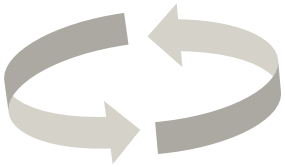
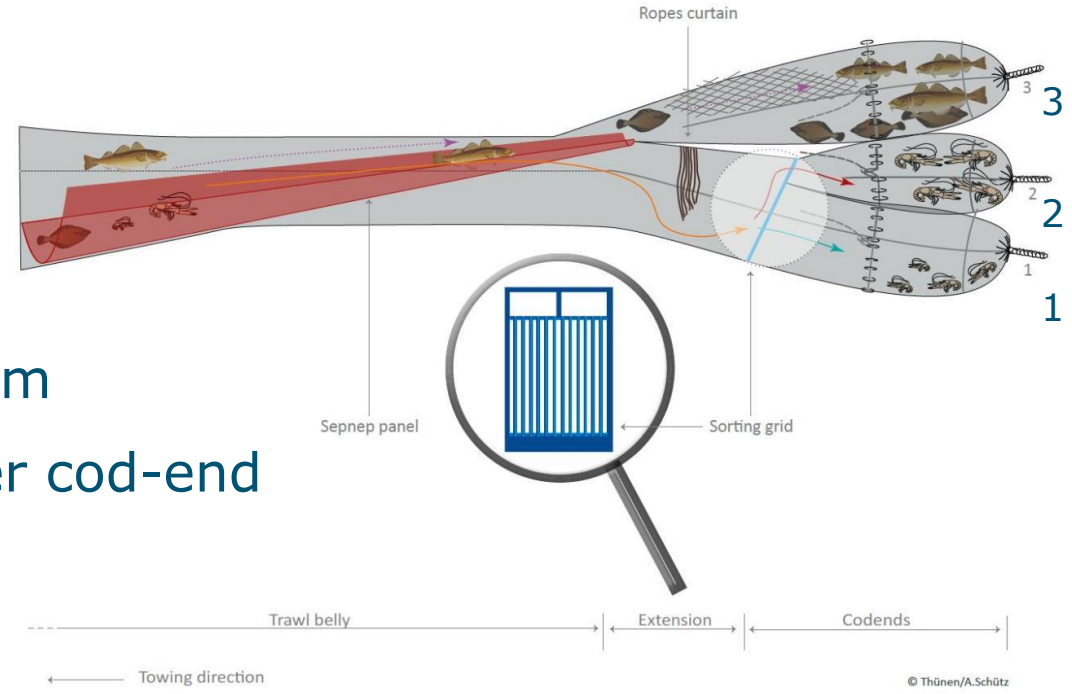
Methods

Use of camera’s to evaluate & adapt



Collect detail information

- 3 cod-ends of 50 mm
- Measure catches per cod-end



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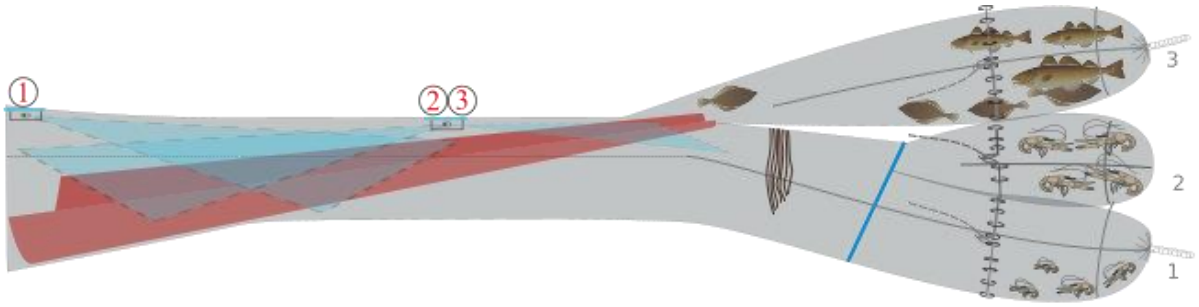
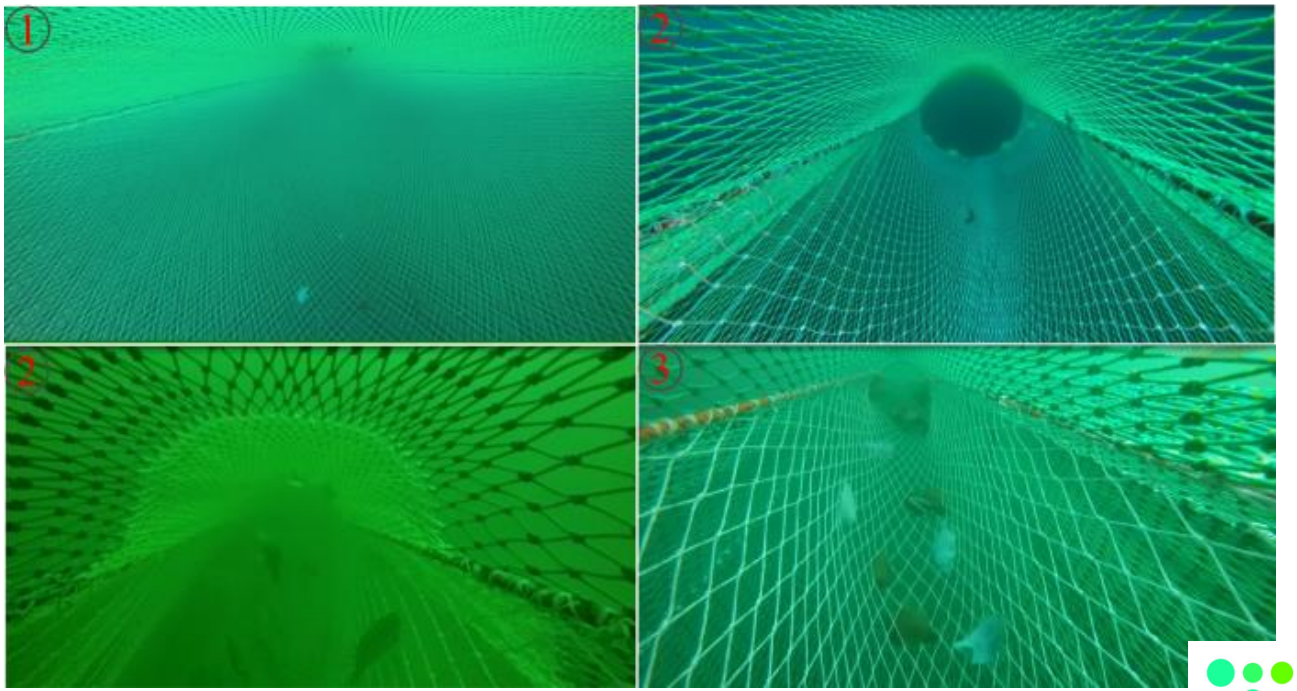
Cameras panel





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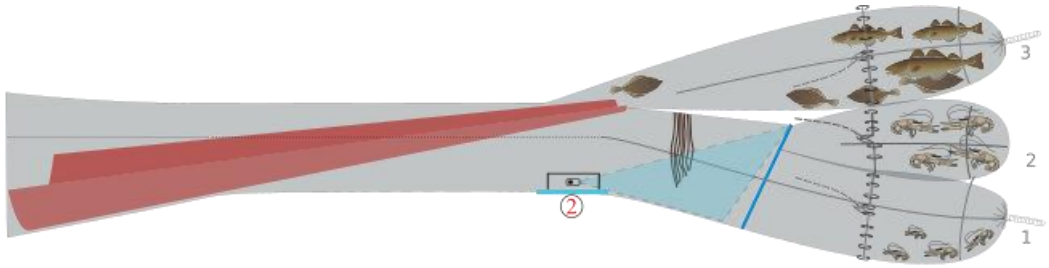
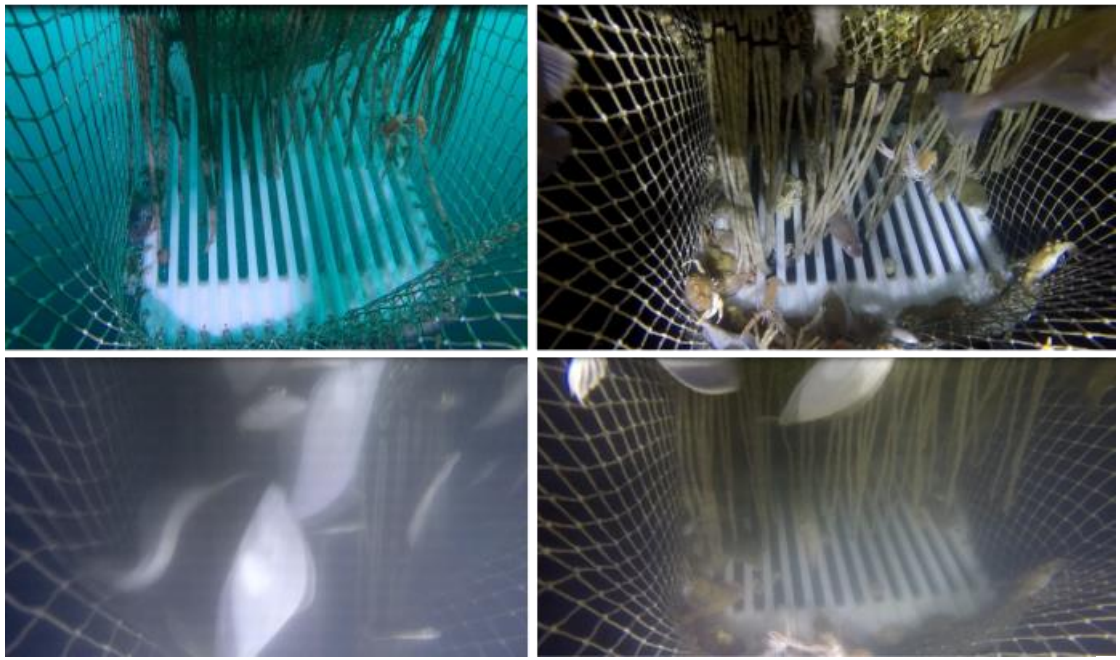
Cameras grid

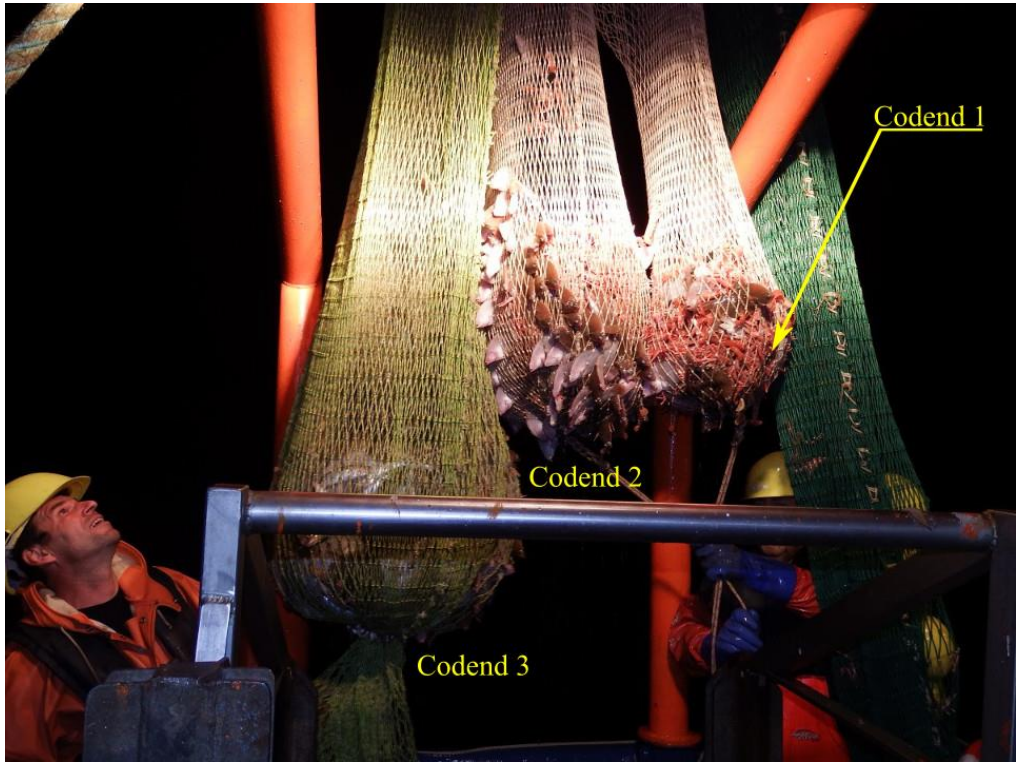




Results RVS Solea

Note:

- Research setting: 3 50mm cod-ends
- In practice: 2 cod-ends 120mm + 80mm
- Figures presented are ranges of SepNep1 + SepNep2
- SepNep 2 performed better with sieving Nephrops, but more undersized dab in cod-end 2



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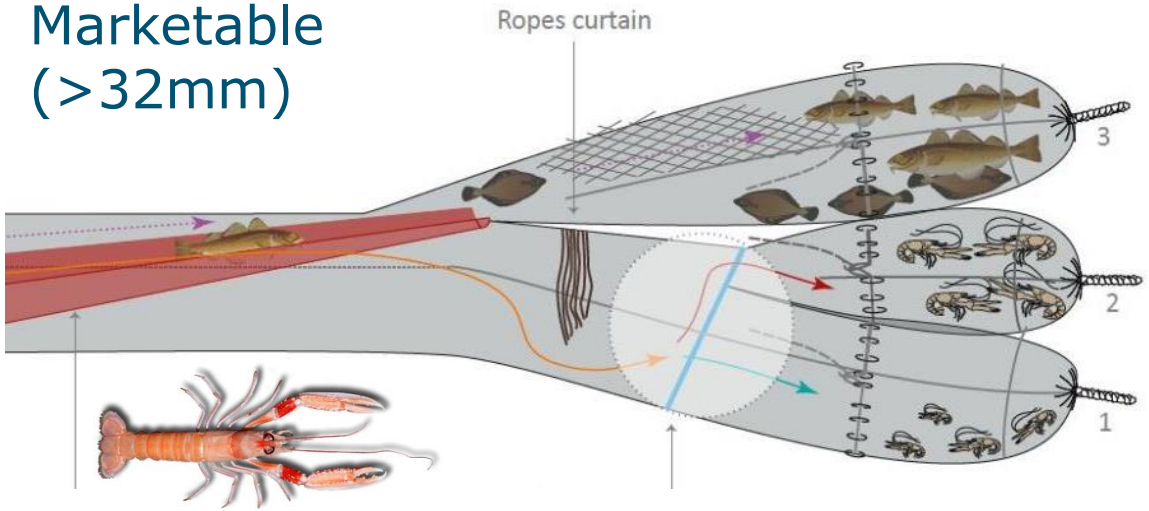
Nephrops Industry MCRS

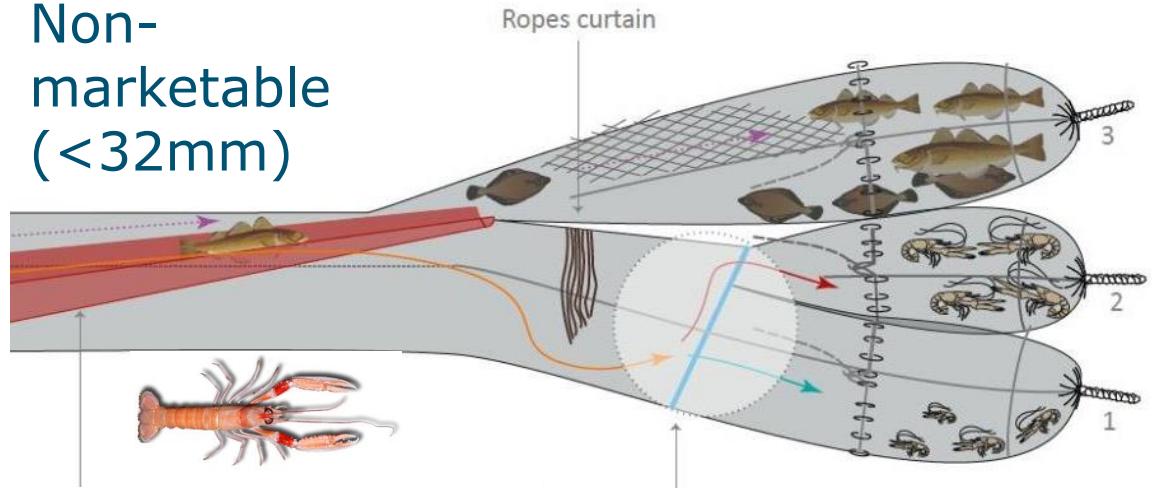
Marketable (>32mm)



3: 20-13%
Partly lost in commercial setting (because of large mesh size)

1+2: 80-87%

Non-marketable (<32mm)

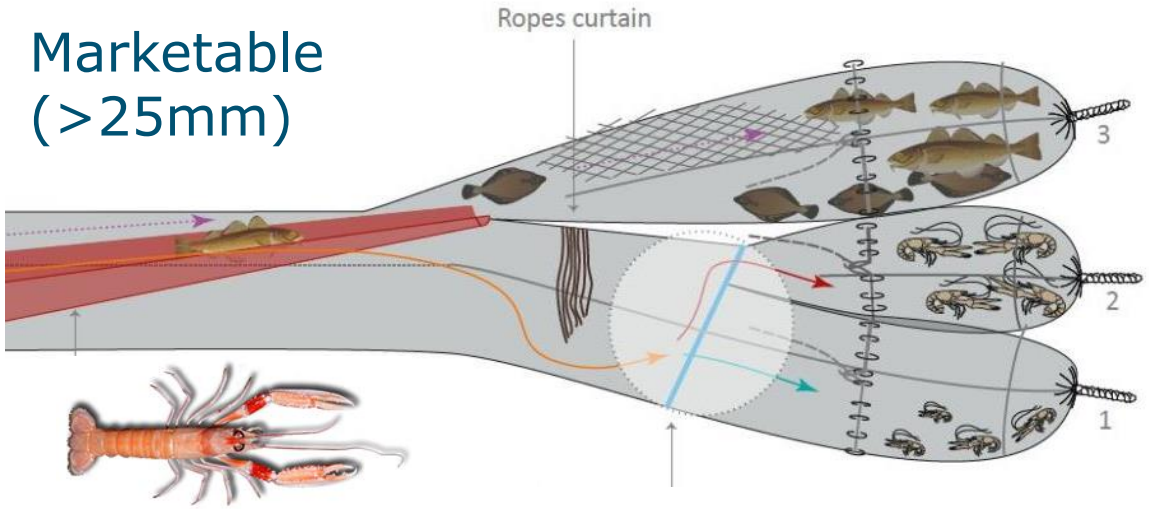


2+3: 47-44%
Partly lost in commercial setting

1: 53-56%
Escape in commercial setting

Nephrops EU MCRS

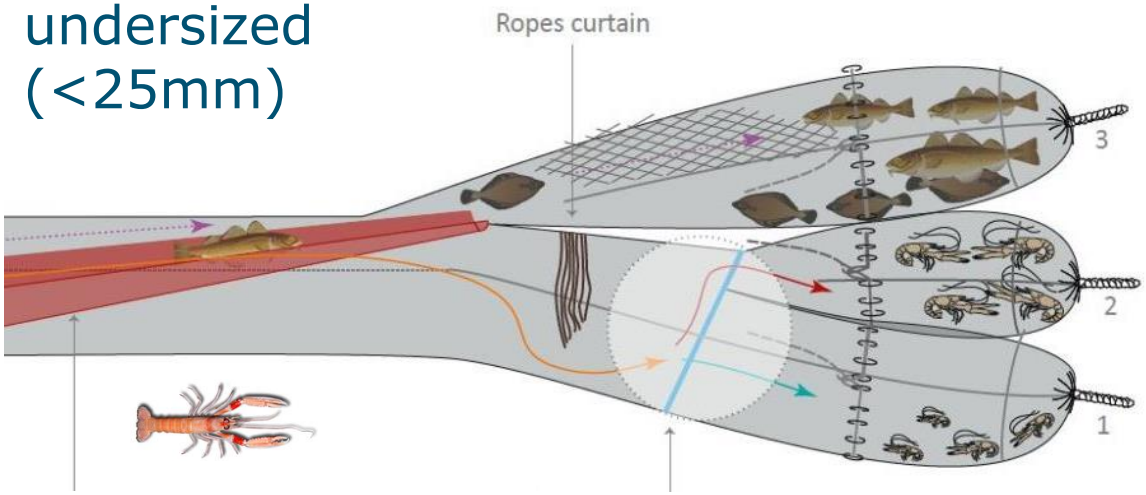
Marketable (>25mm)



3: 17-12%
Partly lost in commercial setting (because of large mesh size)

1+2: 83-88%

undersized (<25mm)

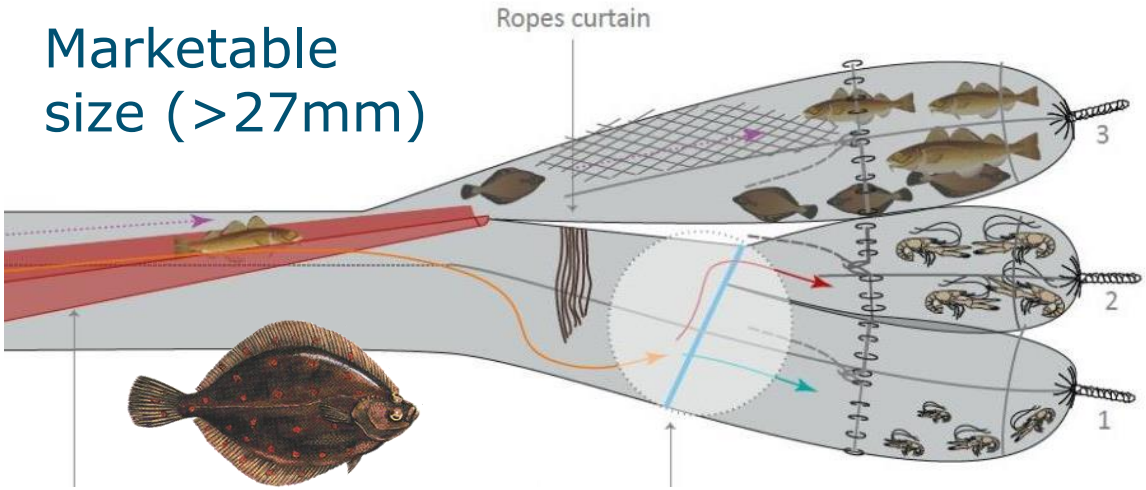


2+3: 33%
Partly lost in commercial setting

1: 67%
Escape in commercial setting

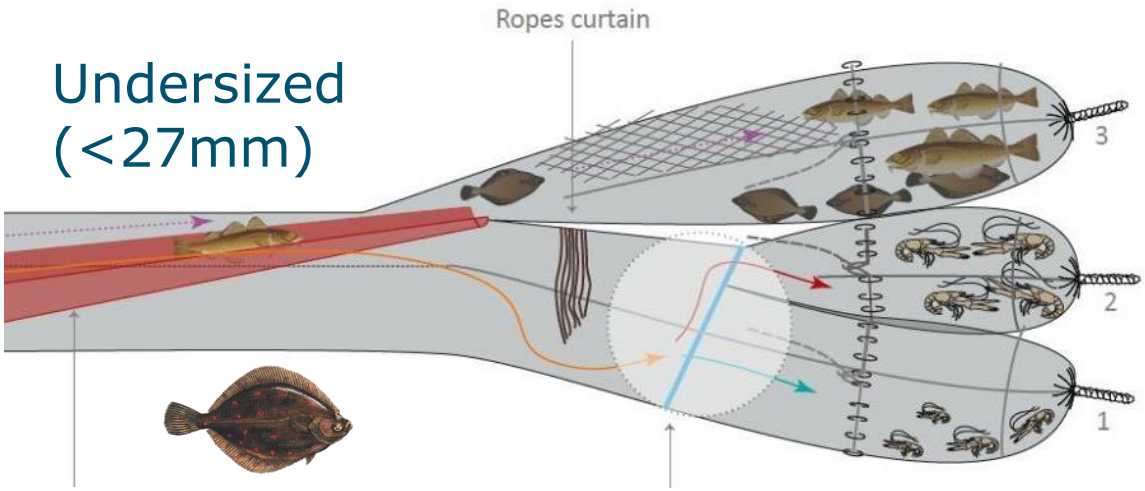
Plaice

Marketable size (>27mm)



3: 100%

Undersized (<27mm)

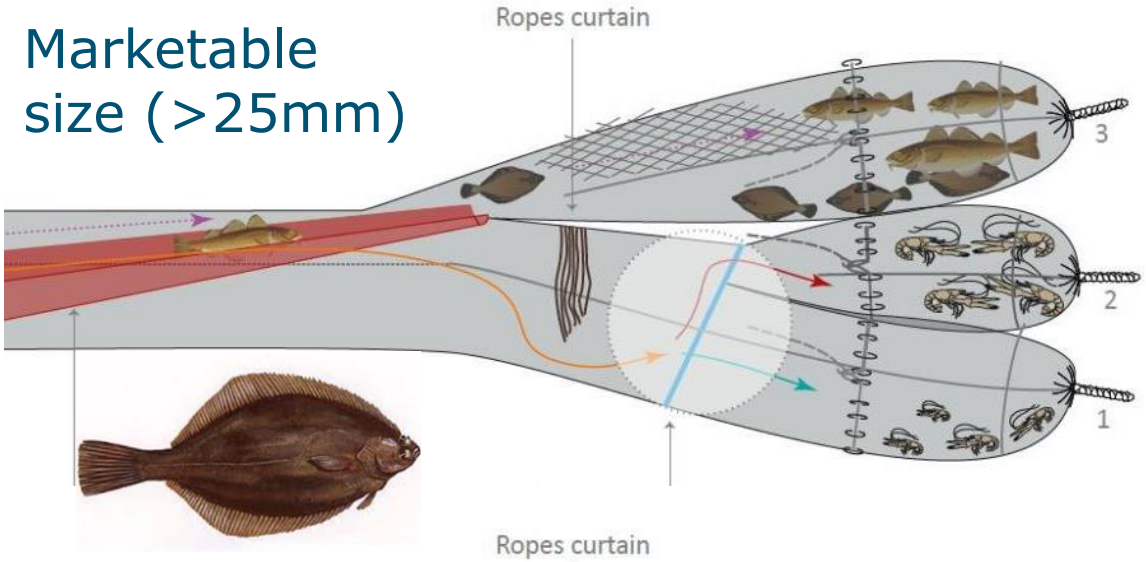


3: 78-80%
Mostly escape in commercial setting (because of large mesh size)

1+2: 20-22%
Mainly in cod-end 2. In 1 lost; in 2 mostly 'discards' in commercial setting.

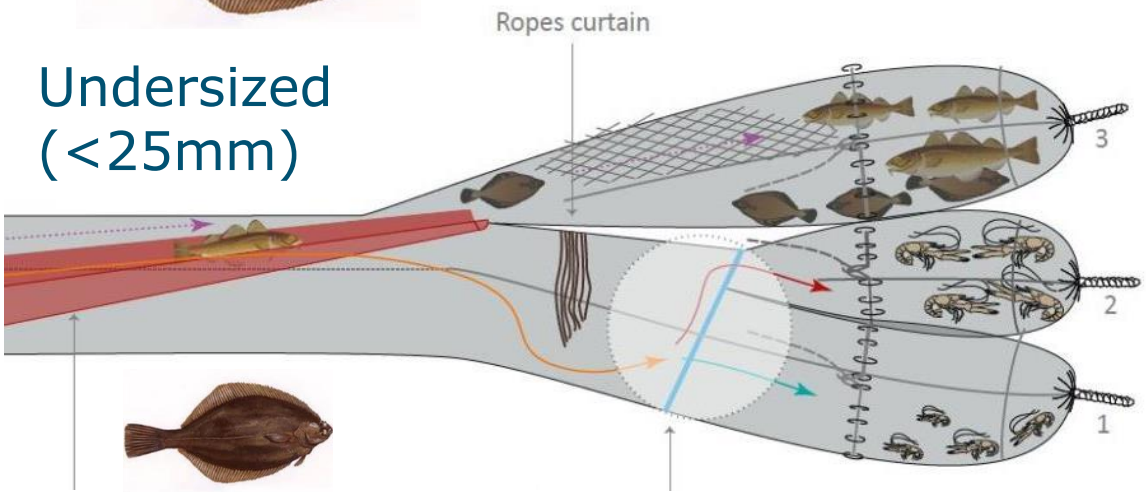
Dab

Marketable size (>25mm)



3: 92-96%

Undersized (<25mm)

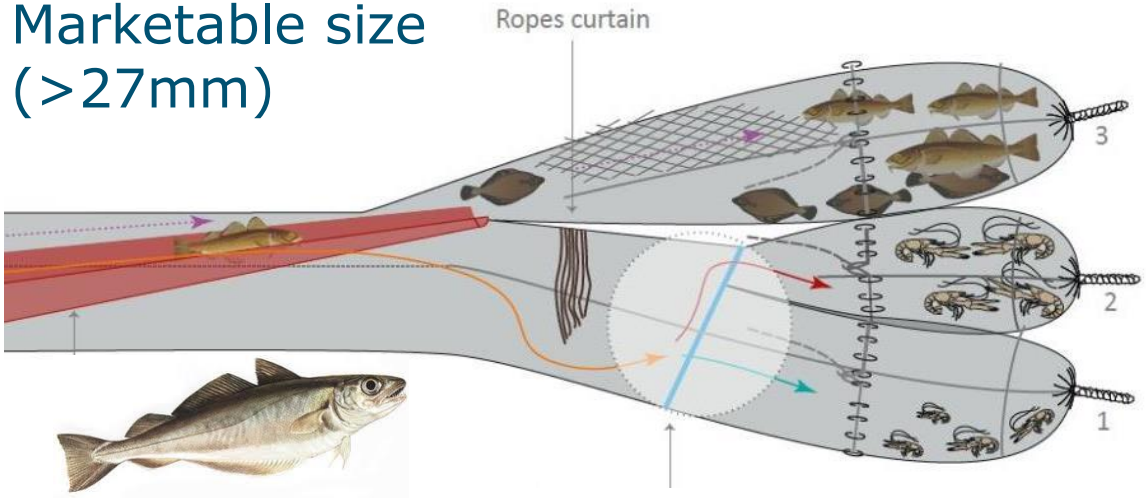


3: 54-67%
Escapes in commercial setting (because of large mesh size)

1+2: 46-33%
Mainly in cod-end 2. In 1 lost; in 2 mostly 'discards' in commercial setting.

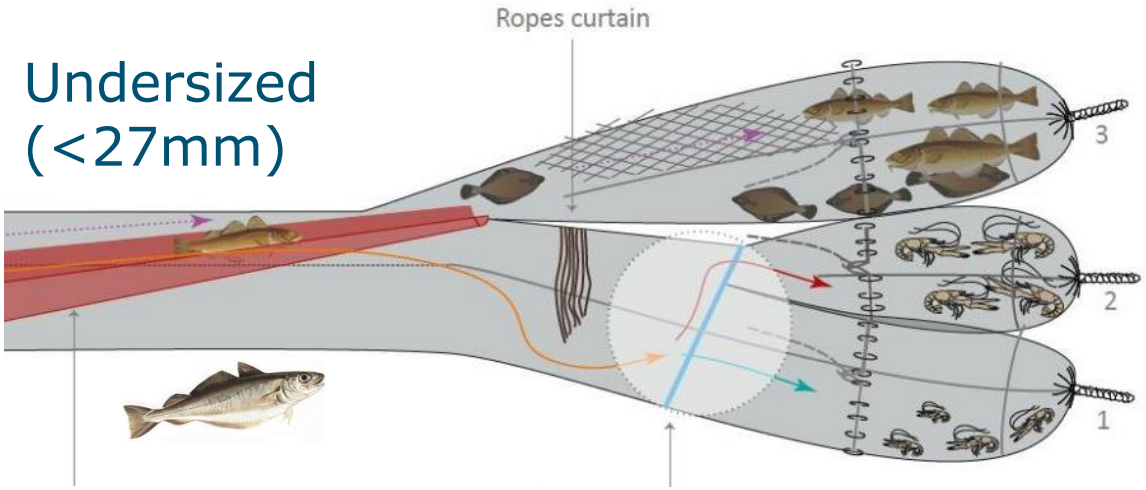
Whiting

Marketable size (>27mm)



3: 51-72%

Undersized (<27mm)



3: 60-67%
Escapes in commercial setting (because of large mesh size)

1+2: 40-33%

Conclusions & follow up

- Separation of fish and Nephrops with the panel successful:
  - 78-80% of undersized plaice escapes
- Improved grid design reduces non marketable Nephrops bycatch with 53-56%
- Need to implement SepNep in the Nephrops fleet
- Further improve design to:
  - Further reduce dab bycatch
  - Lose more small Nephrops (though the grid)

Final remarks policy

- Current technical measures do not allow double cod-end trawls with multiple mesh size
- SepNep will need ‘tweaks’ in different commercial settings (e.g. depending on MCRS in use) – blue print description in technical measure not advisable

Questions?

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