Electrified Benthos Release Panel

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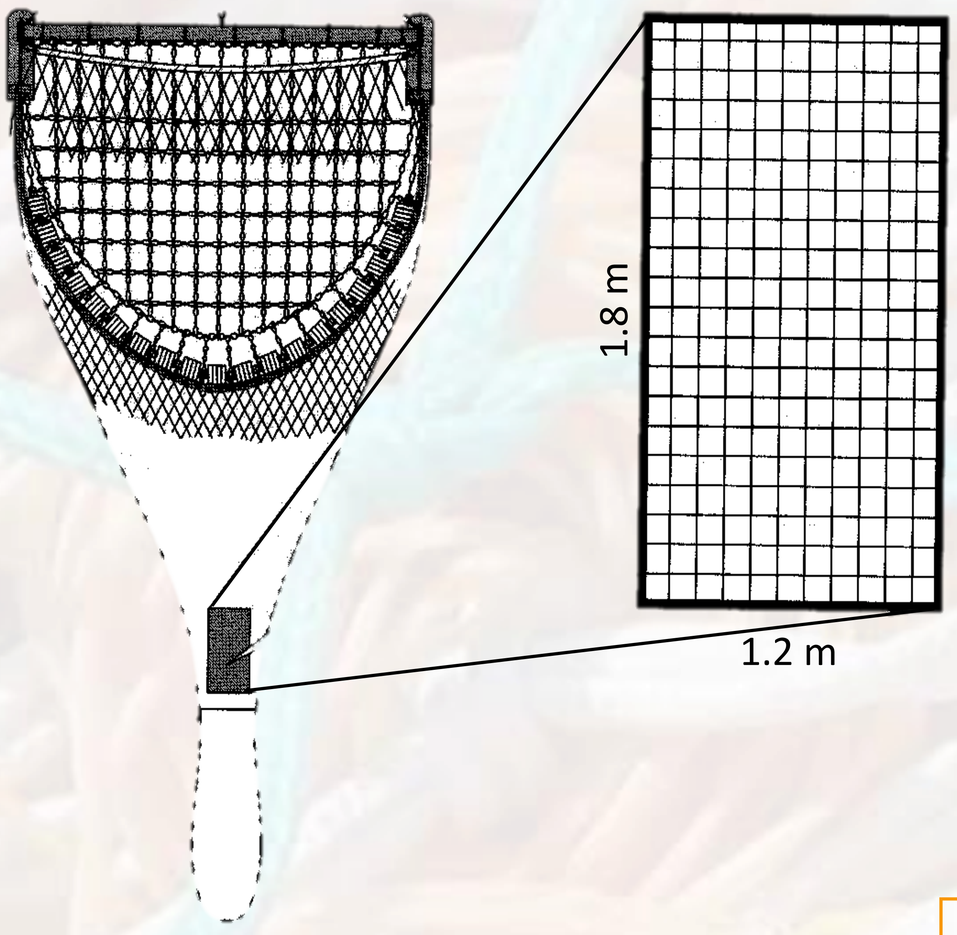


Benthos Release Panel

Panel with 10 x 10 cm meshes in belly of the net

Benthos: falls through meshes

Fish: flows into the cod end(1)

✓ 83% less benthos

✓ 56% less debris

✓ Less undersized fish

X 45% less commercial sole

=> *need for repelling stimulus*

Electric Stimulation

Effects on sole(2)

Escape response (<25 Hz)

Immobilisation (>25 Hz)

Effects on benthos(3,4)

Shrimps: jump or cramp

Others: no visible response

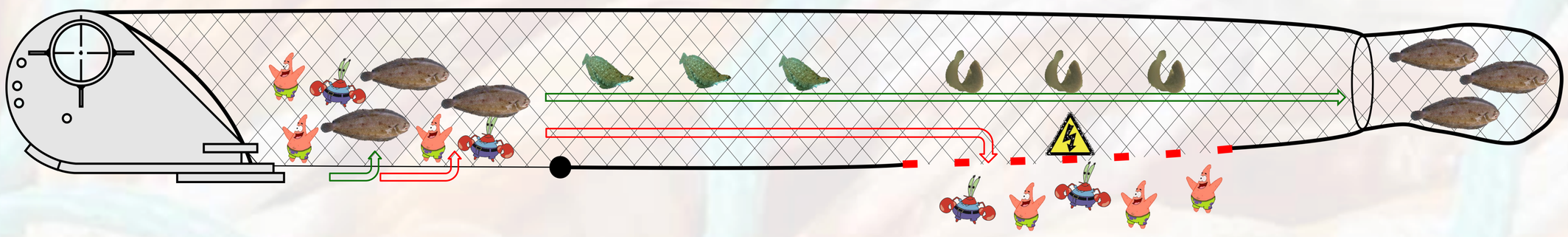
Electrified Benthos Release Panel (eBRP)

Idea: Electrical stimulus that prevents sole from escaping through BRP

Goal: Discharging benthos & debris while retaining all commercial sole

Outcome: Reduced impact on benthic invertebrate community

Better fish quality, easier to process on board



References: (1) Fonteyne & Polet, 2002, 'Reducing the benthos by-catch in flatfish beam trawling by means of technical modifications', Fisheries Research 55, 219-230; (2) Soetaert *et al*., 2015, 'The effect of electrical pulses on Dover sole (*Solea solea* L.) and Atlantic cod (*Gadus morhua* L.)', in progress.; (3) van Marlen *et al*., 2009, 'The effect of pulse stimulation on marine biota – Progress report on the effects on benthic invertebrates', ICES document C103/09, 53 p.; (4) Soetaert *et al*., 2014, 'Determining the safety range for the use of electrical pulses for two benthic invertebrates: brown shrimp (*Crangon crangon* L) and ragworm (*Alitta Virens* S.)', ICES Journal of Marine Sciences, 10.1093/icesjms/fsu176

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