

Flatfish fishery: impact & challenges

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Introduction

Total turnover Belgian fishermen = € 76 million

- Sole (*Solea solea*)
- Plaice (*Pleuronectes platessa*)

(2010)	price (€/kg)	catch (10 ³ kg)	% of turnover
sole	10.6	3.703	51.4
plaice	1.3	5.099	8.5

Mainly caught using beam trawls with heavy tickler chains because of their high efficiency for sole & plaice

Traditional bottom trawls:

- seabed disturbance ↗
- discards ↗
- fuel consumption ↗

Alternative fishing methods

Set nets (sole) & flyshooting (plaice)

- + {
 - more selective
 - limited seabed contact
 - >50% ↓ fuel consumption
- {
 - current fleet is not equipped for these techniques

Pulse fishery: *mechanical stimulation (of tickler chains)*

↓
electrical stimulation (pulses)

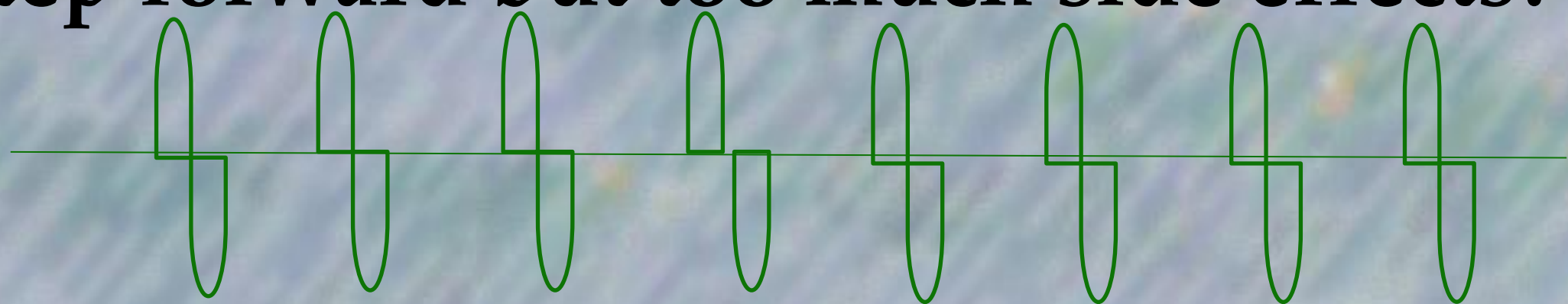
- + {
 - seabed disturbance ↓
 - bycatch of undersized fish ↓
 - bycatch of benthos ↓
 - fuel consumption 50 % ↓

Pulse fishery: 2 options

Cramp pulse : currently used for flatfish

- aims at immobilisation reaction
- high frequency pulse
- negative effects such as dislocated spinal cords, haemorrhages & mortality

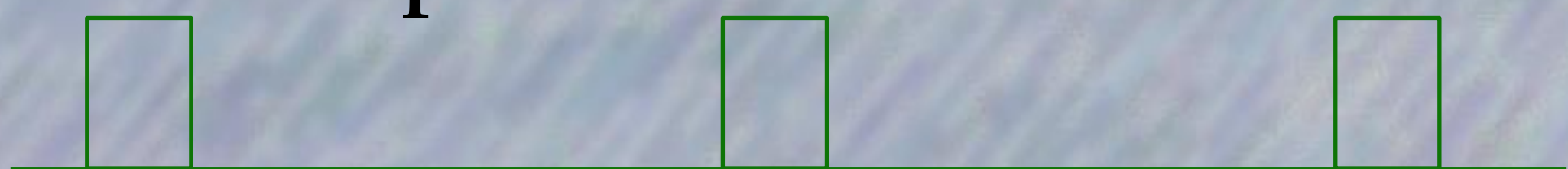
⇒ Step forward but too much side effects?



Startle pulse : currently used for shrimps

- aims at fright reaction
- elicits an upward movement of flatfish
- low frequency pulse
- no negative effects observed till now

⇒ More acceptable method?



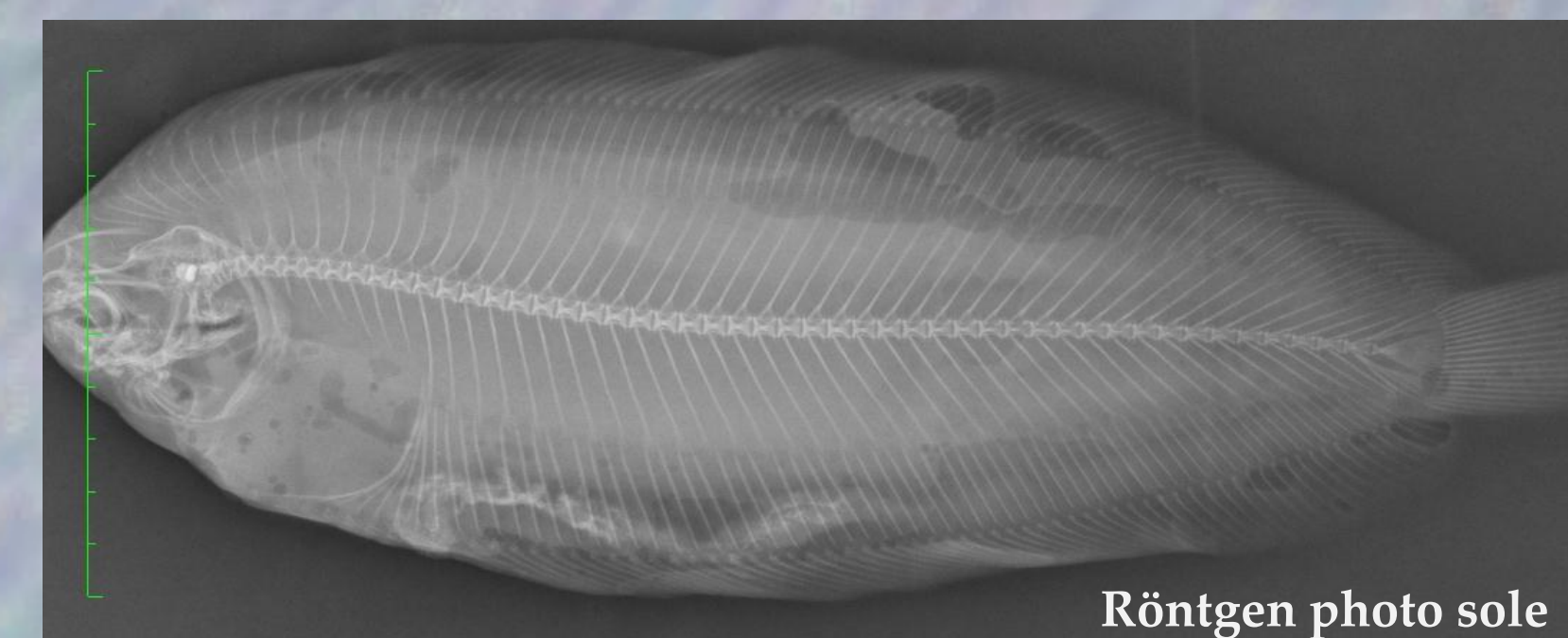
Research to be done

Goal: obtain a low impact startle pulse for flatfish

Step 1: determine range of 'safe' pulse parameters

- without injuries
- without mortality

for sole, cod, brown shrimp & sandworm



Step 2: finding a 'safe' and good scare pulse that elicits a great upward movement of the sole

Step 3: investigate possible negative effects (stress & lesions) of this optimized pulse on sole, cod, brown shrimp & sandworm

Take Home Message:

- ✓ Beam trawling in its current form is on its return due to a high environmental impact & fuel costs
- ✓ Passive fishery techniques require a total turn-over of the trawl fleet which is unfeasible
- ✓ Pulse fishing can be a great step forward, but the adverse effects need to be tackled first

Pulse fishery is the most promising alternative meeting both the fisherman's aspirations and the need for ecological progress

