



A Matter of perspective

Remote Electronic Monitoring incidental bycatch of Harbour porpoises (*Phocoena phocoena*) in NL commercial bottom-set gillnet fisheries 2012 - 2017

1st Meeting Joint Bycatch Working Group ASCOBANS & ACCOBAMS,
Online, 11 February 2021

Marije Siemensma, Marine Science & Communication

Marine Science
&
Communication



Project set-up

Aim

- Assess porpoise bycatch off the Dutch coast in NL commercial bottom-set gillnet fishery using REM

Data collection

- June 2013 – March 2017

Why

- No regular monitoring in gillnet fisheries
- Concern based on bycaught suspected stranded animals

Who

- Funding** Dutch Ministry of Agriculture, Nature and Food Quality
- Contractors** Wageningen Marine Research, Marine Science & Communication
- Data collection** NL commercial bottom-set gillnet fishermen



Project phases



A matter of perspective

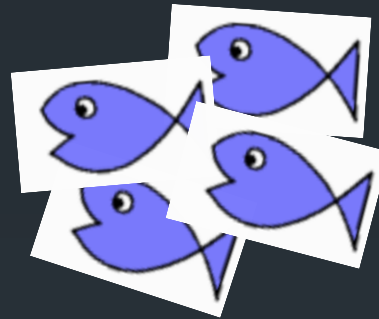
- Researcher

- Collect data
- Analyse data and get results



- Fishermen

- Catch fish
- Continue fishing in the future



- Ministry

- Fulfil the legal obligations
- Prevent difficult questions from parliament



Kick of meeting 2012 ...

Si far, little enthousiasm among Dutch set net fishermen to participate is a project to monitor by-catches of harbour porpoises with CCTV.

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Challenges

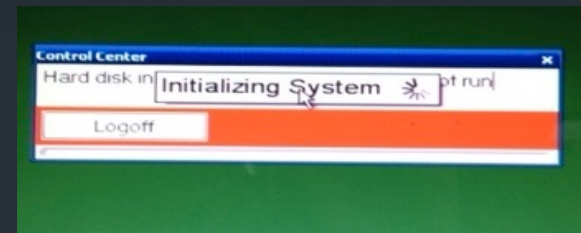
- Peer to peer pressure led to ↓ vessels
- Concern privacy, distrust
- Technical issues installation
- Data collection – quality
- External factors complicated progress



Review approaches bycatch monitoring & mitigation measures
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Issues installation & data collection

- Electricity capacity on board not enough
 - Installation costs exceeded budget
 - Miscommunication with installation company
 - Lack of space on board
-
- Formatting problems hard disks
 - Suboptimal camera position (searchlight)



2

Installation
REM

3

Data
collection

Bycatches caught on camera

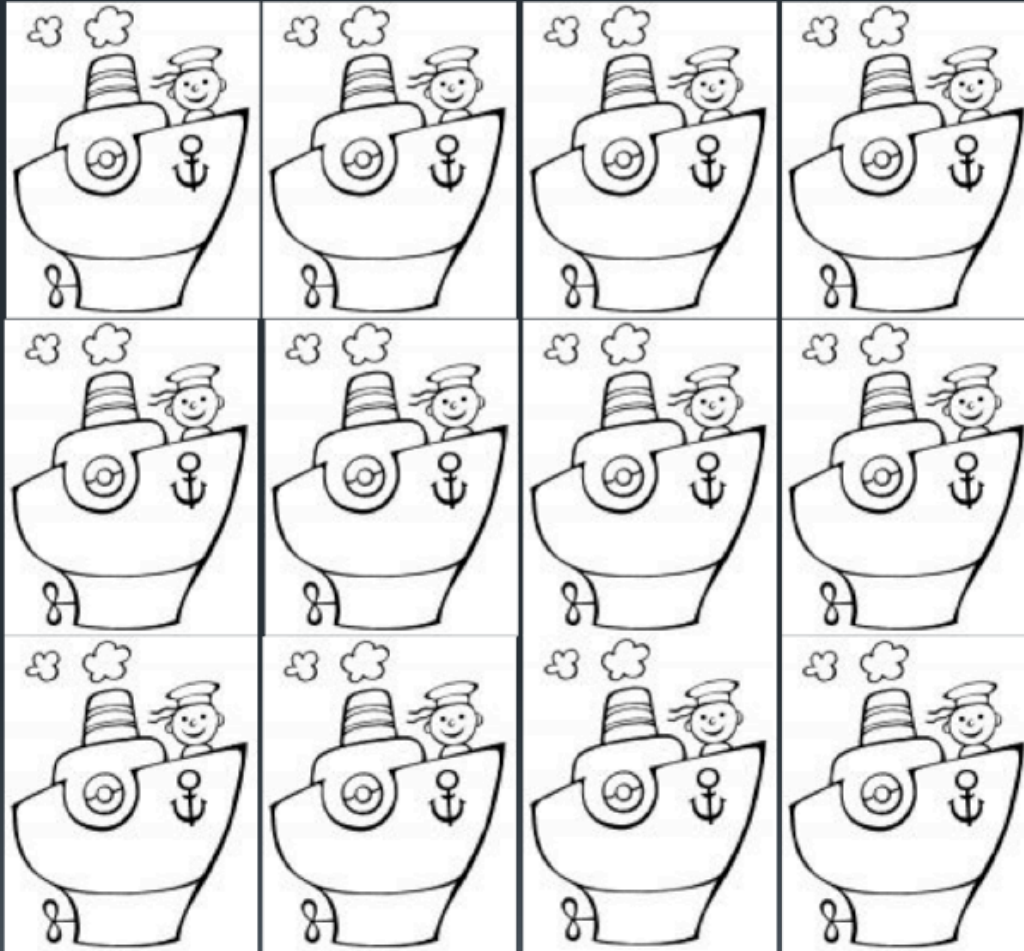
- Our data analysis showed that:
 - Animals that fall out the net before the net is hauled are not always observed by both the fisher and the data analyst
 - Glare can cause serious decrease of visibility, a second camera at a different angle is essential to prevent missing substantial hauling footage
 - Harbour porpoises can be easily missed during data analysis as only a small part is shortly visible
 - The hauling is paused as a porpoise might block the power block, which is an indication of bycatch

However... success factors

- Communication
 - Trust, respect, understanding
 - 24/7 attitude
- Change of attitude of ministry
 - Project budget expanded to compensate for extra costs
 - Science quatum granted
- Grey seals, *not fishermen*, attacked Porpoises (Haelters, 2012 van Bleijswijk et al. 2014, Leopold et al. 2014)

Project evaluation timeline, pink reflects negative and green positive atmosphere

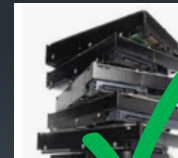




REM systems
installed



Bycatch
reported



Data
collected



Results

- **Bycatch in *both* single-walled (GNS) and trammel nets (GTR)**
 - Bycatch rate (porpoises/ net length km)
 - Trammelnets (GTR) → 0,004
 - Single-walled gillnets (GNS) → 0,0006
- **Average annual bycatch NL commercial bottom-set gillnet fleet: 23**
 - (95% C.I. 2-44) during study period
- **Annual mortality 0,05 - 0,07% of NL porpoise population**
 - 0,3 % maximum worst case scenario
- **Study did *not* include**
 - Other fishing fleets operation in NL waters
 - Recreational bottom-set gillnet fisheries

Recommendations

5
Lessons
learned



KW2 - Van Rossum Puffin dtp & fotografie

- **Invest in building relationship**
 - Involve fisheries from scratch
 - Be transparent
- Develop cost effective mobile REM
- Expand at international level
- Facilitate bycatch landing
- Improve data collection fishing effort at international level
 - soak time
 - net length and height
 - mesh size

EU LIFE Bycatch Initiative

(Anne-Marie Svoboda,
NL Ministry Agriculture,
Nature and Food Quality)

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In summary

- REM is a valuable tool for **transparent** and **objective** data collection
 - Works on small (<12m) vessels without intrusion of privacy
 - System not yet *waterproof* → need for optimization small vessels
 - Promising developments ongoing (Denmark, Sweden, Netherlands)
- **Key values** cooperation fisheries sector:
 - Mutual trust
 - Respect
 - Understanding perspective



Escher – fish and bird

Thank you

Acknowledgements

- Project partners Bram Couperus & Meike Scheidat Wageningen Marine Research
- Participating fishermen
- Lonneke IJsseldijk, Utrecht University pathobiology - necropsies
- Ministry of Agriculture, Nature and Food Quality

Report for [download](#)

Contact

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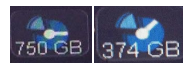
PROTOCOL T.B.V. HET ONDERZOEK 'Onbedoelde bijvangst in beeld'

Benodigde documenten aan boord

1. Overeenkomst deelname onderzoek
2. Machtiging ontheffing Flora & Fauna-wet
3. Begeleidende brief bij de machtiging



Figuur 1 EM-camera aan boord



Figuur 2 Detail beeldscherm opslag: 750 GB vs. 374 GB vrij



Figuur 3 Achterkant systeem met locatie geplaatste schijf.

Gebruik & onderhoud EM systeem

1. Video-PC aan bij aan boord gaan; uit bij terugkomst in haven
2. Maak lenzen dagelijks schoon
3. Meld storing, schade of vragen direct bij projectteam
4. Controleer status harde schijf en meld projectteam indien 75% vol (Fig.2 Detail beeldscherm van status opslag).
5. Wanneer de schijf >75% vol is:
 - a. Haal volle schijf eruit en plaats nieuwe (Fig.3)
 - b. Stuur volle schijf in bijgeleverde envelop AANGETEKEND naar: IMARES - Project 'Onbedoelde Bijvangst in Beeld', Haringkade 1, 1976 CP IJmuiden

Wat te doen bij bijvangst dode bruinvis*

1. Haal waar mogelijk de bruinvis aan boord
2. Bevestig het genummerde label met tie-rip om de staartwortel
3. Maak foto van (1) bruinvis nog in het net waar mogelijk (2) totale bruinvis + label; (3) close up van kop; (4) close up van staart
4. Kies uit de volgende twee mogelijkheden:

* Zet levende bruinvissen voorzichtig terug in zee

a. Aanlanden

Meld bijvangst zo snel mogelijk aan projectteam
Projectteam regelt het transport



b. Overboord zetten

Meld bijvangst en label-nummer zo snel mogelijk aan projectteam

Projectteam 'Onbedoelde bijvangst in Beeld'

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Bram Couperus (IMARES) M 06 30 46 69 45



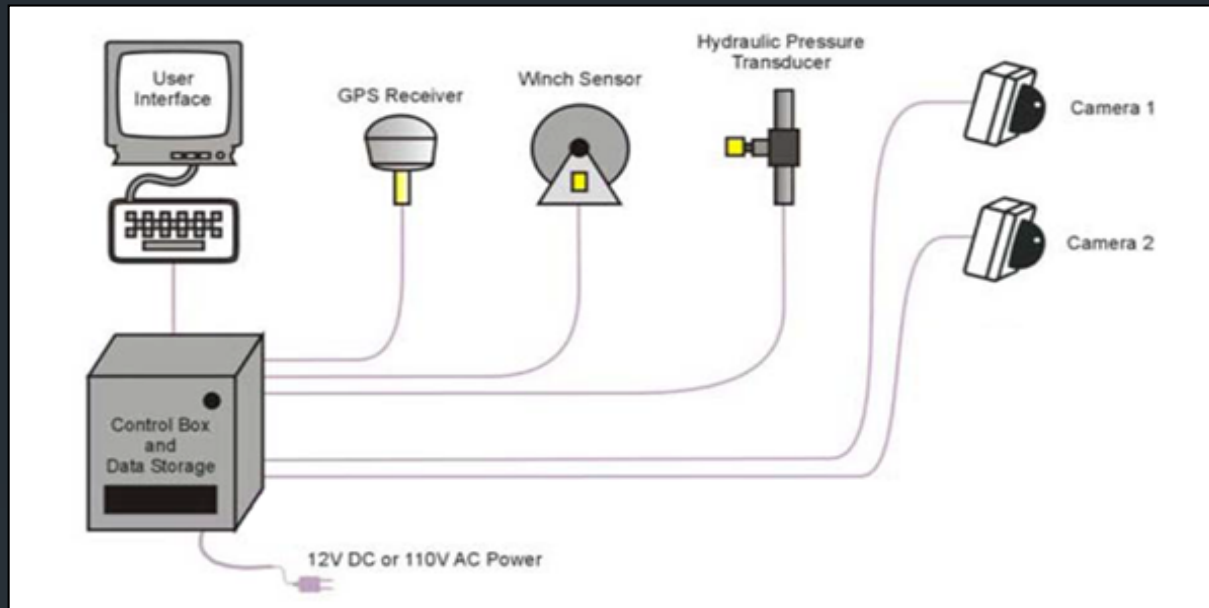


Figure 4. Schematic diagram of the setup of the electronic monitoring (adapted from Archipelago Ltd.). On three vessels only one camera could be installed on board.