

Bridging knowledge gaps

Joint NWWAC/NSAC Workshop on Skates & Rays Management

Edward Schram, Pieke Molenaar, Jurgen Batsleer, Lennert van de Pol, Eleanor Greenway, Jan Jaap Poos and many more...



Project outline

- Time: 1 January 2021 – 30 June 2023
- Budget: €1.5 mio (EMFF)

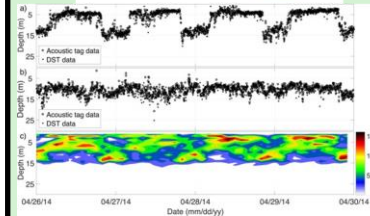
WP A Discard survival

Measure survivability of rays discarded by the main Dutch demersal fisheries



WP B Spatiotemporal distribution

Map the life cycle of demersal sharks and rays in the North Sea and explore the importance of the Dutch coastal zone



WP C Feedback to policy and management

Information used to give substance to:

- The roadmap for skates and rays (CFP)
- Agreements in the shark and ray recovery action plan (MSFD)

WP A: Discard survival

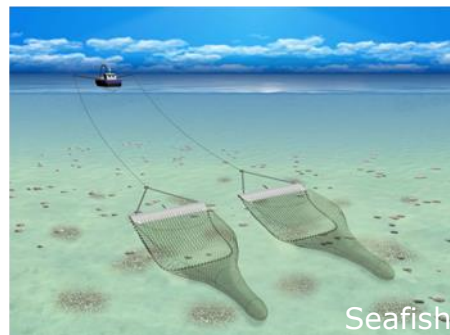
What are the survival rates of rays that are returned to the sea after being caught by the main Dutch demersal fisheries?

- Phase 1: exploratory phase
 - Choice of fishery and species (both max. 2)

Flyshoot



Beam trawl



- Phase 2: Measuring discard survival

Long-term monitoring



Trip	Year	Week	Vessel	RJC	RJM
1	2021	41	TX3	29	29
2	2021	47	SL45	46	
3	2022	3	TX3	29	22
4	2022	9	SL45	32	1
5	2022	14	TX3	47	17
6	2022	19	SL45	1	15
7	2022	26	TX3	36	28
8	2022	32	SL45	55	12
9	2022	37	TX3	42	44
			Total	183	140
			SL45	134	28



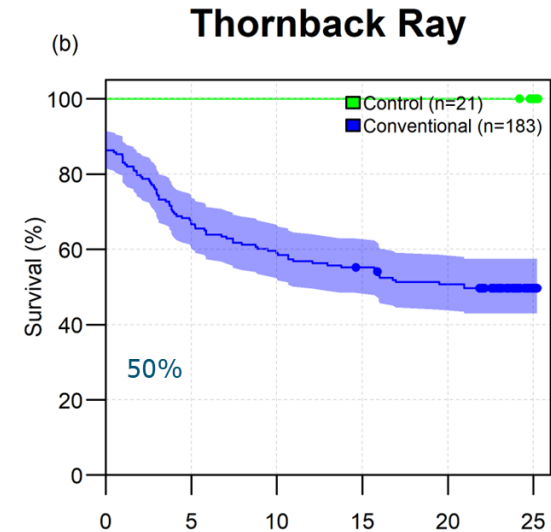
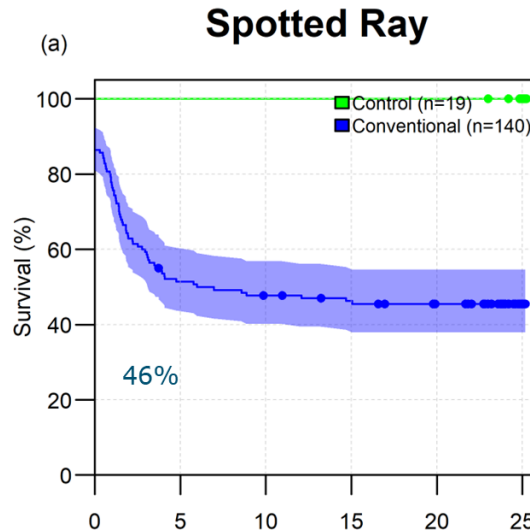
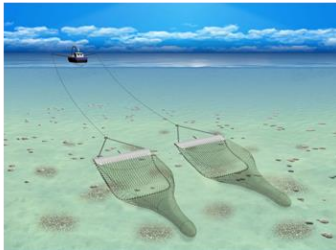
Monitoring-system in Yerseke



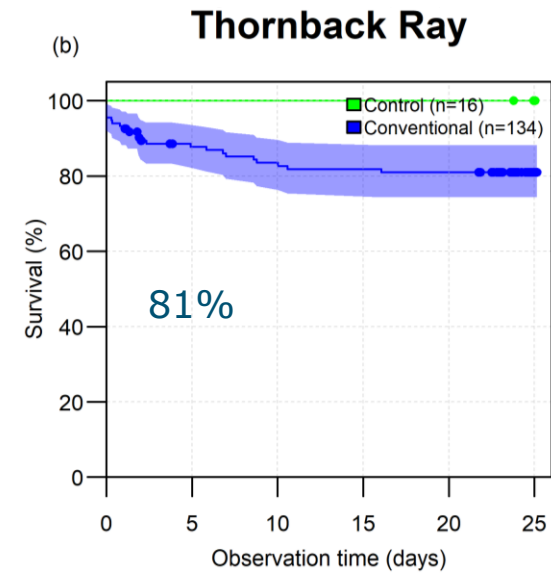
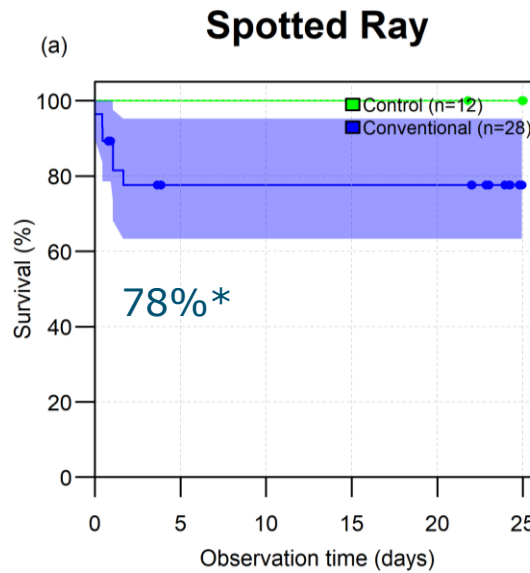
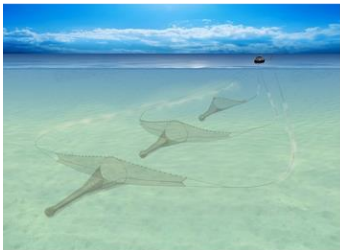
- Recirculation system in Climate room
- 12 tanks of 2.5 m²
- 21-days in monitoring facilities

Discard survival - outcomes

Beam trawl



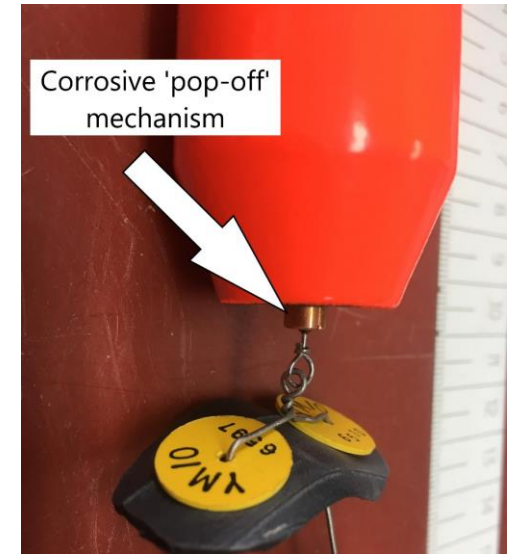
Flyshoot



WP B: Spatiotemporal distribution

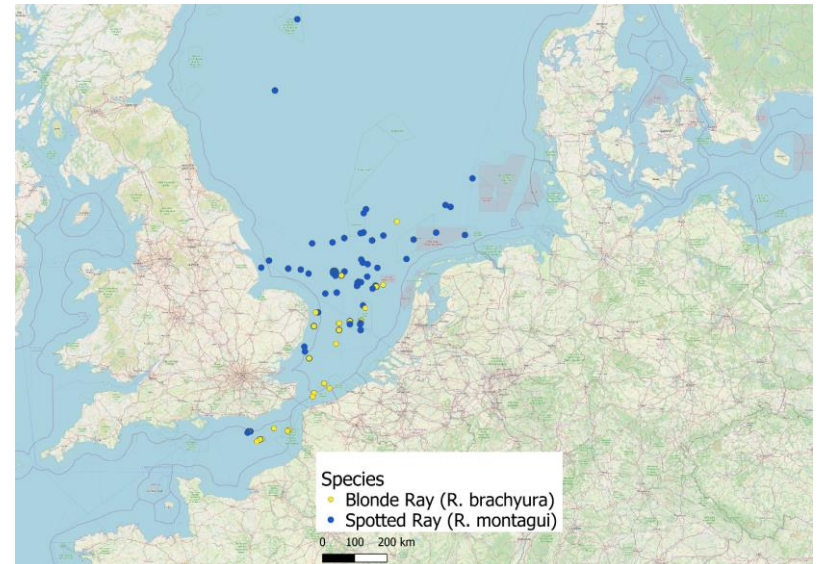
Data Storage Tags

- Depth
- Temperature
- 'Pop-off' Mechanism
- Release after 1.5 years

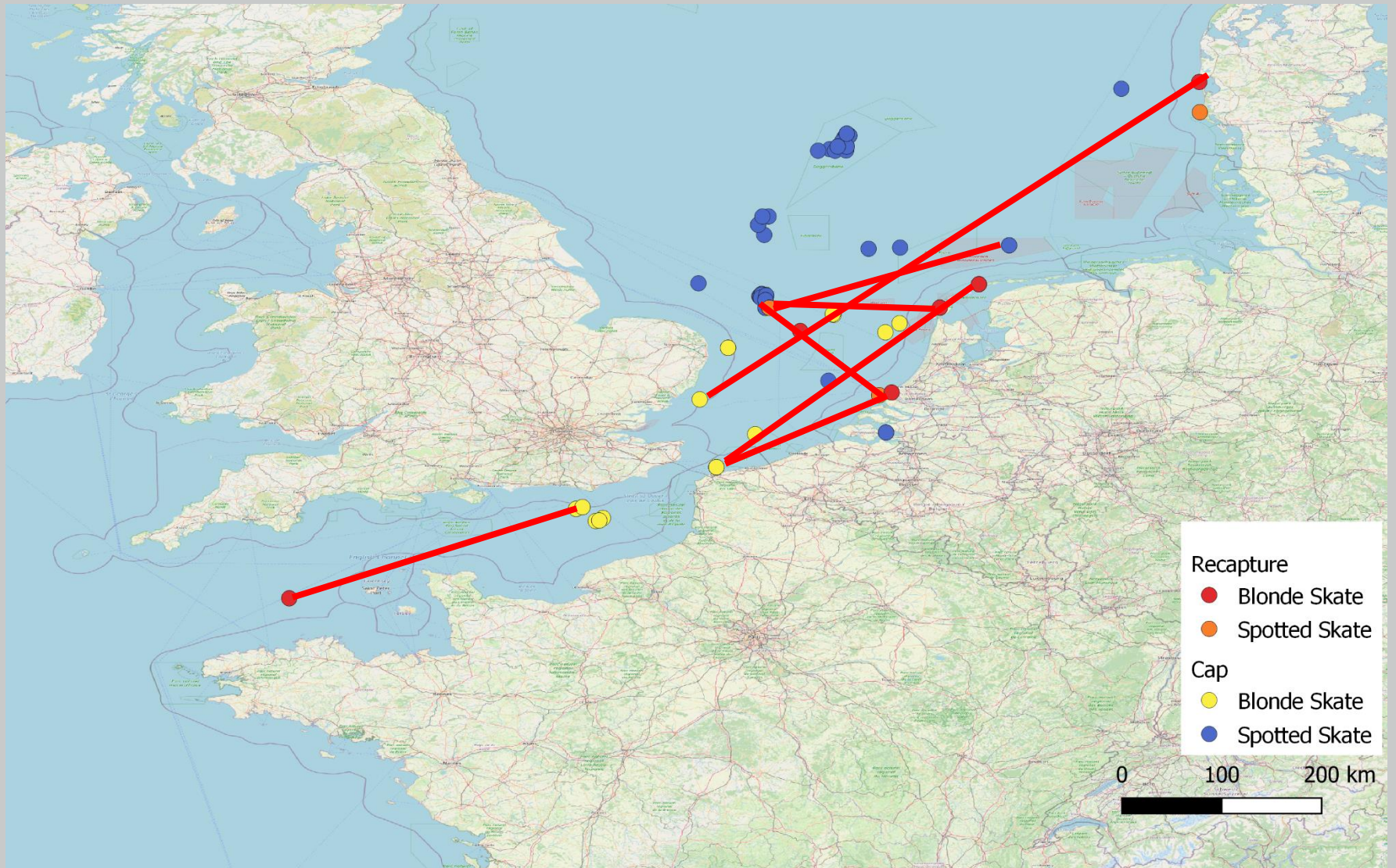


Release locations

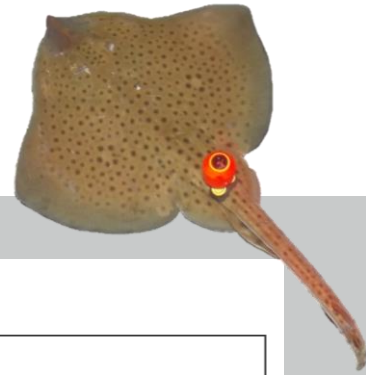
- ~ 160 tagged
- ~ 26 recaptures



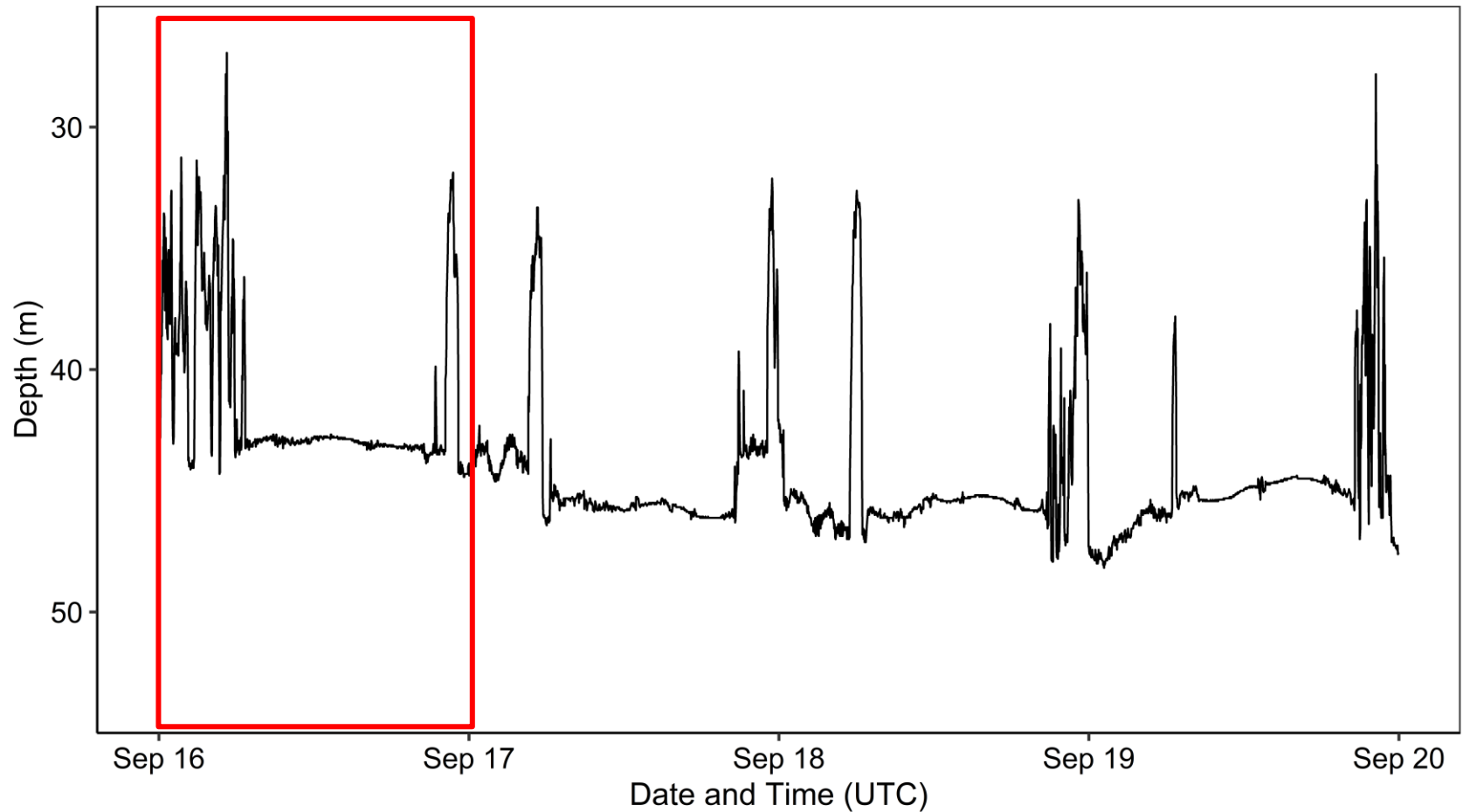
Recaptures



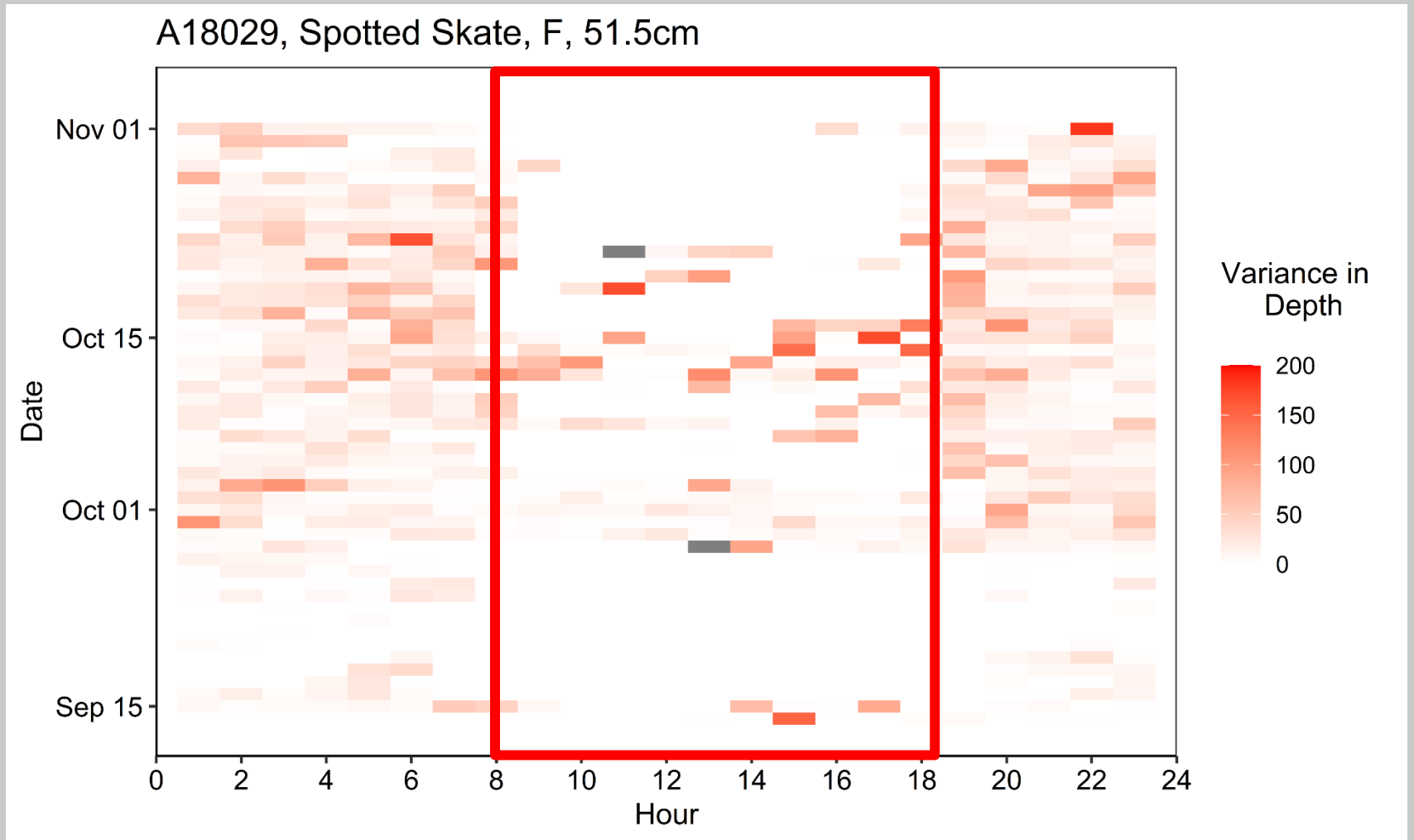
Activity over 4 days



A18029, Spotted Skate, F, 51.5cm



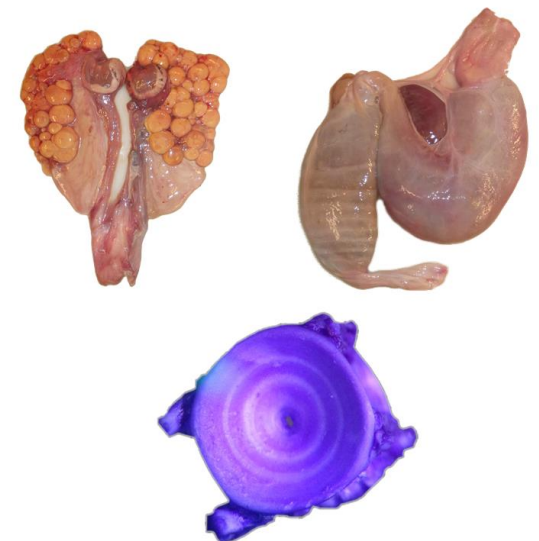
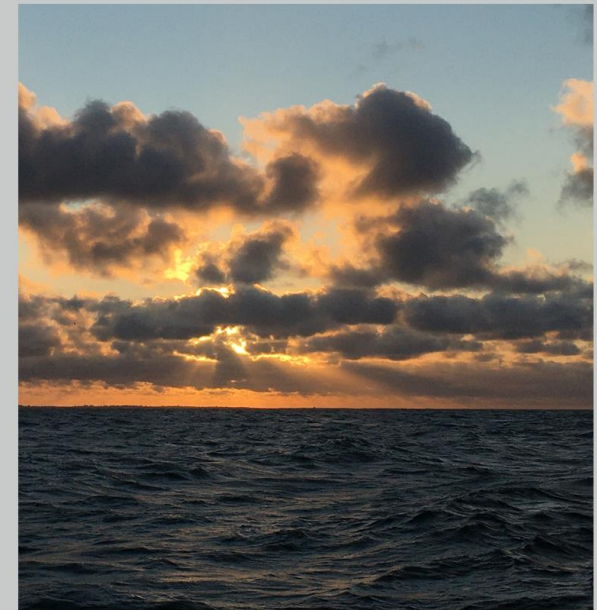
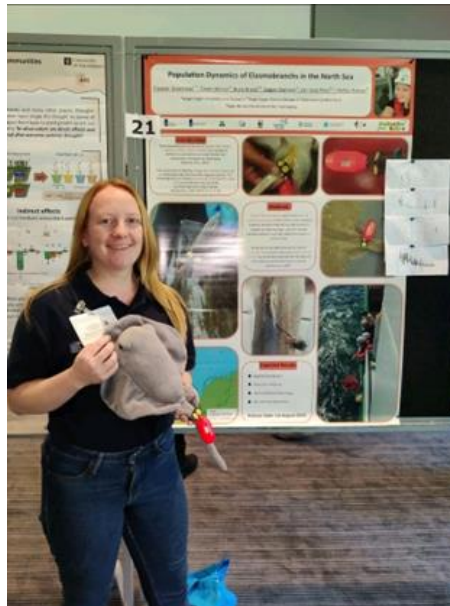
Hourly movement



More questions...

Is behaviour affected by:

- Daylight?
- Dusk/Dawn?
- Seasonality?
- Age?
- Sex?
- Diet?



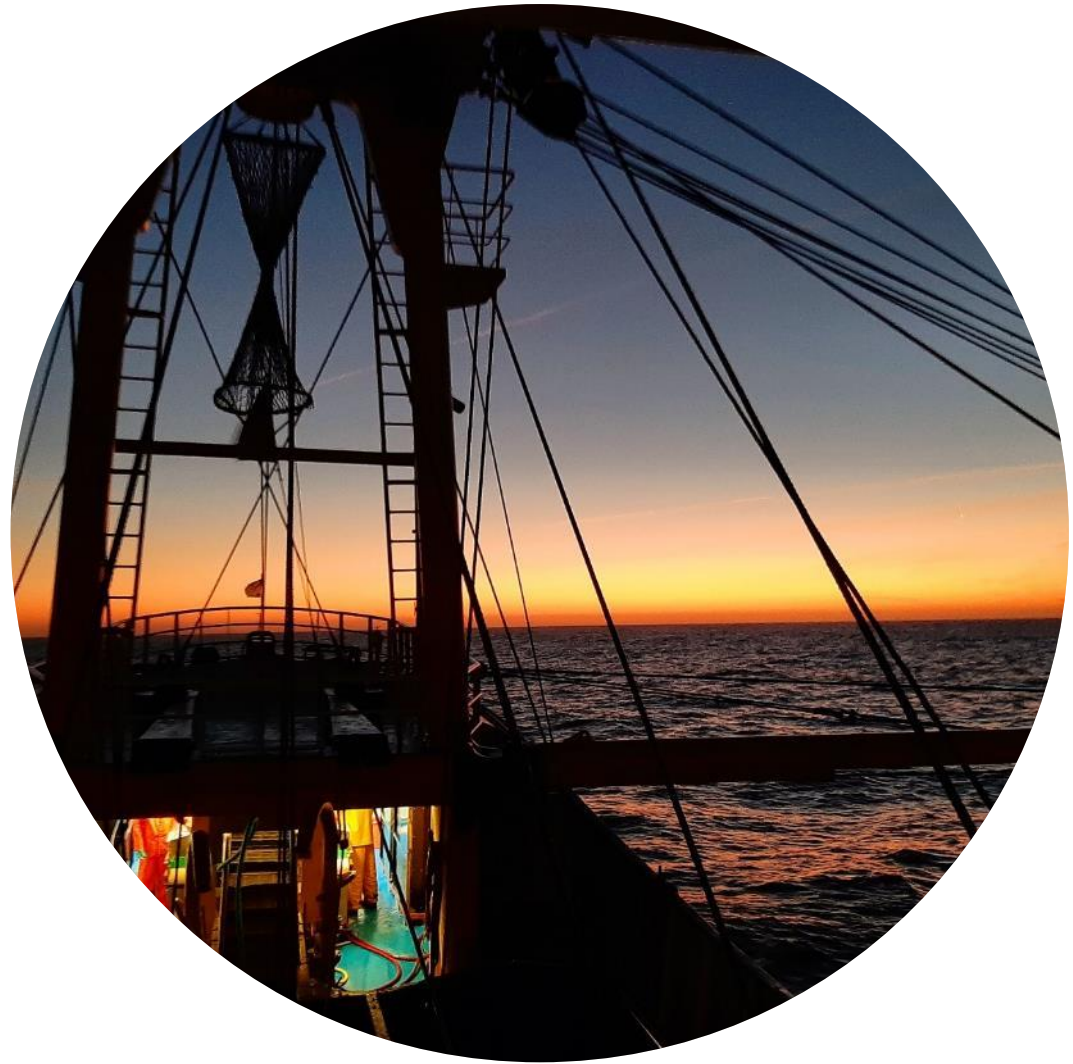
Questions?

Jurgen.Batsleer@wur.nl

Edward.Schram@wur.nl

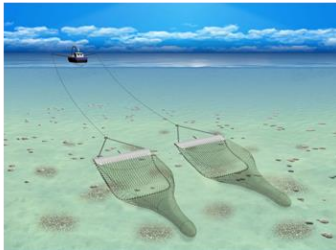
Eleanor.Greenway@wur.nl

Janjaap.Poos@wur.nl

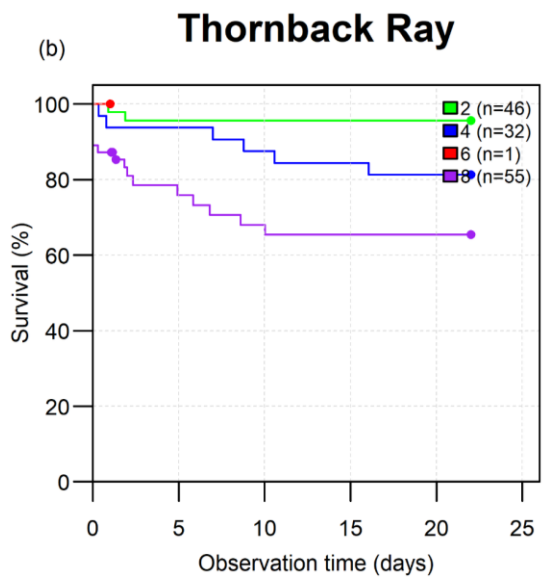
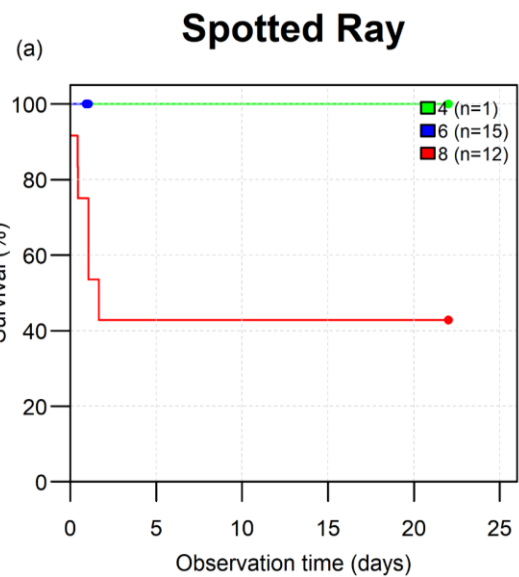
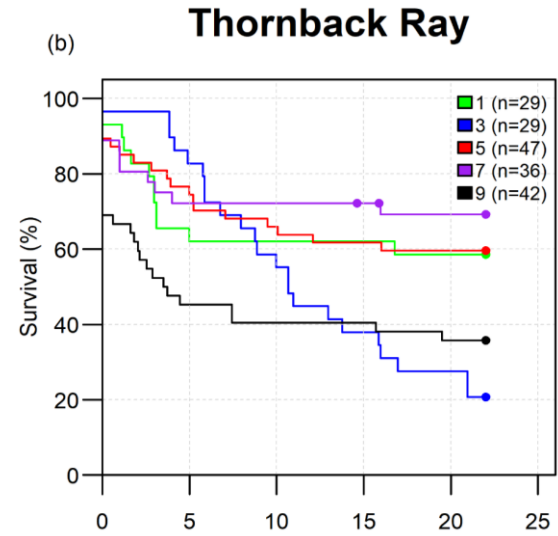
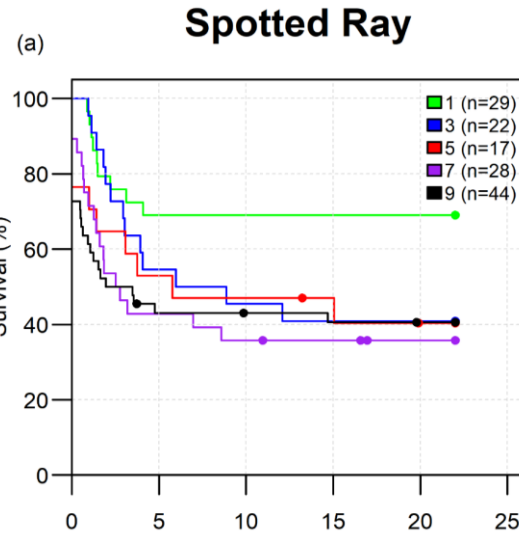
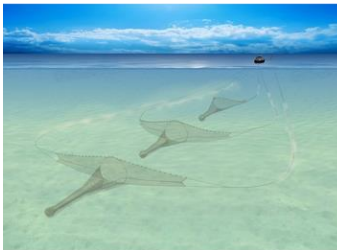


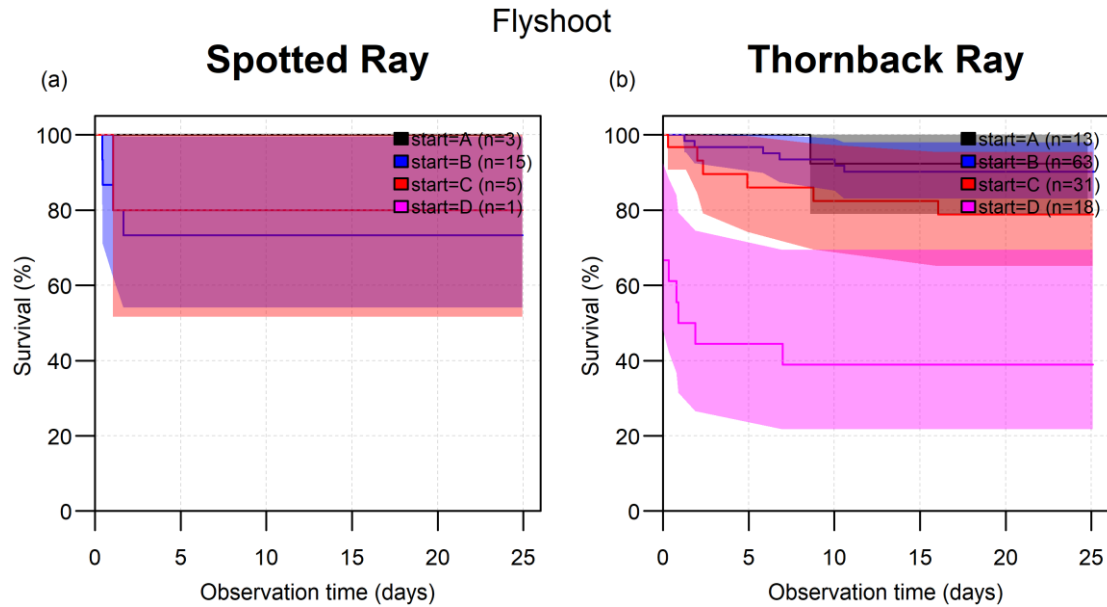
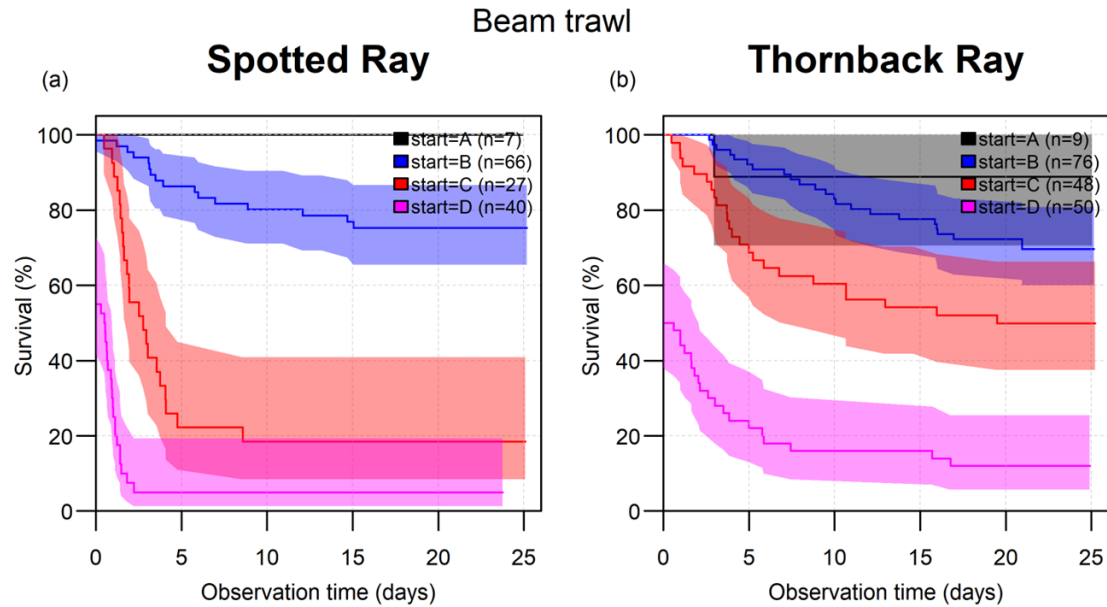
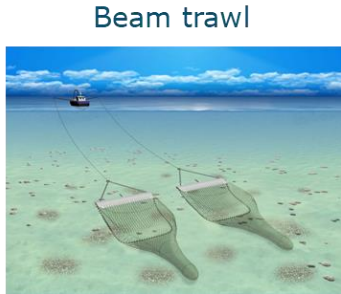
Beam trawl: discard survival

Beam trawl



Flyshoot





Design & building unit for large rays



- 6 rays > 65 cm

de boer **RVS**

Output Data-storage tag



Time: 2021-09-14

