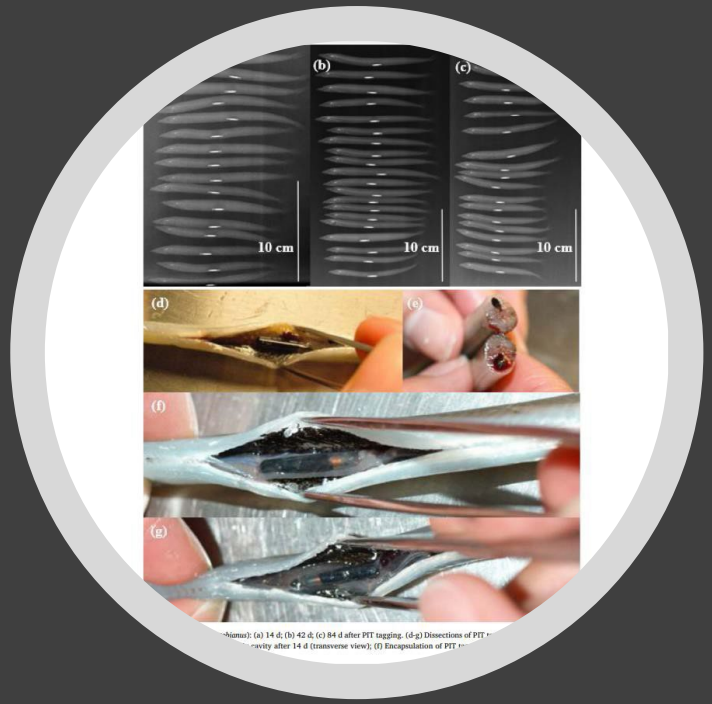

Large scale tagging of small pelagics

Claus R. **Sparrevohn**[1], Hans J. Olesen[2], Eva Maria Pedersen[2], Jes Dolby[3], Ole Henriksen[2], Anders Nielsen[2], Asbjørn Christensen[2], Dorte Bekkevold[3], Belén J. Mena[3], Karin Hüssy[2], Christoffer Moesgaard Albertsen[2], Mikael van Deurs[2], Josefine Egekvist[2] , Søren Anker Pedersen[4], Henrik S. Lund[5], Jesper Juul Larsen[5] and **Henrik Mosegaard[2]**

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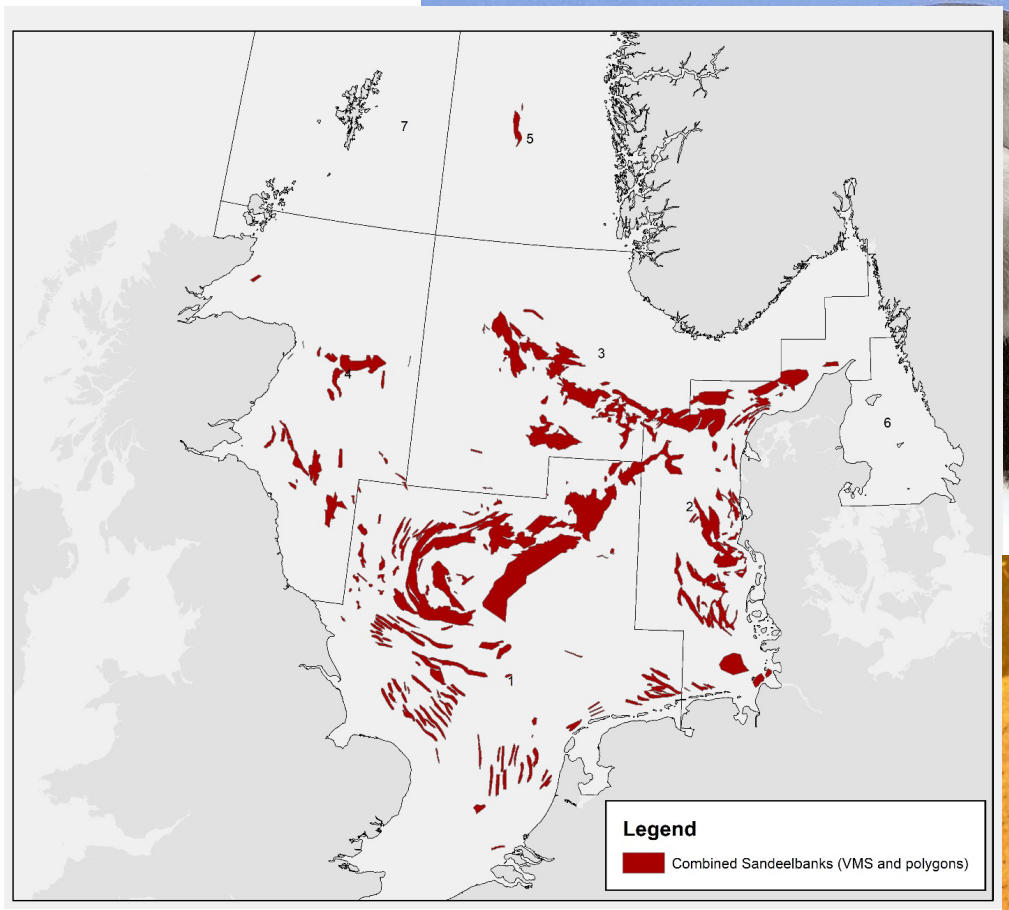
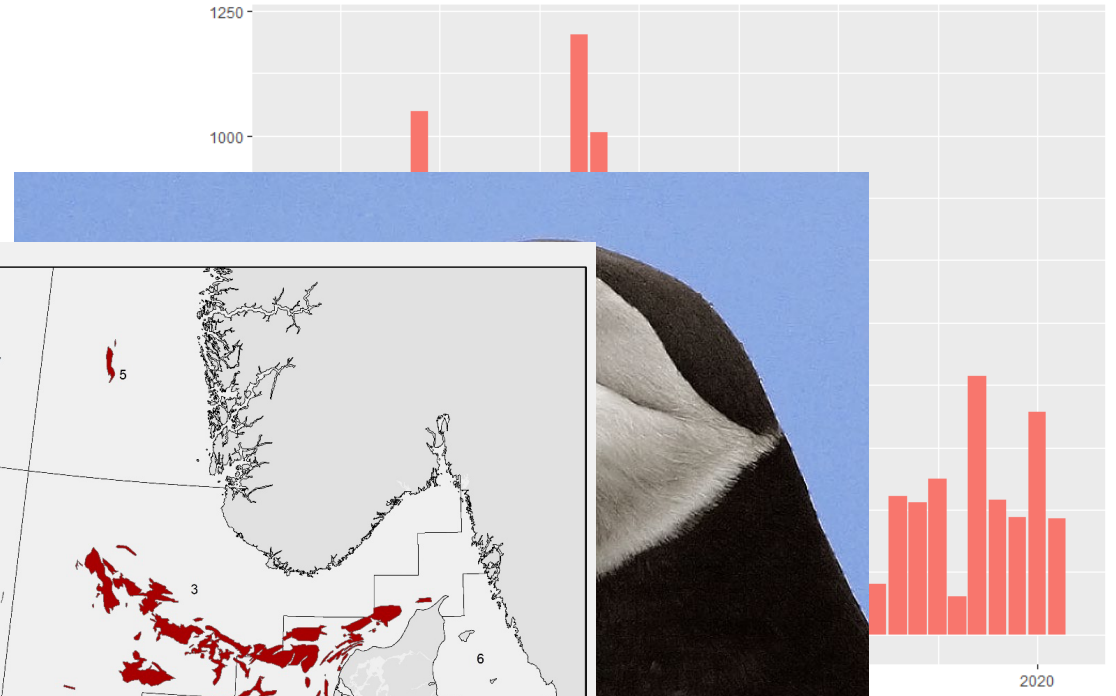
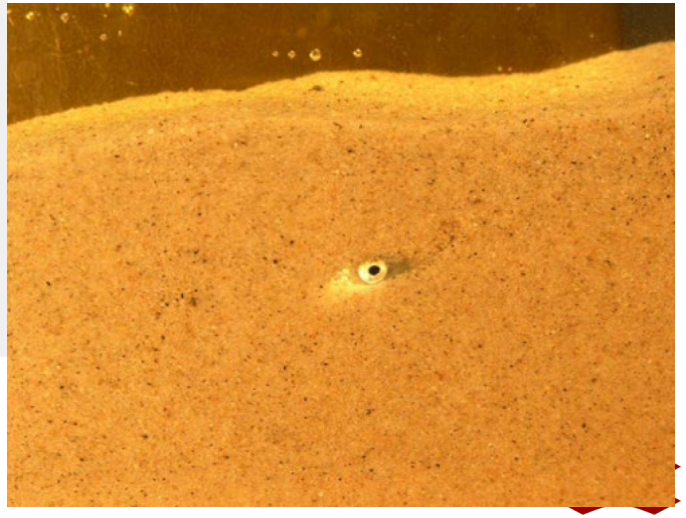
Why a largescale tagging study om sandeel?

- Important North Sea Fishery,
- Important forage fish,
- Spatial structure in distribution.







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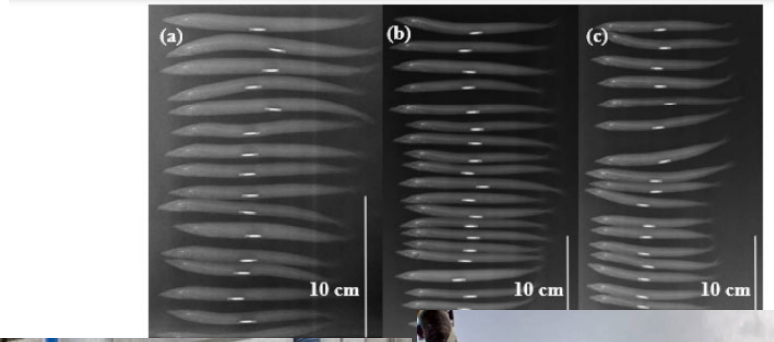
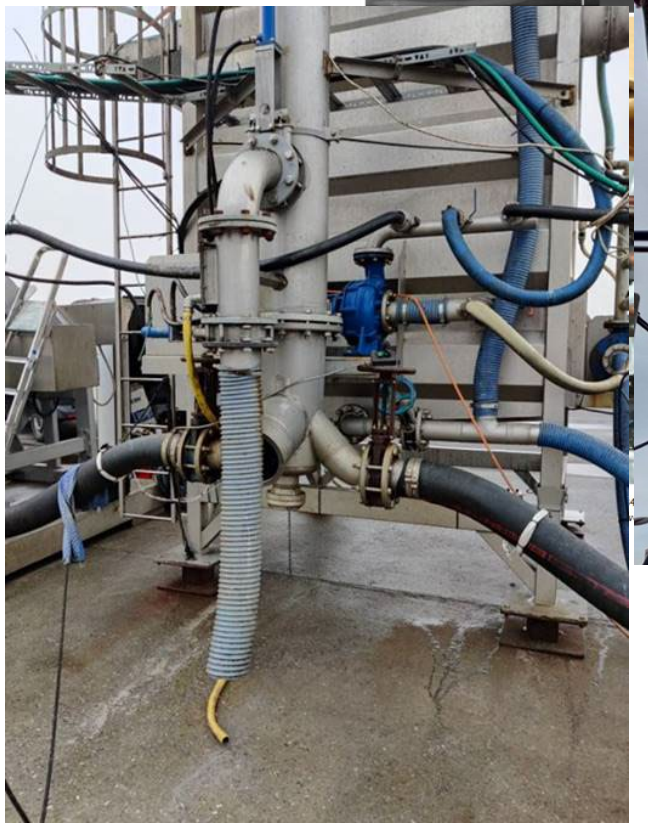
Does it make sense to tag a relative few individuals out of a large population

- Laboratory tagging experiment shows high survival (Jørgensen at al., 2017),
- Fishing mortality up to 0.5,
- High scanning efficiency (98%),
- Majority of the Danish catch scanned (>90%).





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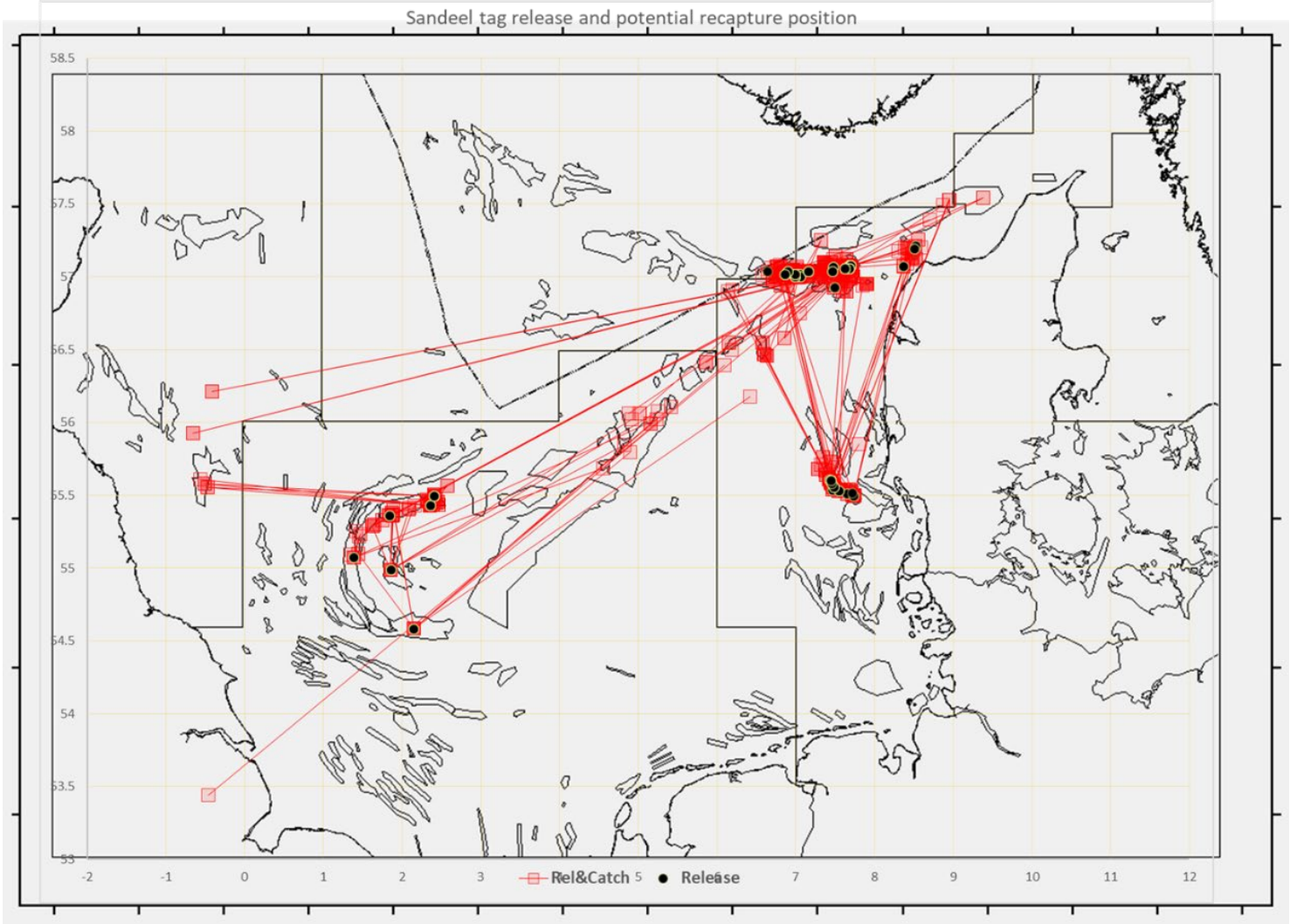
Experimental overview

- 16,522 individuals tagged during 2020-2022,
    - Trawl tagged 11,410
    - Dredge tagged 4871
- 187 recaptured,
    - 175 trawl tagged
    - 12 dredge tagged



Release positions (black dots) with recaptured sandeels and potential catch locations on fishing trips with identified recaptures (red squares), red lines connect every registered tag from a release position with all potential fishing locations.

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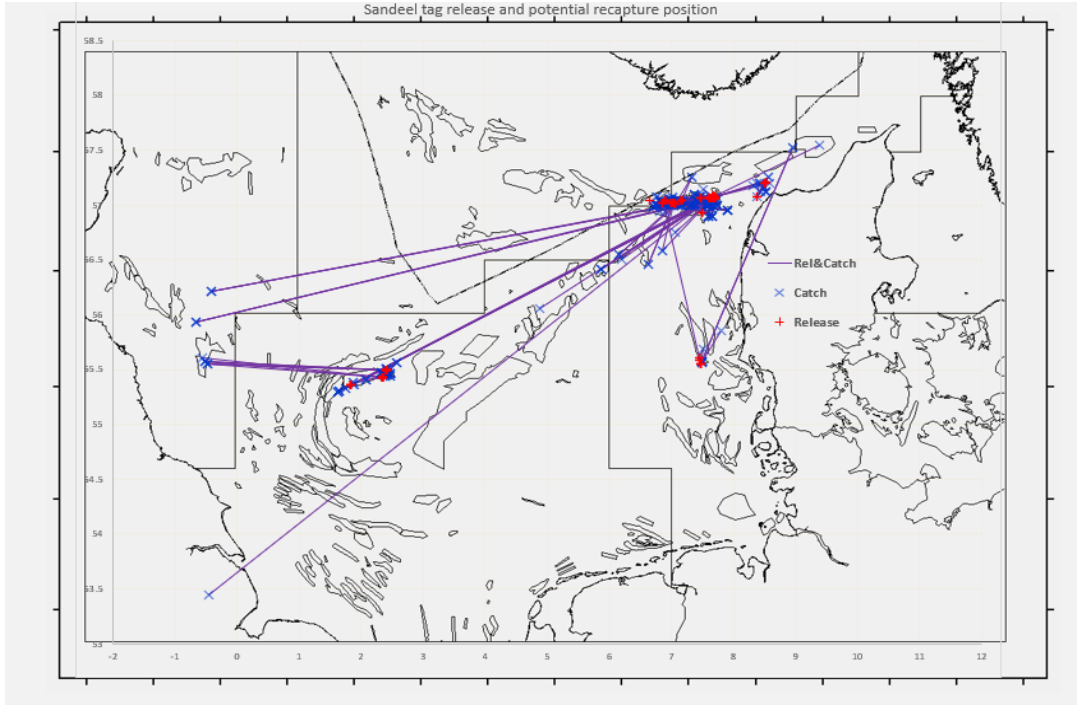
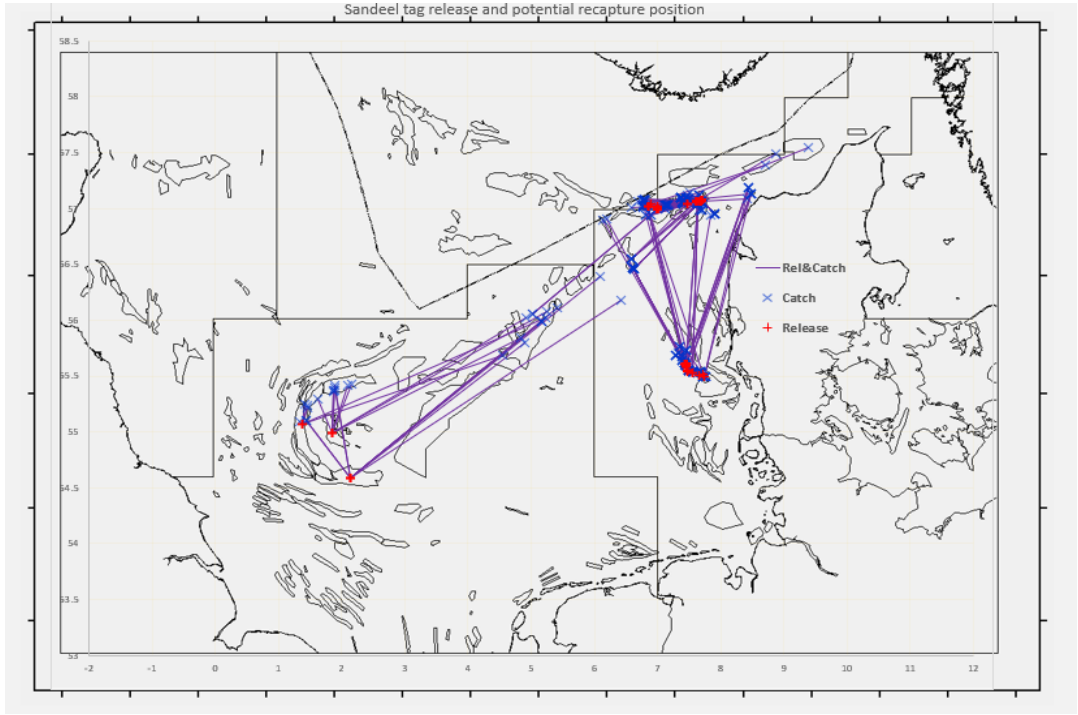
Time since release

- Recaptures same year as release (upper panel)
- Recaptures one year after release (lower panel),





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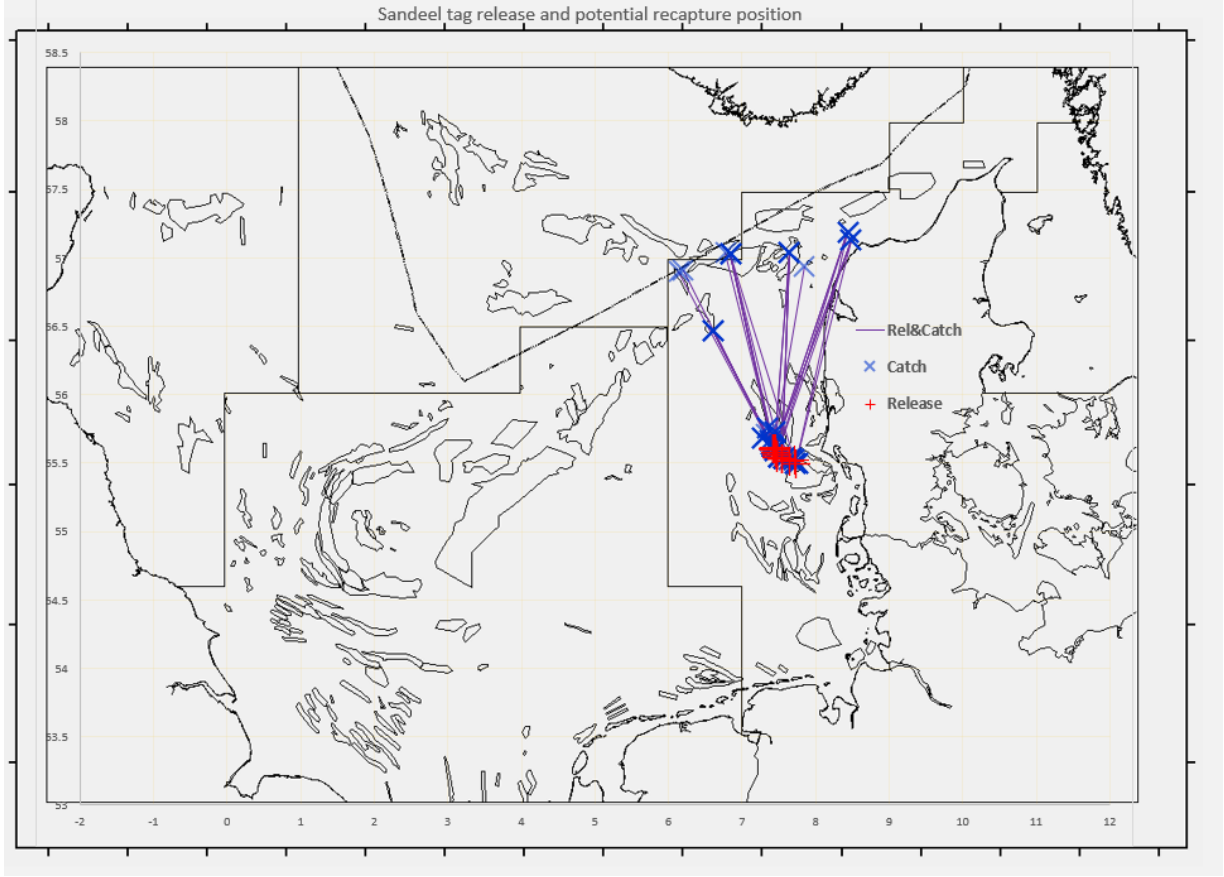
Diverse strategies

- Release at ”horns rev”
  - 18 of 61 recaptures showed movement >100 km
  - 43 of 61 recaptures stayed close to release site



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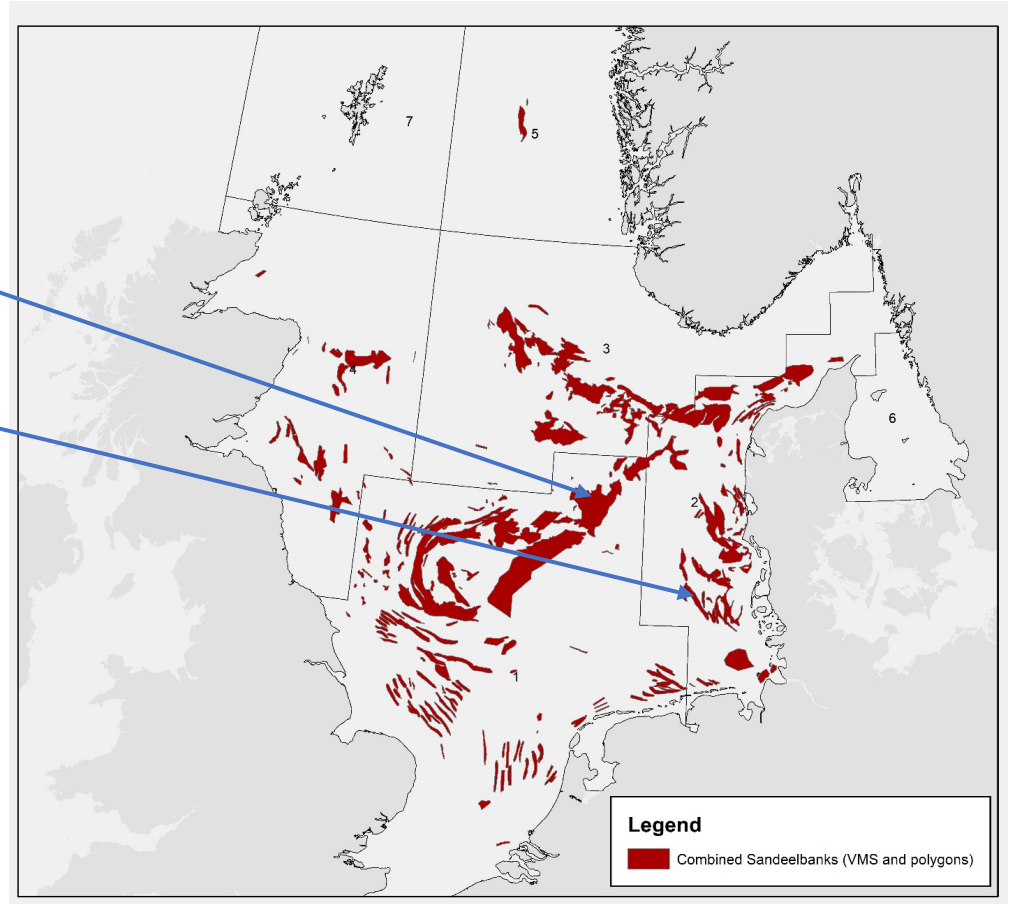
Heterogeneity

- Around 3905 releases at “Tail end” → 0 recaptures
- Around 3964 releases at “Horns rev” → 62 recaptures



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Seasonality

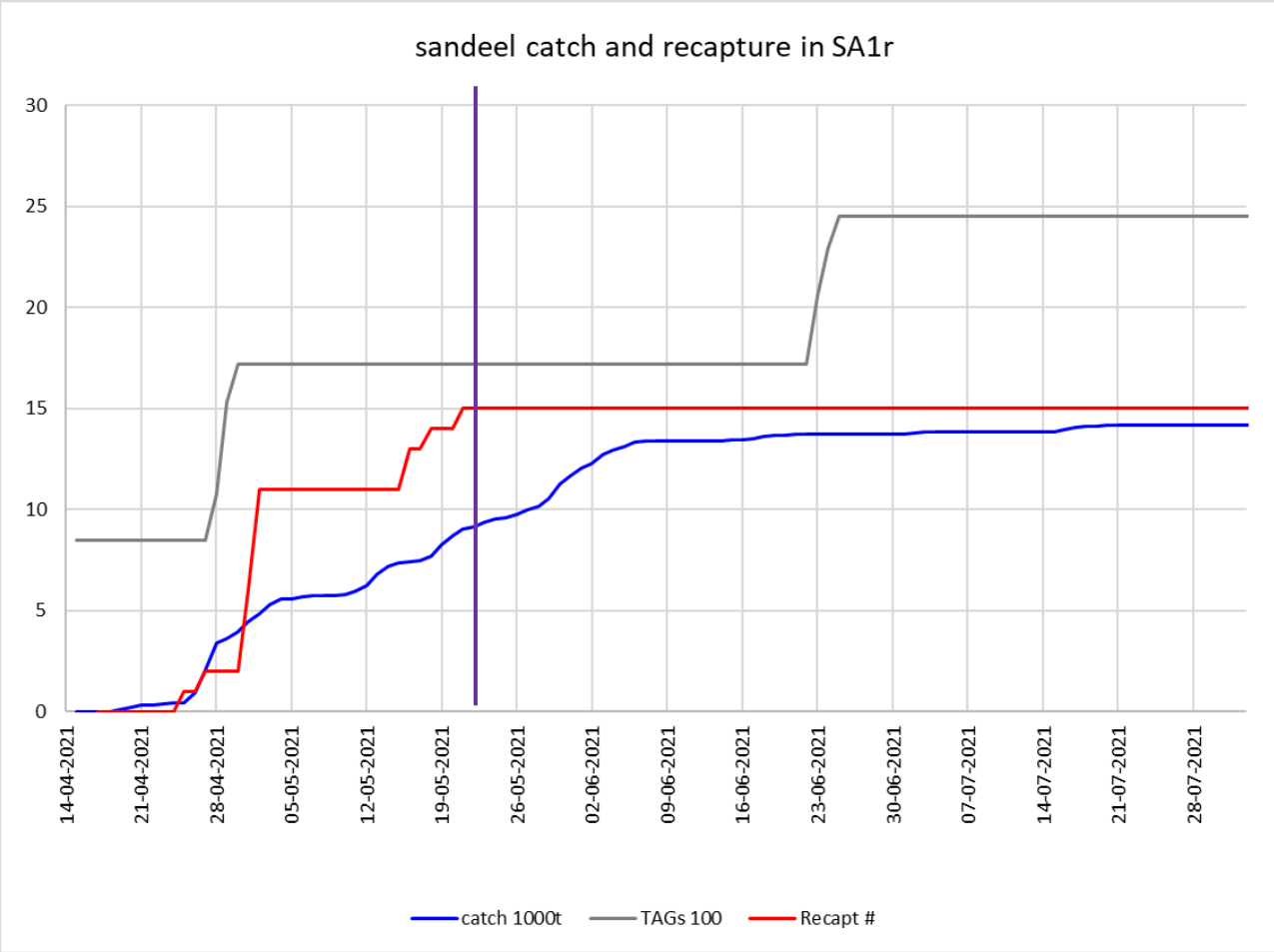
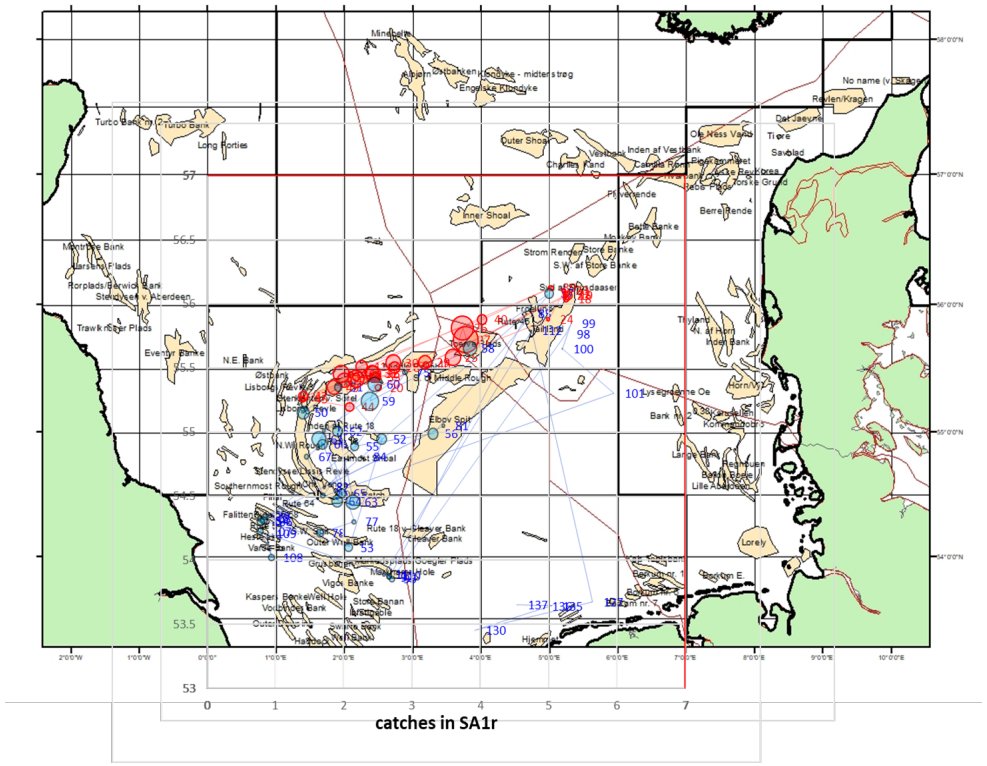


Figure 8. SA1 Catches in 1000' t, tagged sandeels in 100' and number of individual recaptures versus a time line starting April 1st 2021



Distribution of the sandeel fishery in 2021 in SAr1. Numbers indicate days after April 1st. Red marks indicate catches before May 22nd (day 49) and blue marks indicate catches from 23rd of May, bubbles are proportional to daily catches.

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Conclusions

- Methodology works,
- Large spatial heterogeneity in recapture rates,
- Migration on 100 km scale,
- Tendency for higher recaptures with larger batches,
- No recaptures of fish < 12 cm.

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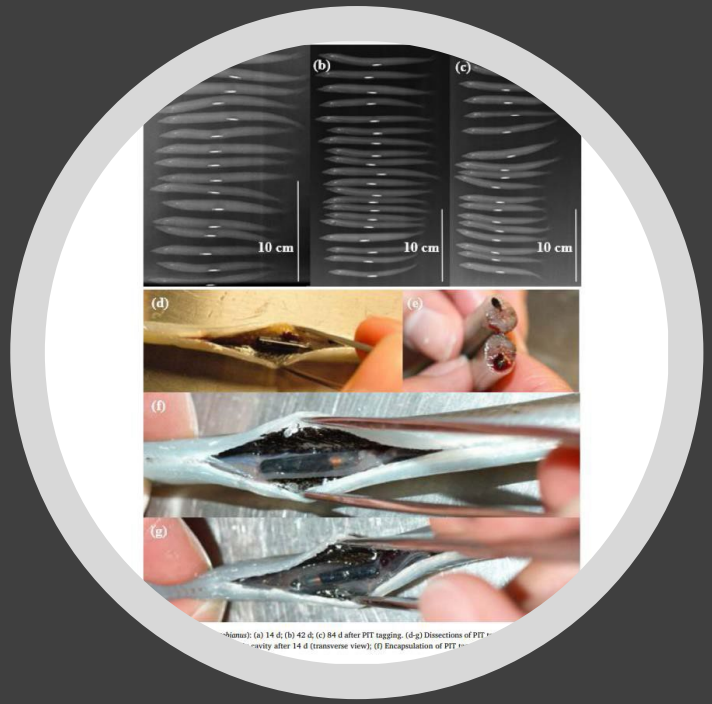

Thank you

Claus R. **Sparrevohn**[1], Hans J. Olesen[2], Eva Maria Pedersen[2], Jes Dolby[3], Ole Henriksen[2], Anders Nielsen[2], Asbjørn Christensen[2], Dorte Bekkevold[3], Belén J. Mena[3], Karin Hüssy[2], Christoffer Moesgaard Albertsen[2], Mikael van Deurs[2], Josefine Egekvist[2] , Søren Anker Pedersen[4], Henrik S. Lund[5], Jesper Juul Larsen[5] and **Henrik Mosegaard[2]**

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