



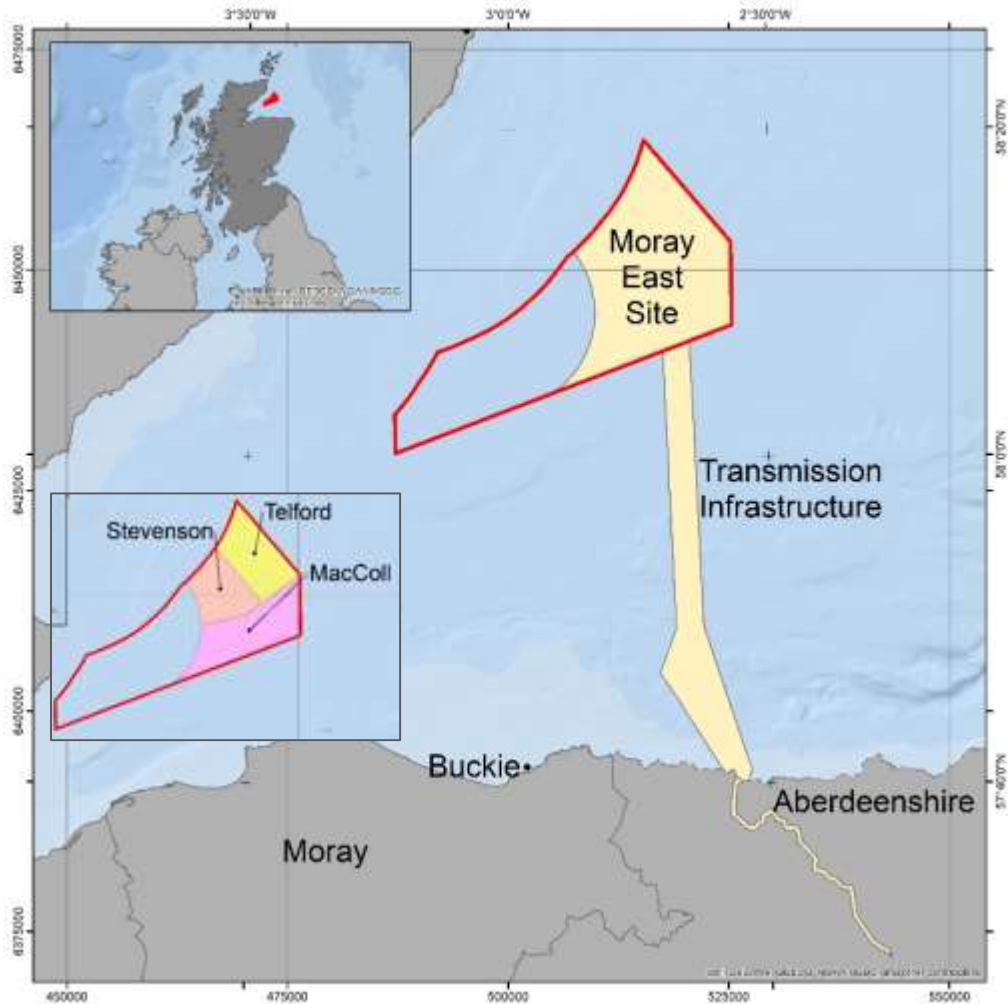
MORAY EAST

OFFSHORE WINDFARM

ScotMER Presentation

Edinburgh, March 2020

Moray East – Project Overview



- Located in the Outer Moray Firth, approximately 22 km from Caithness coast
- 100 WTGs and 3 OSPs, generation capacity of 950 MW
- 54 km export cable to landfall at Boyndie Bay, Aberdeenshire
- 36 km onshore cable route to two new substations at New Deer

Moray East – Offshore Construction Activities

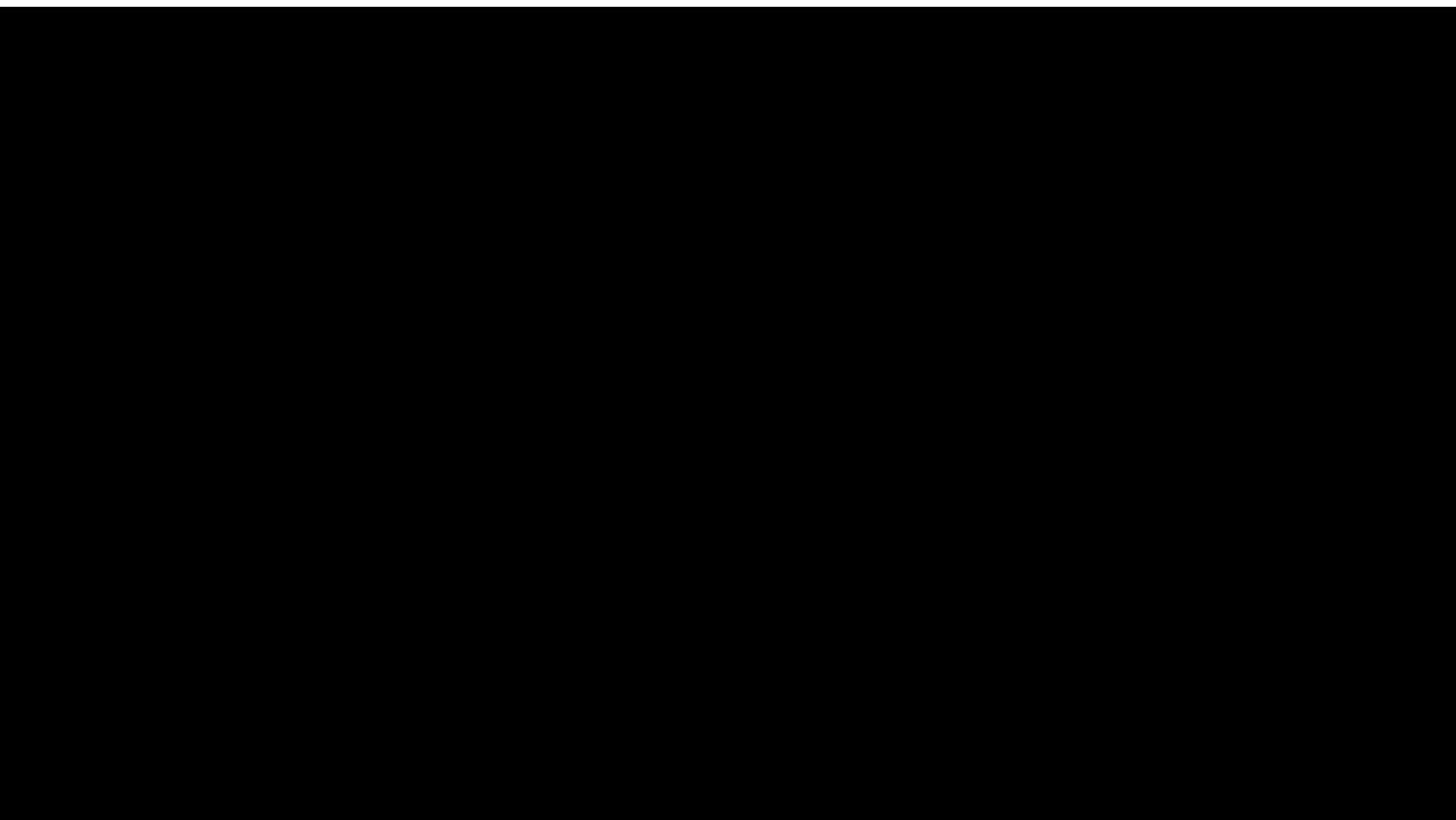


- Construction commenced May 2019
 - Landfall HDD completed
 - Piling operations completed
- Key construction activities for 2020:
 - Pile soil plug removal
 - Export cable boulder clearance
 - Export cable lay
 - Jacket installation
 - OSP topsides installation
 - Inter-array cable lay begins
- 2021-2022
 - Inter-array cable lay continues
 - WTG installation
 - Commissioning and generation

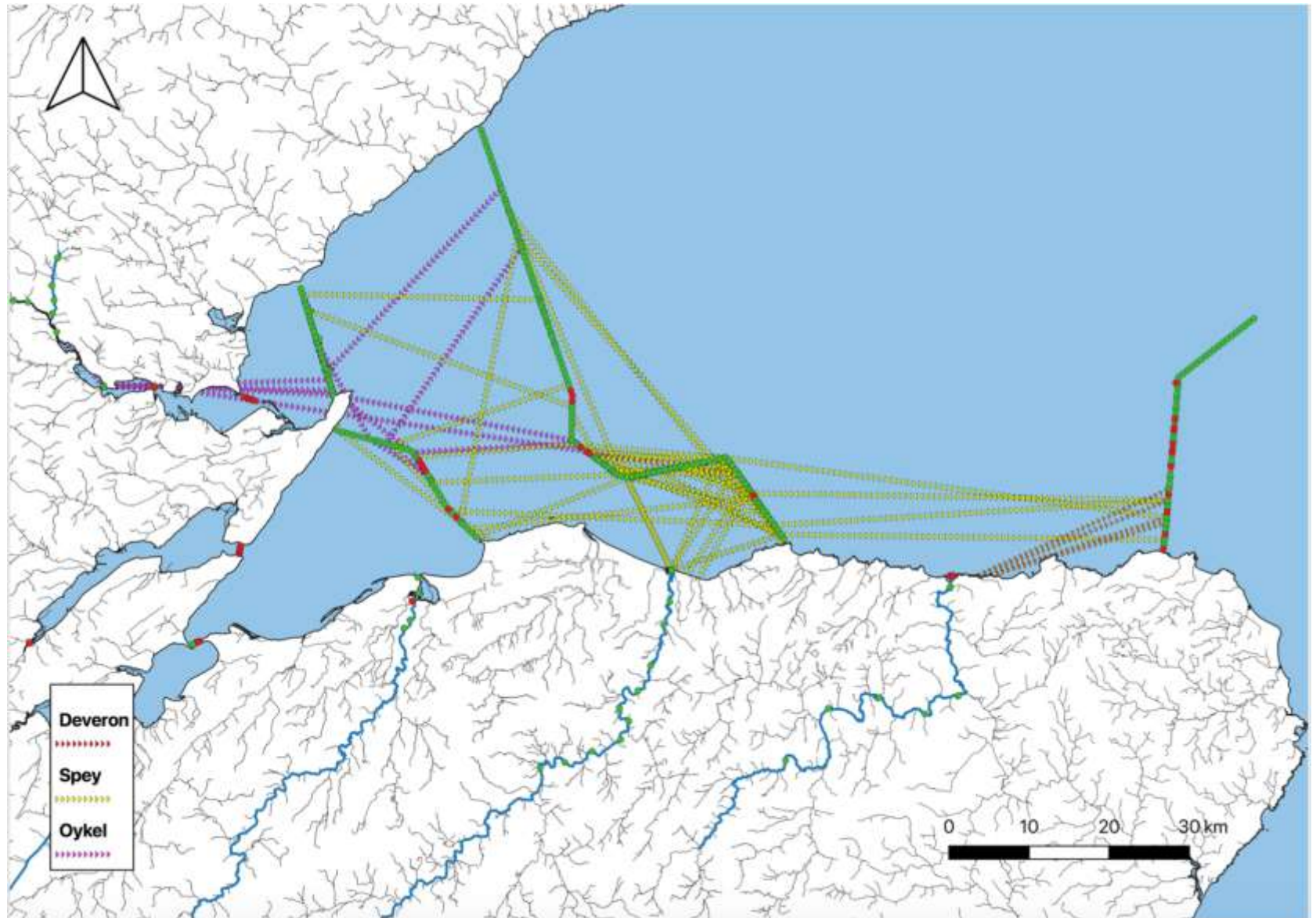


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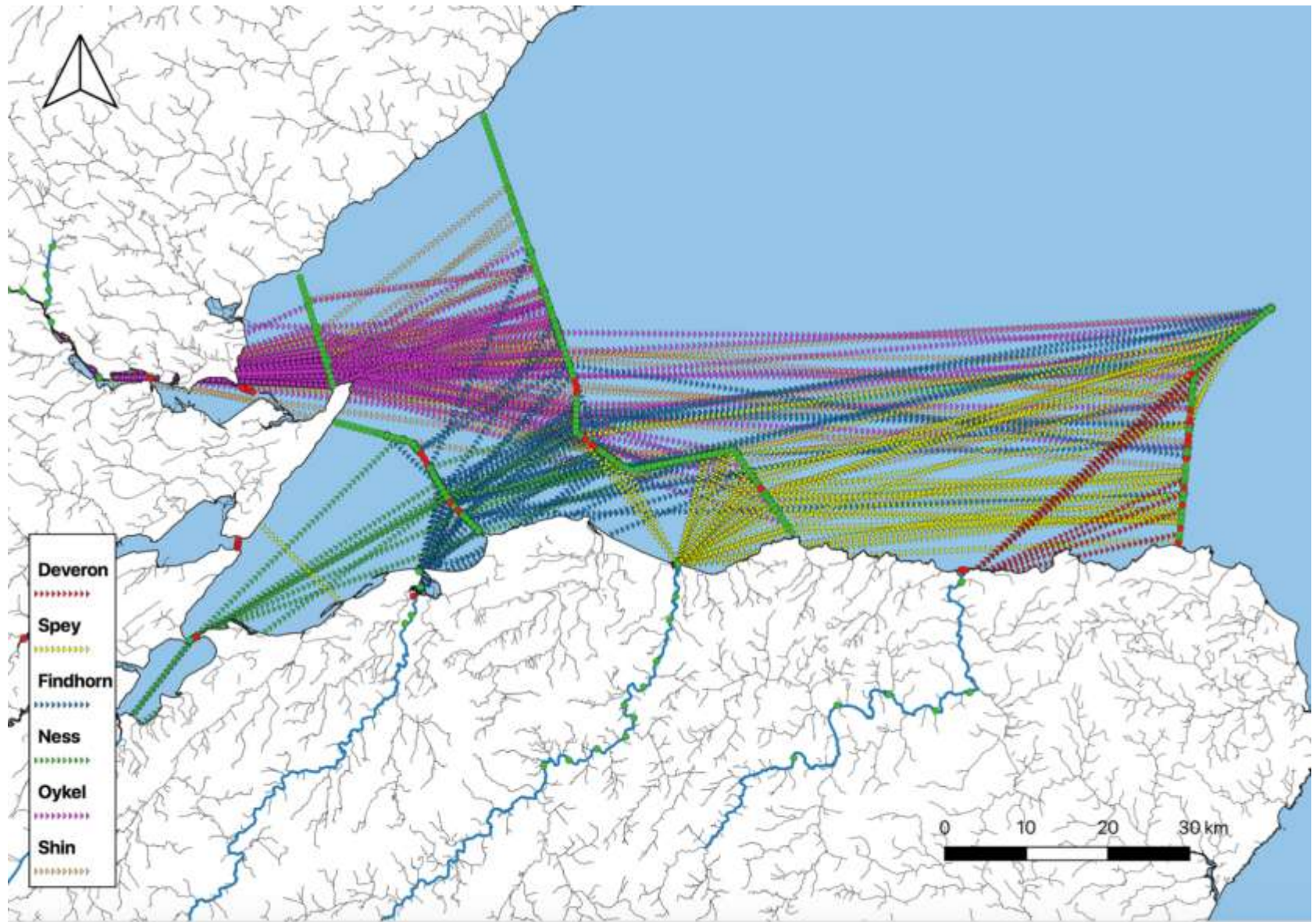
The Missing Salmon Project



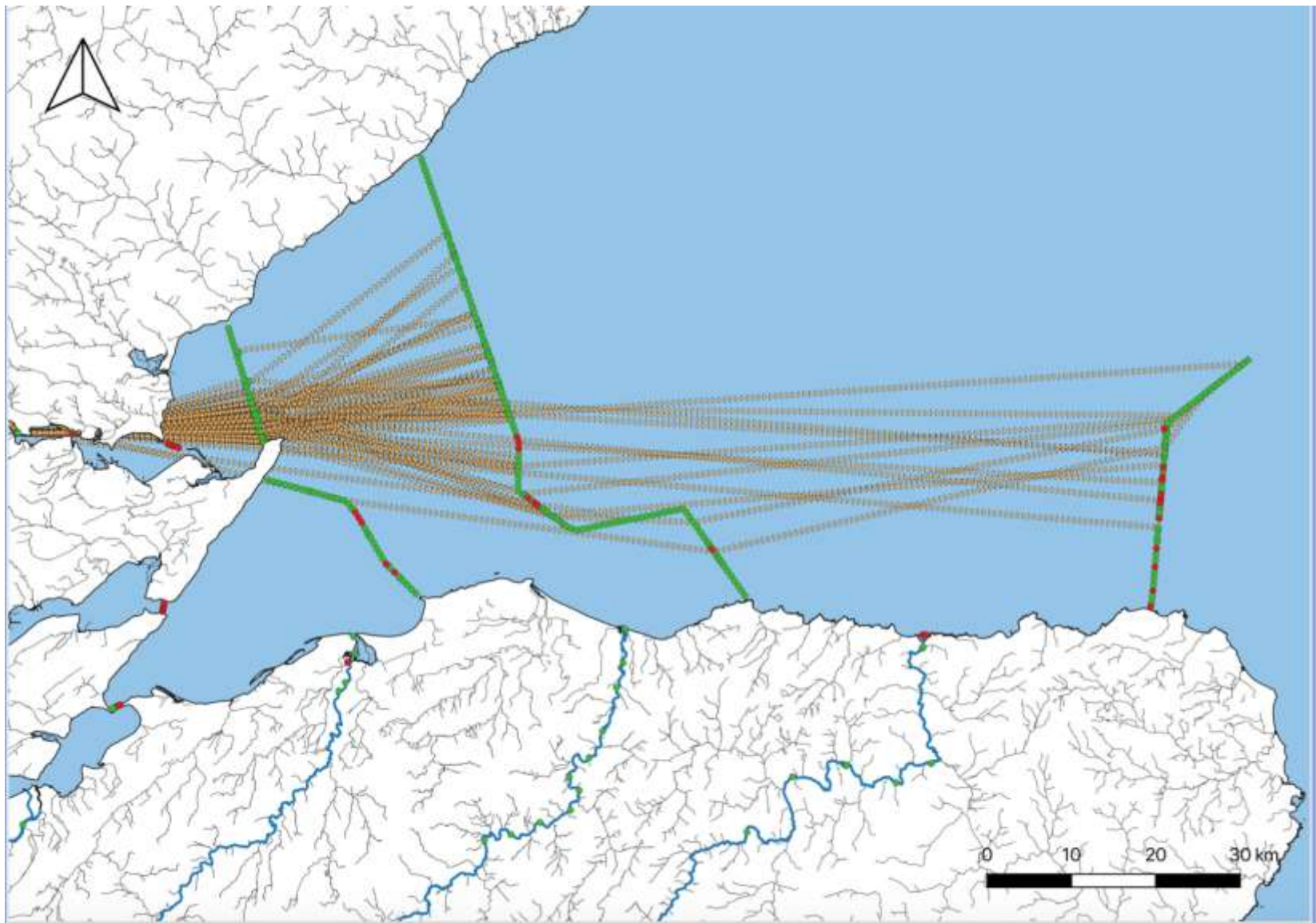
Sea Trout



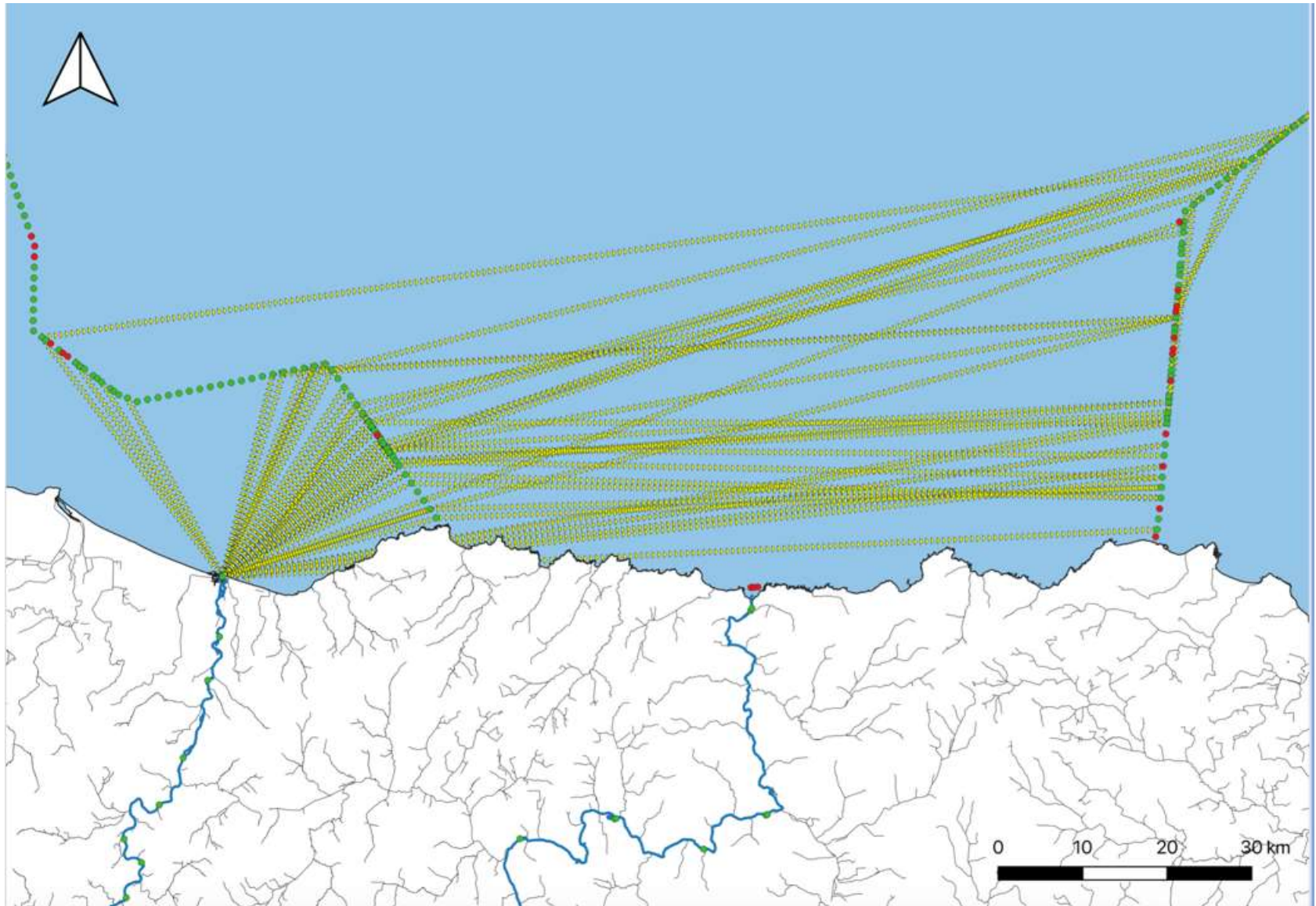
Atlantic Salmon



Atlantic Salmon (River Shin)



Atlantic Salmon (River Spey)



Study Conclusions and next steps

Conclusions

- Significantly greater proportion of fish going missing in the freshwater environment than expected
- Routes taken by fish once in the marine environment in the Moray Firth are multi-directional with no clear pattern

Next steps

- Repeat the 2019 study to ensure that they were not anomalous results
- Increase the resolution of the study in the freshwater environment to determine whether river conditions were implicated in fish going missing
- Focus on the potential suspects implicated in the fish going missing, with an emphasis on freshwater predation
- Trial an unmanned autonomous vehicle to track salmon smolts outside of the Moray Firth to look at speed and direction of travel once they leave the firth

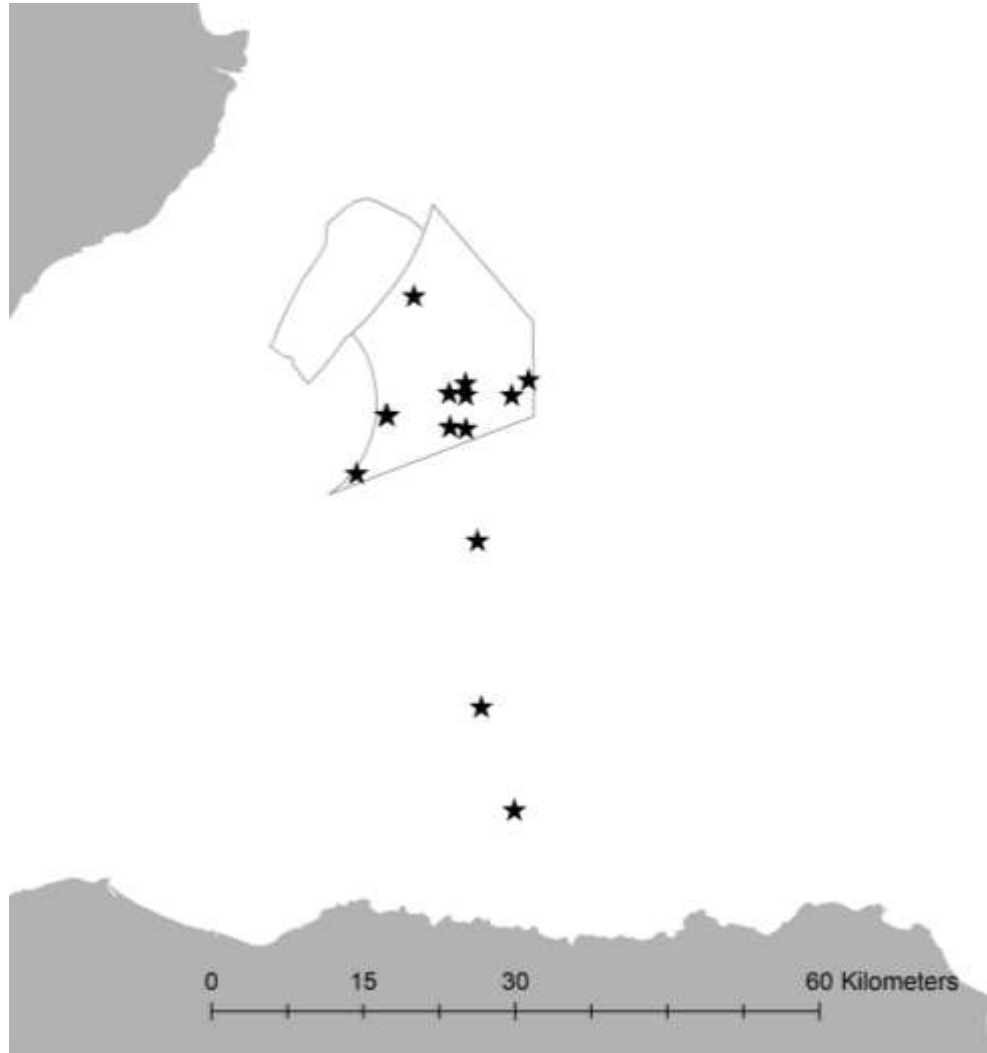


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UXO Monitoring, April 2019

UXO Clearance at Moray East

17 UXO targets identified within windfarm site and cable route



- UXO of <1kg to >175 kg HE
- Donor charges of 1kg – 25kg
- Estimated SEL 223-236 dB re 1 μ Pa²s
- Modelled limit of PTS risk at 5km
- Mitigation involved use of ADD + series of small scare charges (50g to 200g)

Note:

ADD- Acoustic Deterrent Device

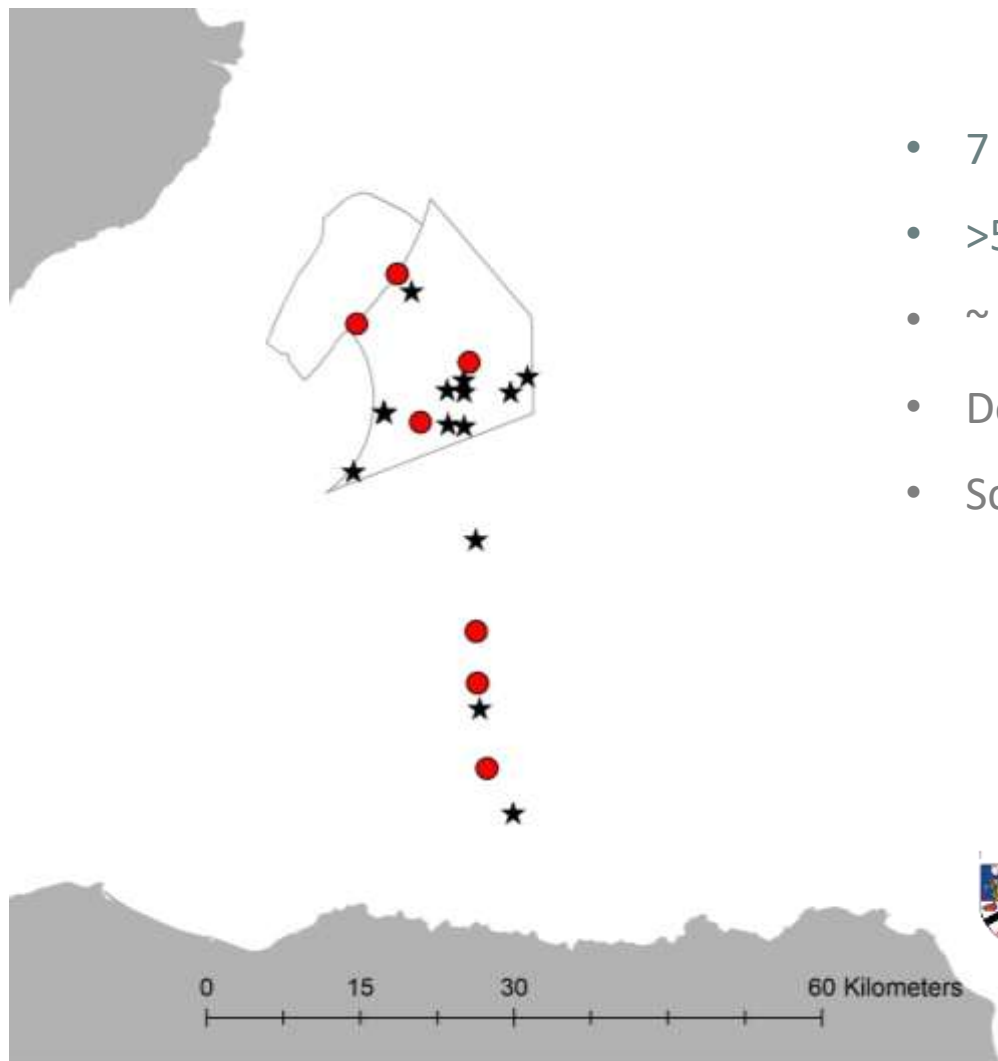
HE – High Explosive

SEL – Sound Exposure Level

PTS - Permanent Threshold Shift

Monitoring of noise from UXO clearance at Moray East

Integrated into early stages of the construction Marine Mammal Monitoring Programme



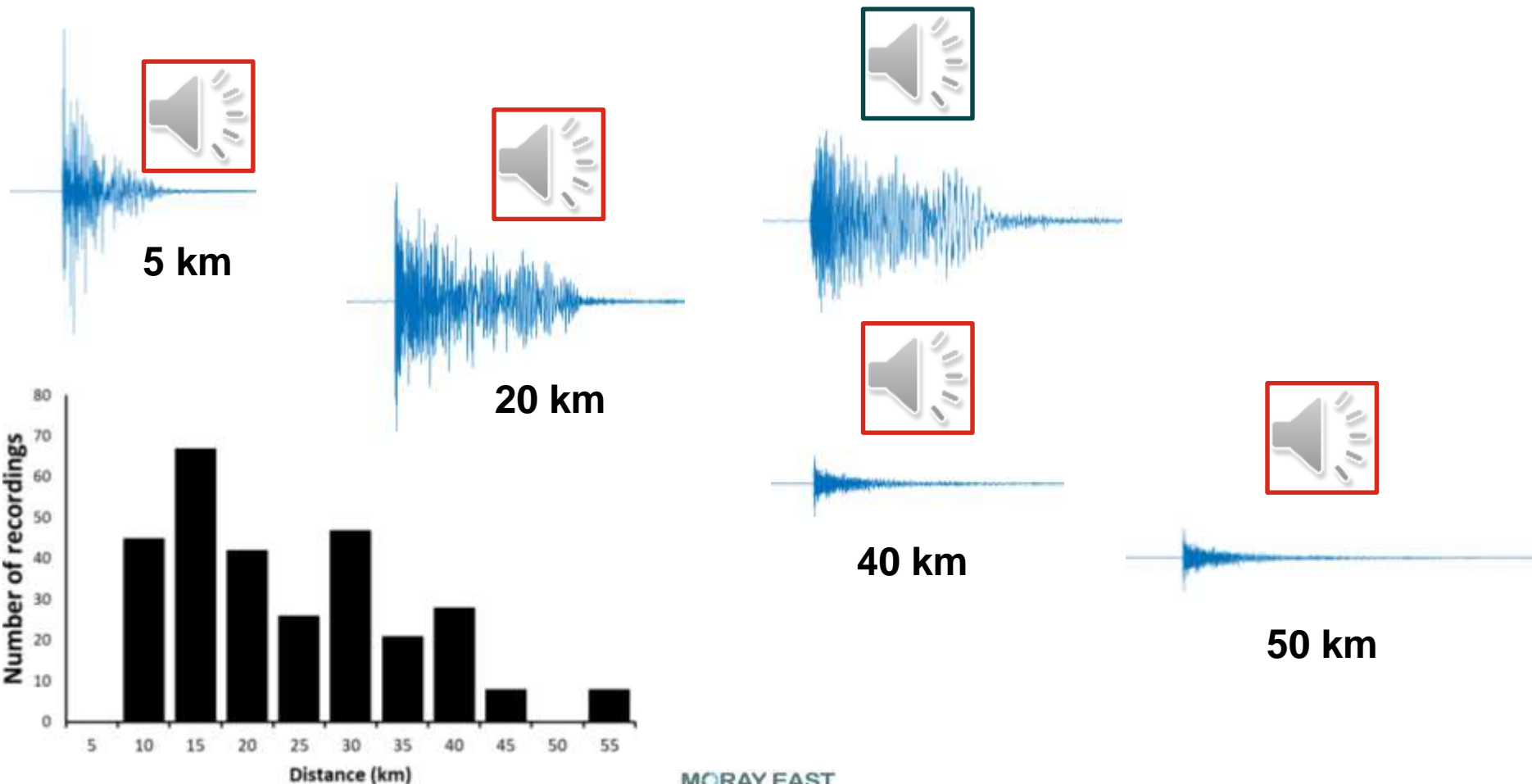
- 7 bottom mounted noise recorders
- >500 recordings at 1.8 - 54 km
- ~ 60% suitable for waveform analysis
- Donor charges at 9 – 54 km
- Scare charges at 5 – 54 km



Planned analyses

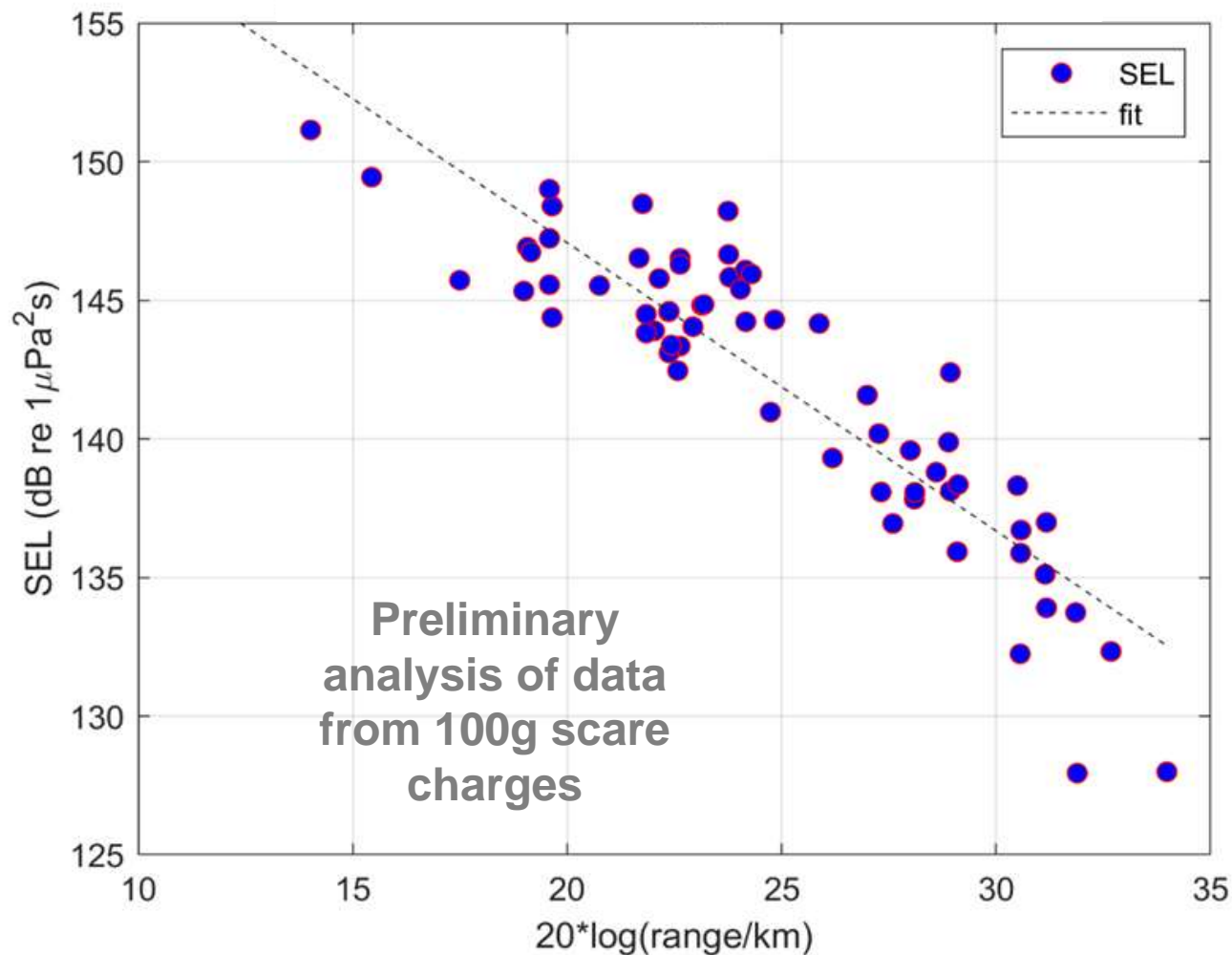
Investigating range-dependent changes in noise waveforms and risk to marine mammals

- Example recordings of **0.1kg** scare charges and **25 kg** donor



Planned analyses

Data being integrated into a BEIS funded project that is collating and analyzing data to underpin more realistic noise modelling and exposure assessments



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FOR ENVIRONMENTAL MANAGEMENT & SCIENCE



Department for
Business, Energy
& Industrial Strategy

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Thank you

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