BRS ON PORPOISES IN DANISH WATERS



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SEA MAMMALS AND SONAR SYMPOSIUM ST. ANDREWS

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REACTIONS OF PORPOISES TO SOUND



ASW-sonar 7-9 kHz

Expected threshold around 115 dB re. 1 μPa rms_{fast}



EXPECTED REACTION DISTANCES



Depending on source level, reactions are expected at distances of tens of km



ARE SUCH DISTANCES REALISTIC?



Dähne et al, (2013)

Yes, similar reaction distances seen for pile driving noise







% PORPOISE POSITIVE MINUTES PER DAY



Intermediate level of porpoise activity in training area





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PORPOISE ACTIVITY COMBINED FOR ALL STATIONS FIRST EXPOSURE



- Top: Mean clicks/h weights all clicks the same
- Bottom: % of stations with clicks hour by hour weights all stations the same



PORPOISE ACTIVITY COMBINED FOR ALL STATIONS SECOND AND THIRD EXPOSURES





PAIRED TEST EXERCISE VS. PREVIOUS DAY



- Strong drop in porpoise clicks
- Interpreted as exclusion from area
- Alt. explanation: change in acoustic behaviour





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CONCLUSIONS

- Porpoises expected to react at sound levels above 115 dB re. 1 μPa rms
- Correponds to ranges of tens of km from ship
- Porpoises responded at all stations within 20 km from training area, but not at reference stations beyond 50 km
- Recovery within days
- Received level of sound above 115 dB re. 1 μPa rms on all stations
- Survey along coastline did not find dead animals that could be linked to exercise
- Population impact unknown





Thank you for your attention

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