Poster #277

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Polychlorinated biphenyls (PCBs) are associated with reduced testes weights in harbour porpoises (*Phocoena phocoena*)

Background

- Harbour porpoises are ocean sentinels that accumulate high levels of PCBs
- High blubber concentrations are associated with population declines in marine mammal populations
- It is important to understand their impact on male reproductive health

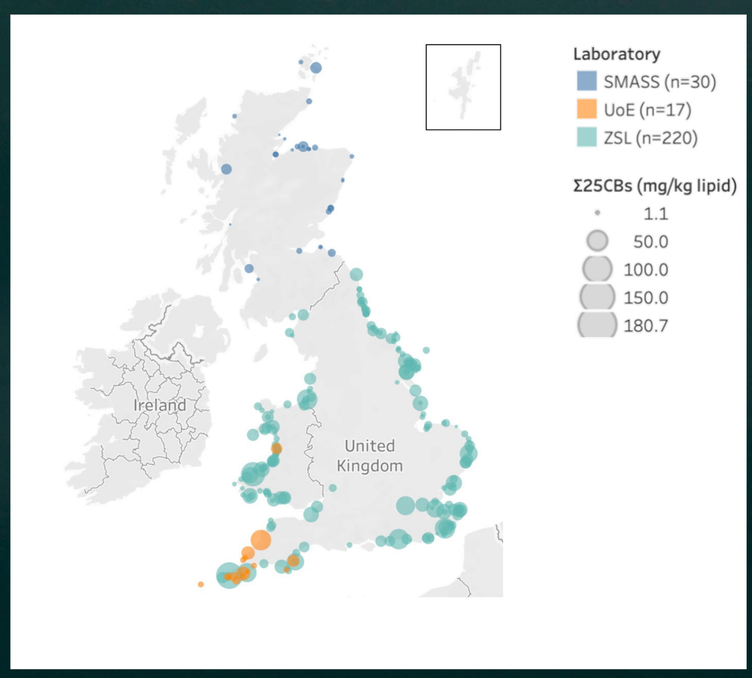

Fig 1: Geographic locations of the stranded porpoises. The dots are sized by the summed concentration of 25 PCB congeners.

Methods

- PCB blubber concentrations were measured in 99 adult and 168 juvenile UK-stranded harbour porpoises
- Linear mixed models were fitted to testes weights against PCB concentrations and other predictor covariates

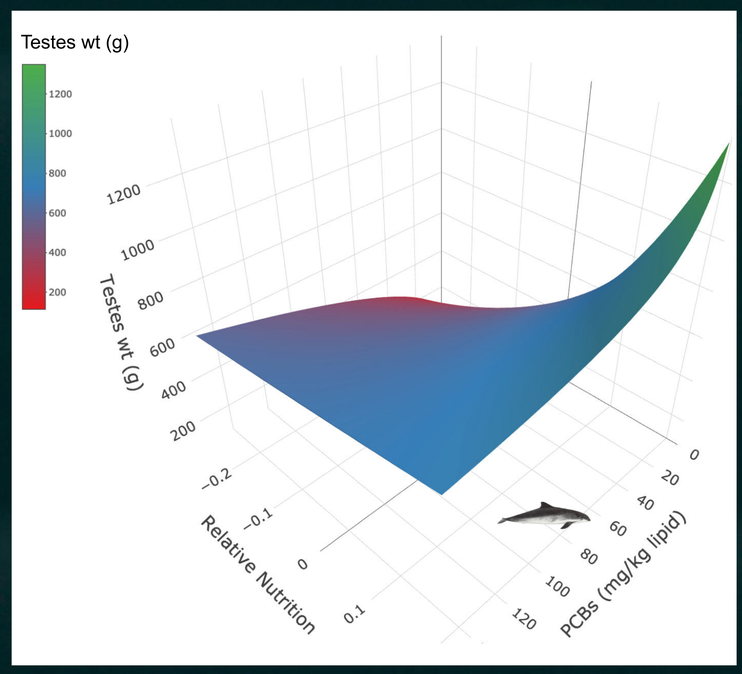

Fig 2: Surface plot of predicted testes weights against relative nutrition and PCB blubber concentrations.

Results

- Testes weights were negatively associated with PCB concentrations in adults with good body condition (Fig. 2)
- In adults with poor body condition, testes weights were not negatively associated with PCB concentrations, possibly due to testes weights being limited by nutritional stress
- There was no association between testes weight and PCB concentrations in juveniles

Conclusion

- More research is required to identify the mechanisms of reduced testes weights and understand if fertility is impacted
- Current risk assessments only account for impacts on female fertility, impacts on male fertility need to be factored in too

Williams, R.S., Curnick, D.J., Brownlow, A., Barber, J.L., Barnett, J., Davison, N.J., Deaville, R., ten Doeschate, M., Perkins, M., Jepson, P.D., Jobling, S., 2021. Polychlorinated biphenyls are associated with reduced testes weights in harbour porpoises (*Phocoena phocoena*). Environ. Int. 106303. https://doi.org/10.1016/j.envint.2020.106303

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