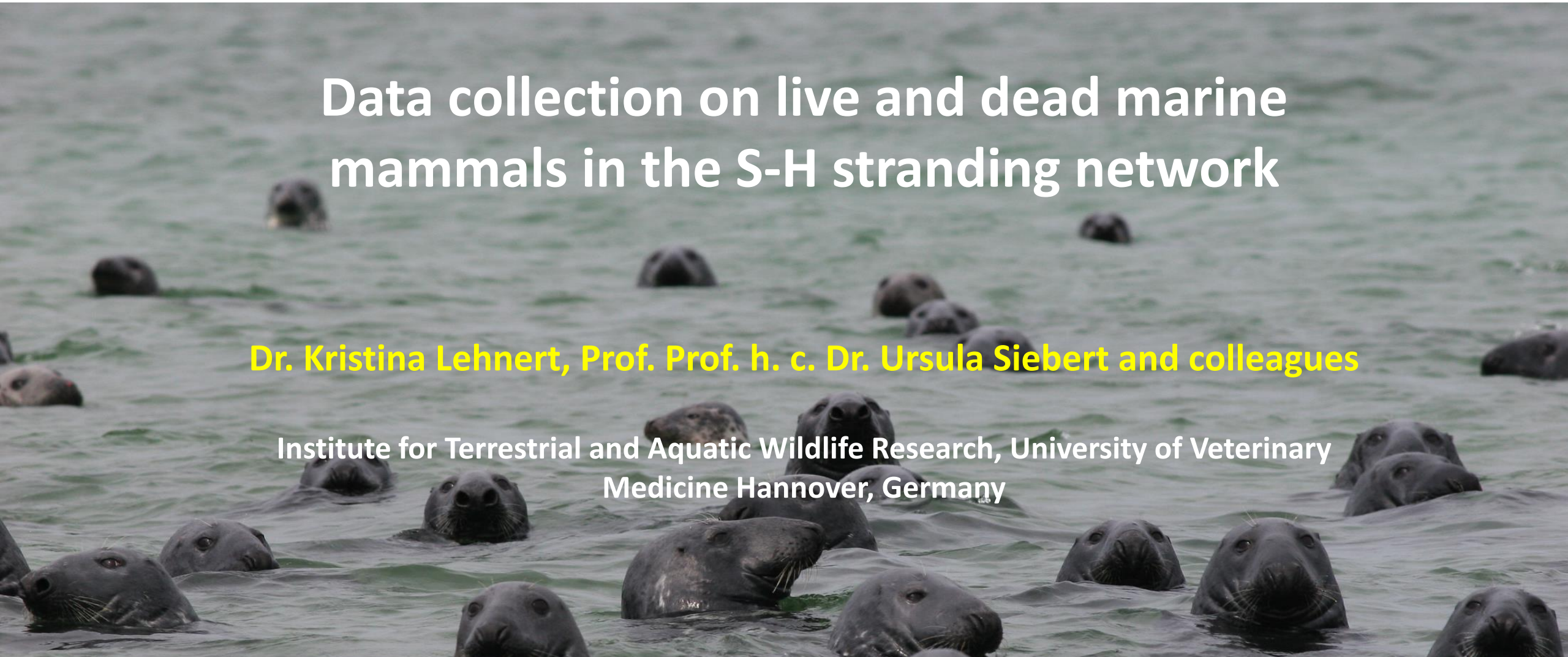
Stiftung Tierärztliche Hochschule Hannover
University of Veterinary Medicine Hannover, Foundation
Institute for Terrestrial and Aquatic Wildlife Research



Data collection on live and dead marine mammals in the S-H stranding network

Dr. Kristina Lehnert, Prof. Prof. h. c. Dr. Ursula Siebert and colleagues

Institute for Terrestrial and Aquatic Wildlife Research, University of Veterinary Medicine Hannover, Germany

Monitoring of marine mammals

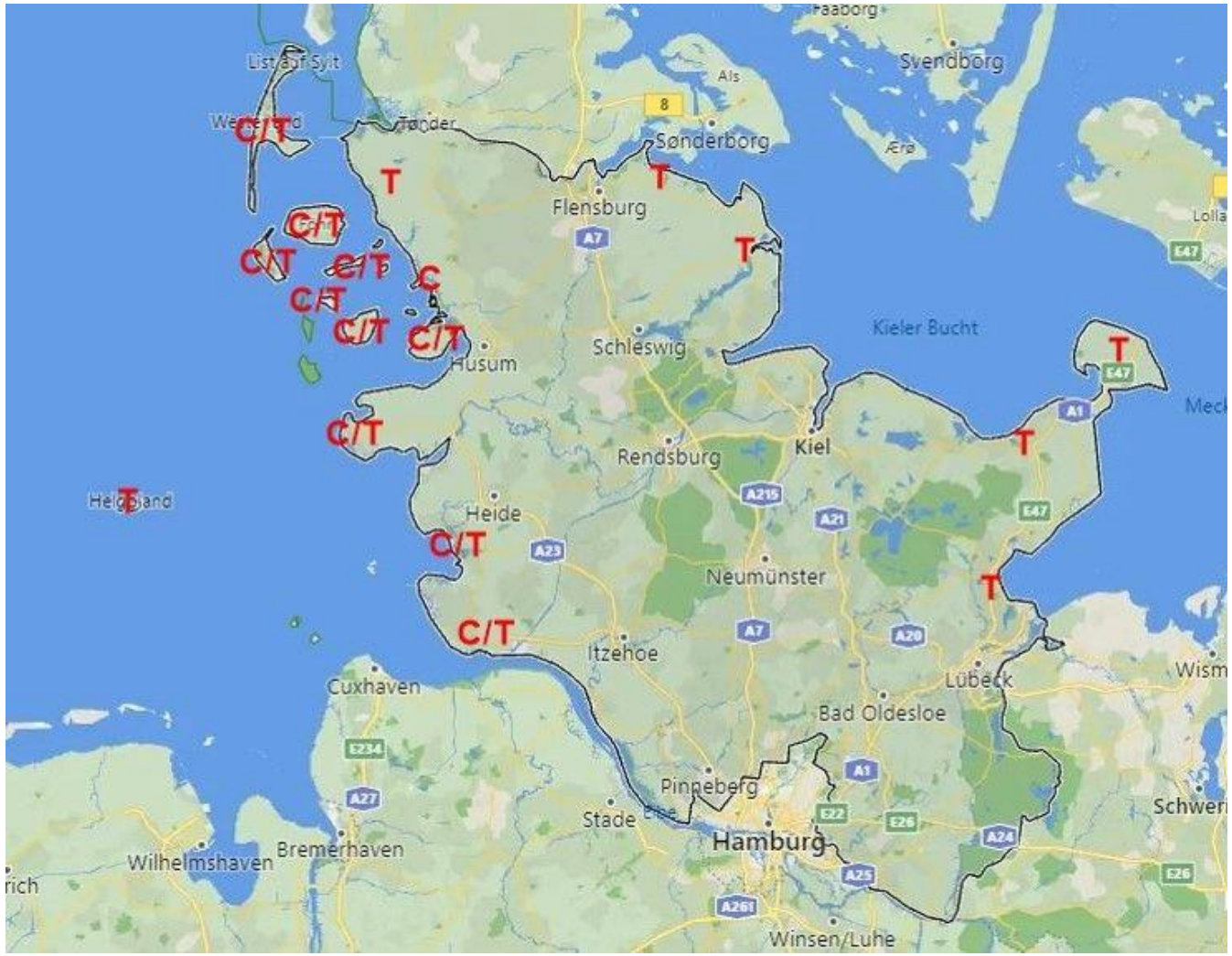
Post mortem investigations on live and dead-stranded animals

Medical exams on life captured and bycaught individuals

Examination of marine mammals in human care for rehabilitation

Stranding network Schleswig-Holstein, Germany

1,200 to 1,500 dead harbour and grey seals per year

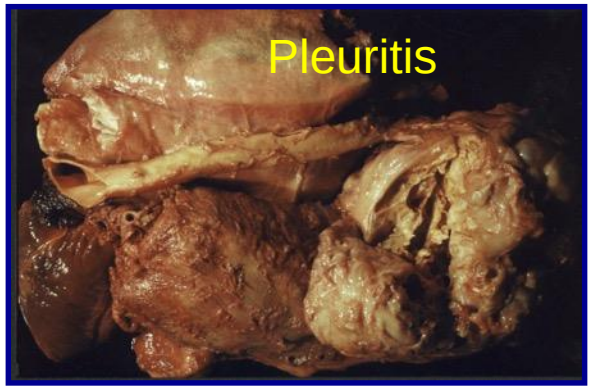


250-300 dead cetaceans per year

Investigations on dead marine mammals

By-caught porpoises

- Necropsy
- Histology
- Microbiology
- Virology
- Parasitology
- Age structure
- Reproduction biology
- Genetics
- Feeding ecology
- Anthropogenic effects



Metabarcoding digesta of aquatic top predators

Molecular tools to complement hard part analyses

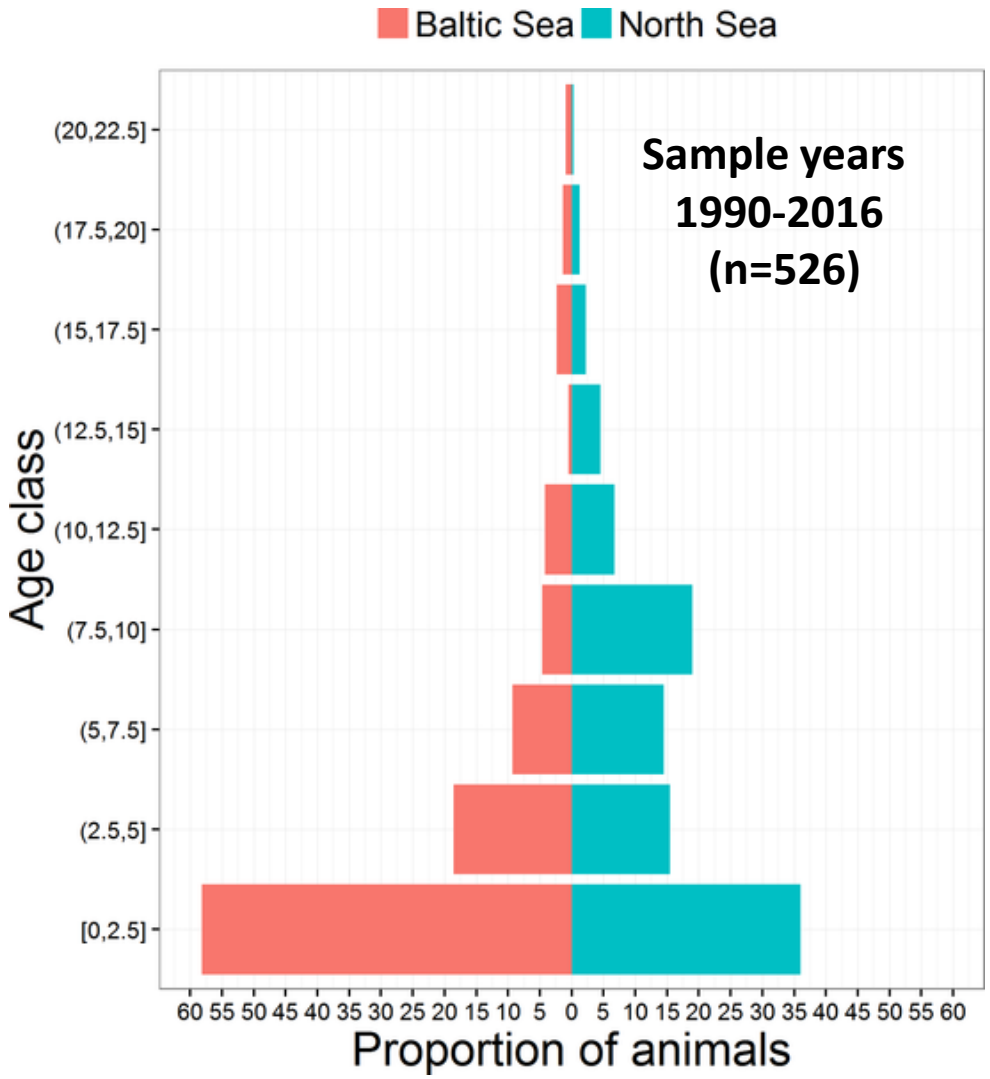
Talk on Tuesday 12.30: Heße et al.: Hidden gems? multi-method approach to study diet of harbour porpoises

Sample Collection | DNA Isolation | Primer Design | PCRs | **NGS & Bioinformatics**

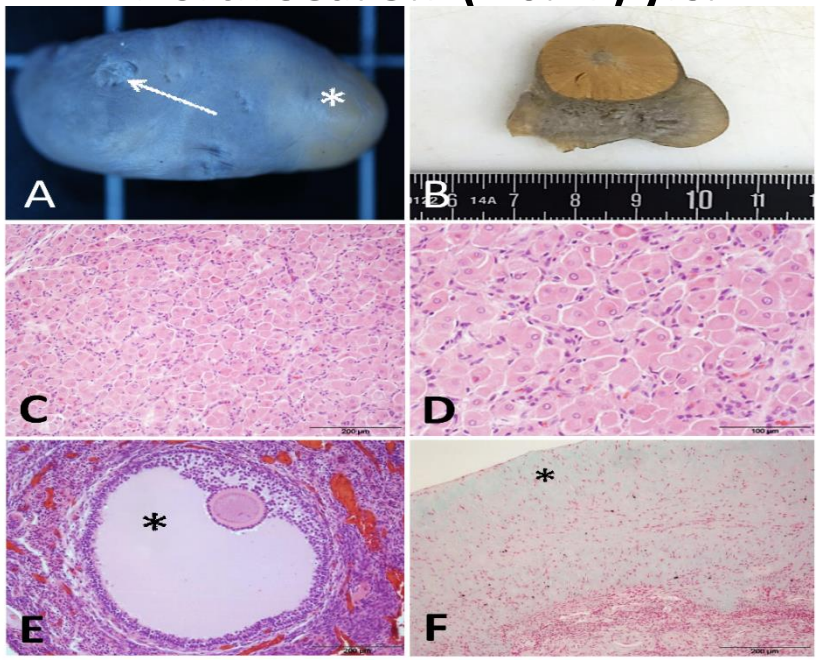
- ➢ **46 Unique OTUs identified to species level**
- ✓ **29 families**

- Thirty-three species in Harbour seals
- Twenty-six species in Grey seals
- Seventeen species in Otters

Population structure of female harbour porpoises from German waters



Average age at death of females from the
Baltic Sea: 3.67 (± 0.30) yrs.
North Sea: 5.7 (± 0.27) yrs.

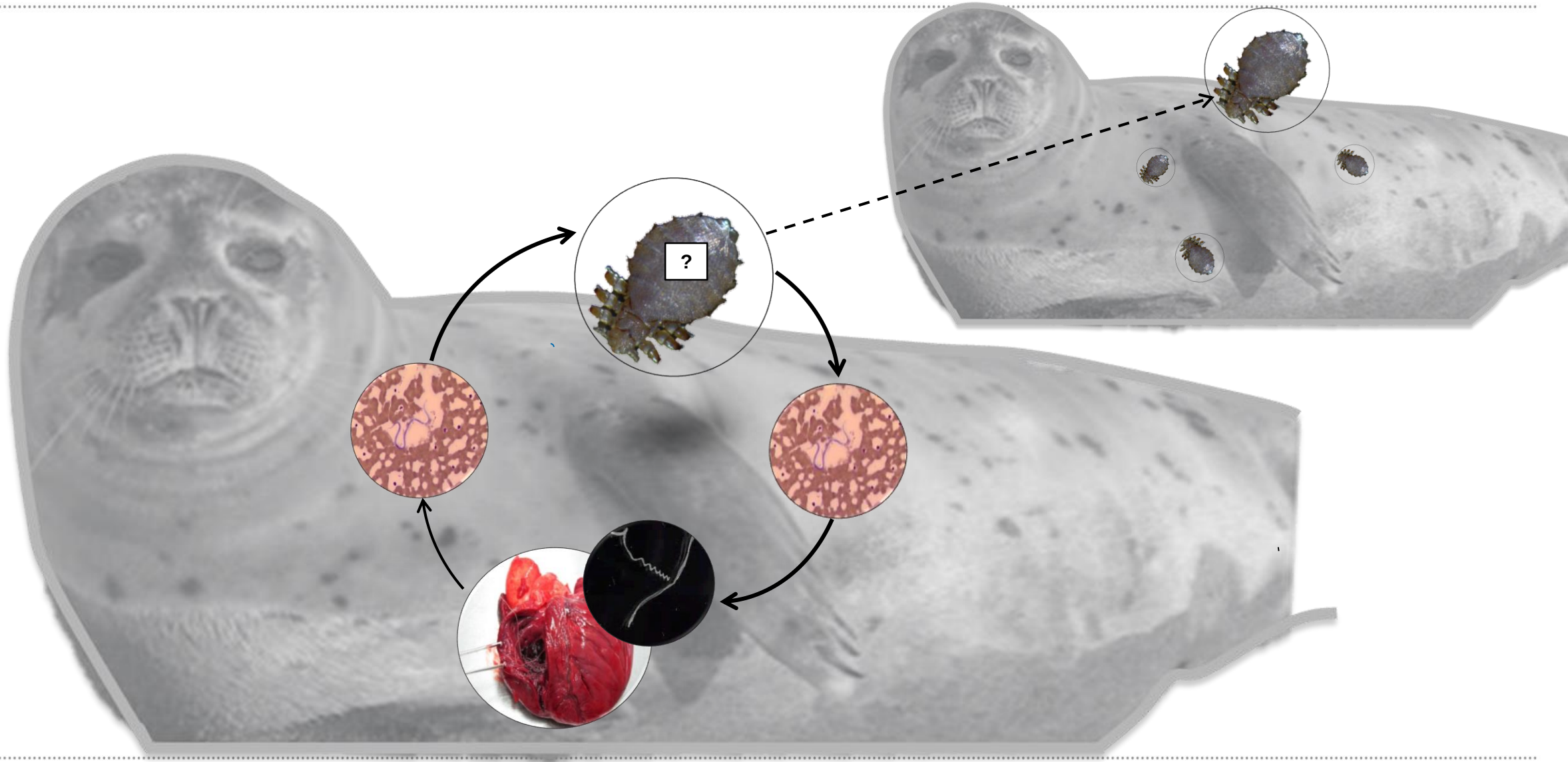


Age at sexual maturity: 2-5 years

POSTER 154: Schmidt et al.: Three decades of harbour porpoise reproduction on the German coast

Kesselring et al. 2017 PLoS ONE

Parasitology



Bacteriology

Potentially pathogenic bacteria:

Brucella pinnipedialis/ceti

Clostridium perfringens

Erysipelothrix rhusiopathiae

Escherichia coli

Salmonella spp.

Staphylococcus aureus

α–/β-haemolytic Streptococci

Splendore-Hoeppli-material

So far 182 different bacterial and fungal species were isolated.

Associated with: bronchopneumonia, abscessation, septicemia

Gross et al. 2022 Antibiotics

Virology

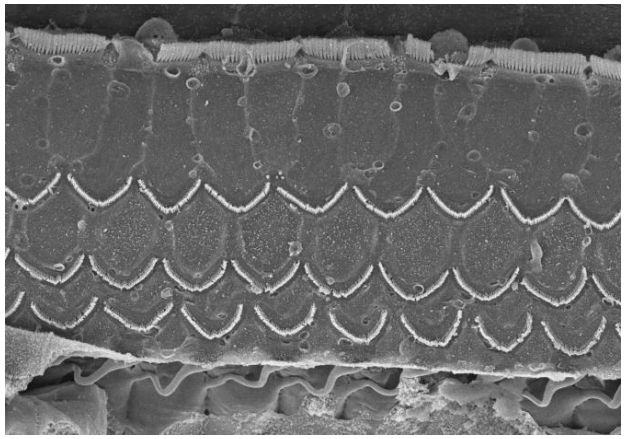
Influenza H5N8 in 2021

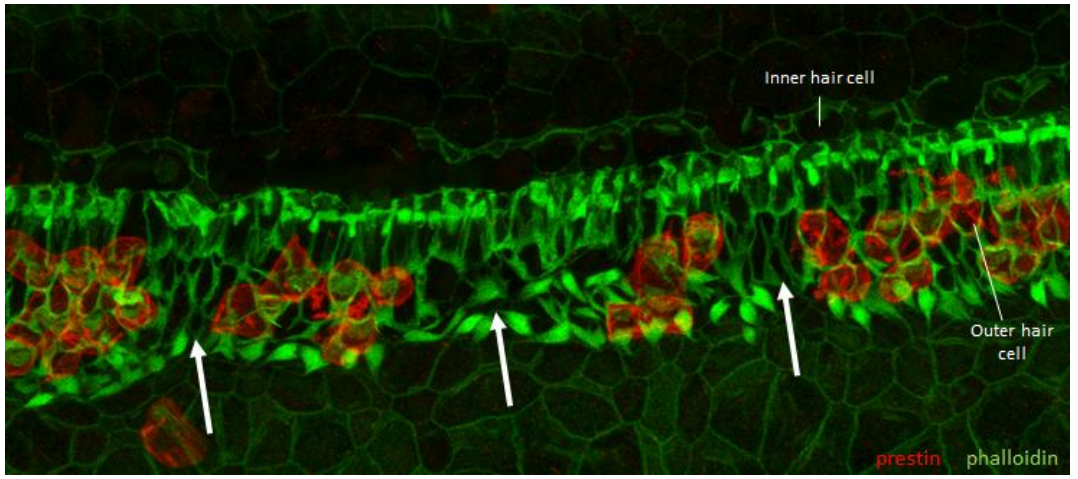
- Influenza regularily found in wild birds
- Occurrence of H5N8 in three harbour seals from SH in 2021
- Virus found in the brain

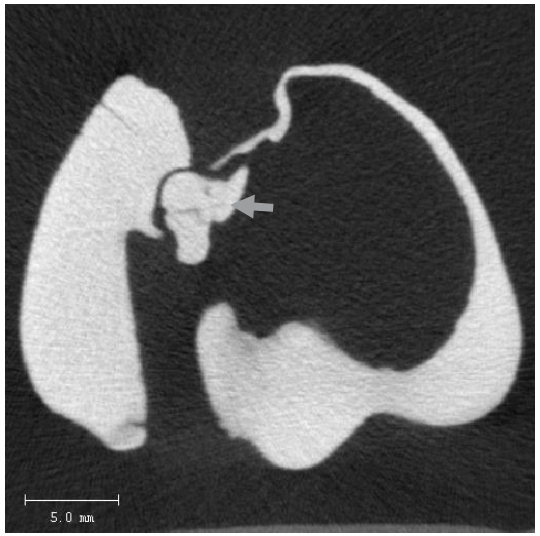
Postel et al. 2022 Emerging microbes & infections

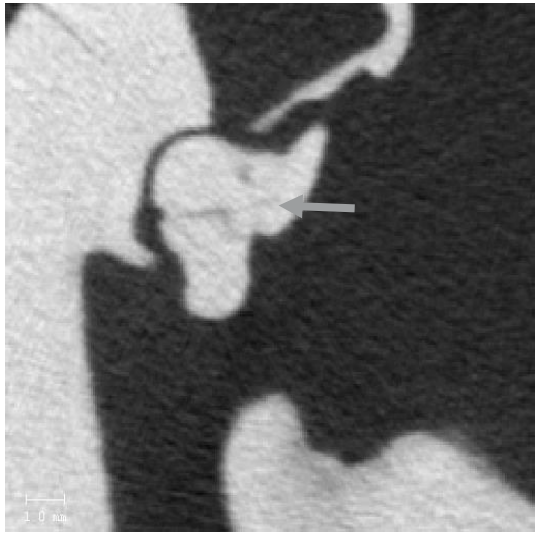
Noise

Blast injury in harbour porpoises from the Baltic Sea



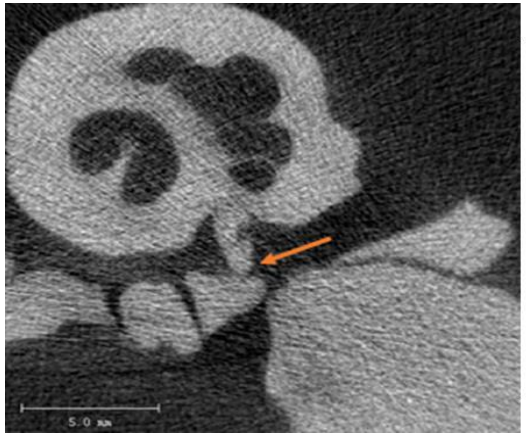






Microfracture of the malleus

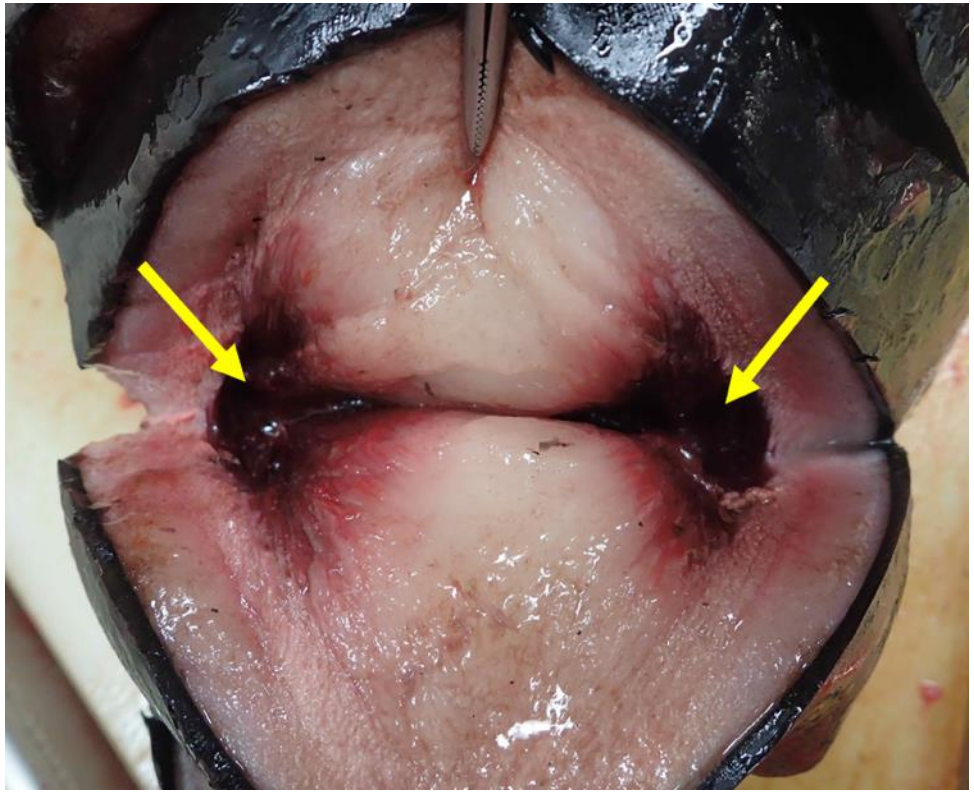
Typical: fracture and dislocation of middle ear bones



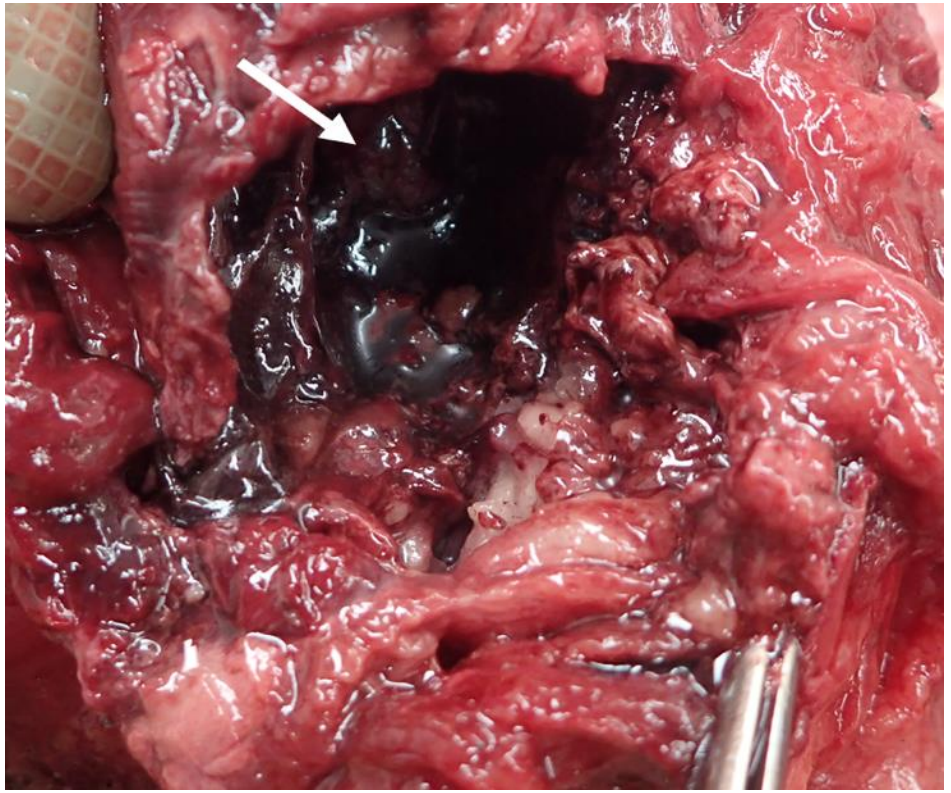
Dislocation of middle ear bones

Blast injury / acoustic trauma in harbour porpoises from the Baltic Sea

Bleedings/hemorrhages in the acoustic organs including melon, acoustic fat of the lower jaw and peribullar acoustic fat



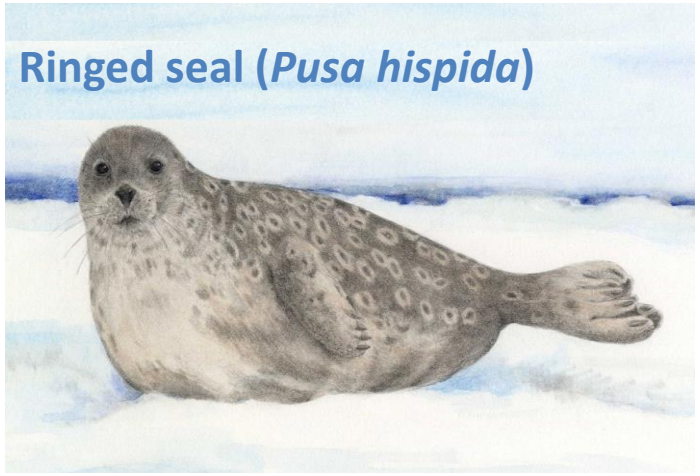
Bleedings/hemorrhages in the melon



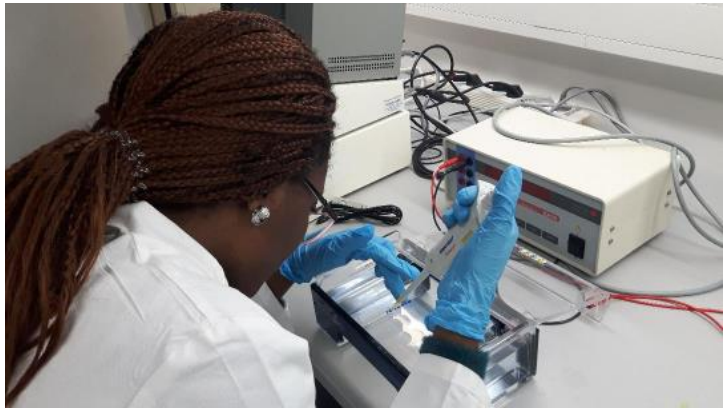
Bleedings/hemorrhages in the peribullar acoustic fat

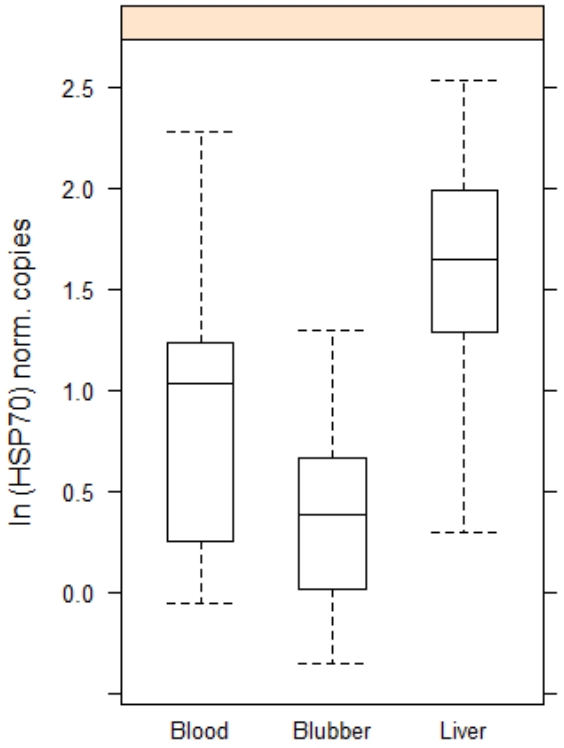
Siebert et al. 2022 Environment International

Gene transcription effect biomarkers - immunology



- 16 ringed seals 2018-2019
- Blood collected in RNAlater within 24hrs pm
- Tissue–specific gene transcript profiles



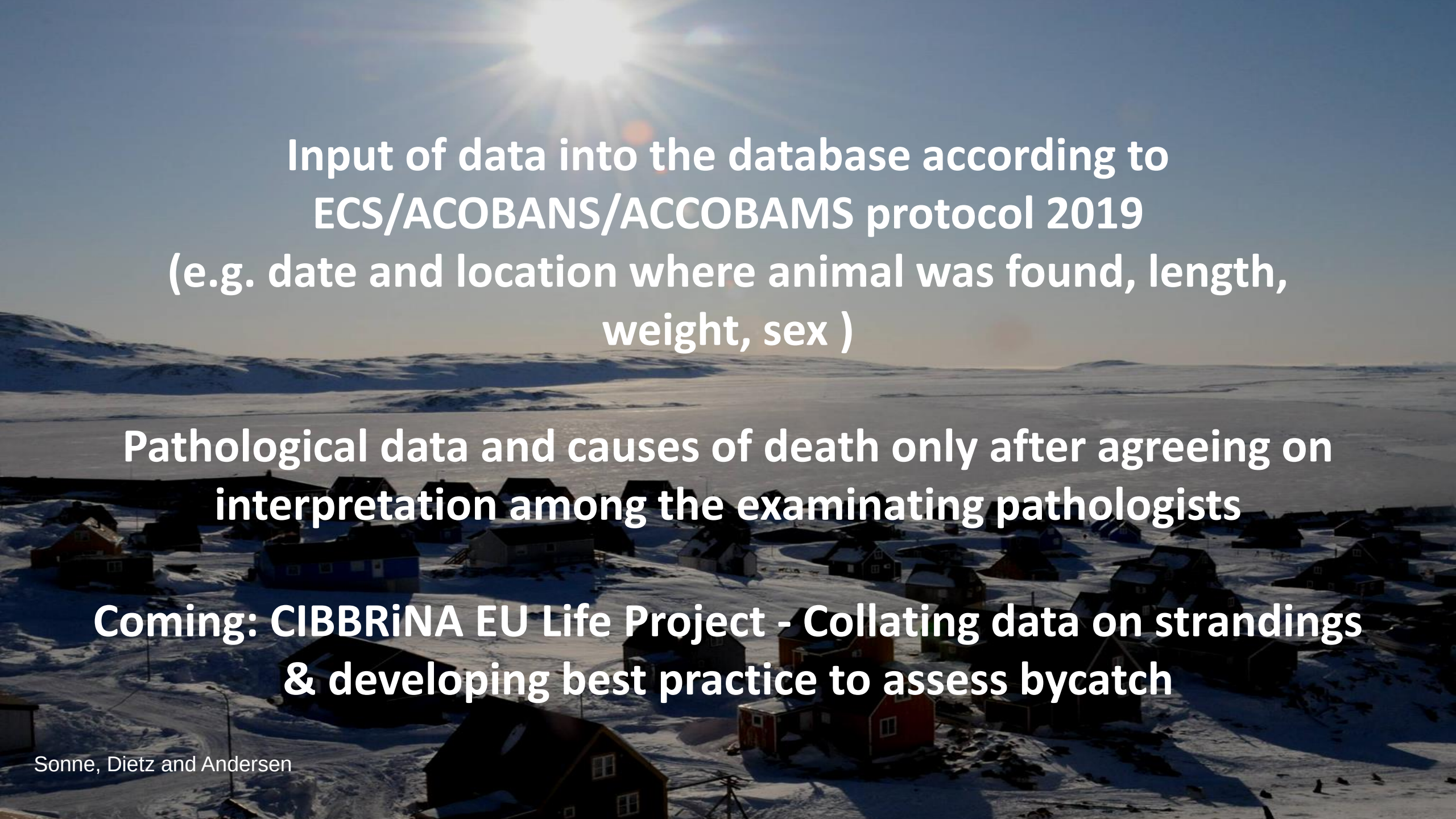


BONUS BaltHealth

➢ HSP70 transcripts highest in liver & inversely correlated to PCB concentrations

➢ improve study design by selecting optimal tissue sampling for targeted biomarker approach

Boyi et al. 2021 Aquatic Toxicology



Input of data into the database according to ECS/ACOBANS/ACCOBAMS protocol 2019 (e.g. date and location where animal was found, length, weight, sex)

Pathological data and causes of death only after agreeing on interpretation among the examinating pathologists

Coming: CIBBRiNA EU Life Project - Collating data on strandings & developing best practice to assess bycatch

Sonne, Dietz and Andersen