INSIGHTS FROM NECROPSY EXAMINATIONS OF HARBOUR PORPOISES IN SWEDEN

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BACKGROUND

• Harbour porpoises serve as excellent sentinels of the marine environment (coastal habitat, top predators, relatively short life span compared with other marine mammals to follow trends)

• Collaboration between SVA and NRM since 2008 to examine health, biology and cause of death of harbour porpoises in Sweden

• All porpoises are examined by a team of at least one biologist and one veterinary pathologist

• Collaboration started slowly with only a handful of animals but has recently gained momentum

• Swedish Agency of Marine and Water Management (SwAM) has provided funding for examination of 15 porpoises/year and to compile our necropsy findings

• We compiled results from 109 porpoises (98 stranded, 11 bycaught) that died from 2006-2019 and provide preliminary results with a focus on causes of death here
LOCATIONS OF HARBOUR PORPOISES REPORTED DEAD AND THOSE EXAMINED IN SWEDEN 2006-2019

- NRM collects reports of dead harbour porpoises in Sweden
- Animals deemed suitable for examination, including all porpoises from the Baltic coast, are brought in for necropsy examination at SVA
LOCATION, AGE CLASS AND SEX OF ANIMALS EXAMINED
LIFE HISTORY AND OTHER ANALYSES

- Samples and data collected for further analysis of morphometrics, reproduction, diet, genetics and nutritional condition
- Aging all porpoises is a priority
- Samples saved in SVA’s biobank and NRM’s environmental specimen bank for future studies
An additional 11 porpoises were submitted directly by fishermen as bycatch.
• Bycatch: clear line marks
• Probable: no line marks, good nutritional condition, froth in airways, other causes of death ruled out
• 25% of stranded sample (comparable with other geographical regions)
• Possible bycatch not included (likely underestimated bycatch)
Bacterial and parasitic pneumonia most common, one fungal pneumonia

Although not the cause of death, first documentation of *Brucella* sp. infection in Sweden:
- infection in the testis of a mature male, reproductive implications?

No evidence of morbillivirus

Non-infectious disease: primarily peri-parturient

Photo: SVA
Two cases with wounds consistent with predation
  - Characteristic wounds, young porpoise, good nutritional condition

Two additional cases of possible predation

eDNA from wounds to try and identify predator species and a retrospective study using photographs is planned

Photo: SVA
ANIMALS EXAMINED FROM SOUTHERN SWEDEN

- Four of the six porpoises examined from southern Sweden stranded in August and September 2019
- Although they were severely decomposed, the eastern-most calf had lesions consistent with predation
SUMMARY

• Indication of causes death in Swedish waters

• 1/4 of stranded animals were diagnosed as bycatch/probable bycatch

• Disease is also a common cause of death (20%)
  - How does mortality from infections relate to contaminant levels? Other stressors?
  - Changing patterns of disease often reflects environmental change

• *Brucella* infection may have implications for reproduction

• Predation requires further investigation

• Examination of both stranded and bycaught animals help us to better understand porpoise health and threats they face and examination of more animals are needed for a robust data set to monitor health of porpoises in our waters
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