Marine strandings monitoring

27th Meeting of the Advisory Committee
28-30 September 2022

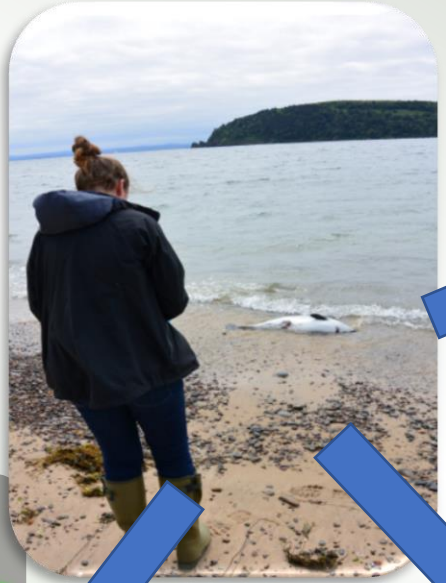
Reasons for marine strandings monitoring

- Monitoring required to meet statutory obligations- and identified by parties as important tasks to pursue
- Stranding numbers provide information on **population status, abundance, distribution**
- Identify and quantify the role of **disease**, **trauma** and **environmental factors** affecting these populations.

Assessment of anthropogenic impacts

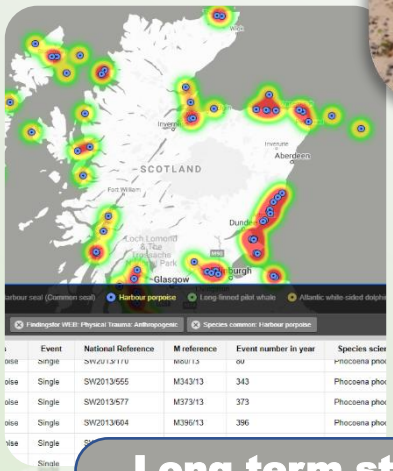
- Impact of toxins/chemical pollutants
- Impact of underwater noise
- Bycatch
- Climate change?

- **Sensors** for the health of the ecological communities and **sentinels** of population and ecosystem health.
- Provide data and samples for research largely unobtainable by other means



Morphometrics

Necropsy



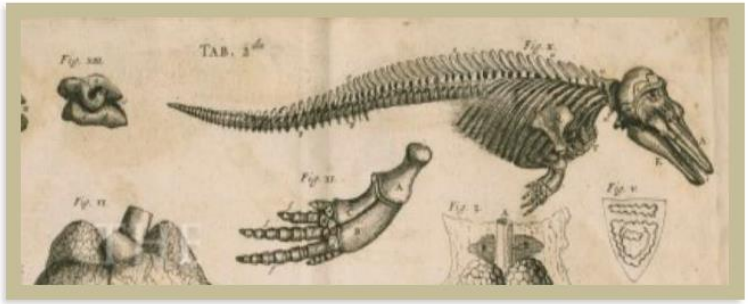
Long term strandings datasets

Samples

Cause of death

Best practice on cetacean post mortem investigation and tissue sampling

Joint ACCOBAMS and ASCOBANS document



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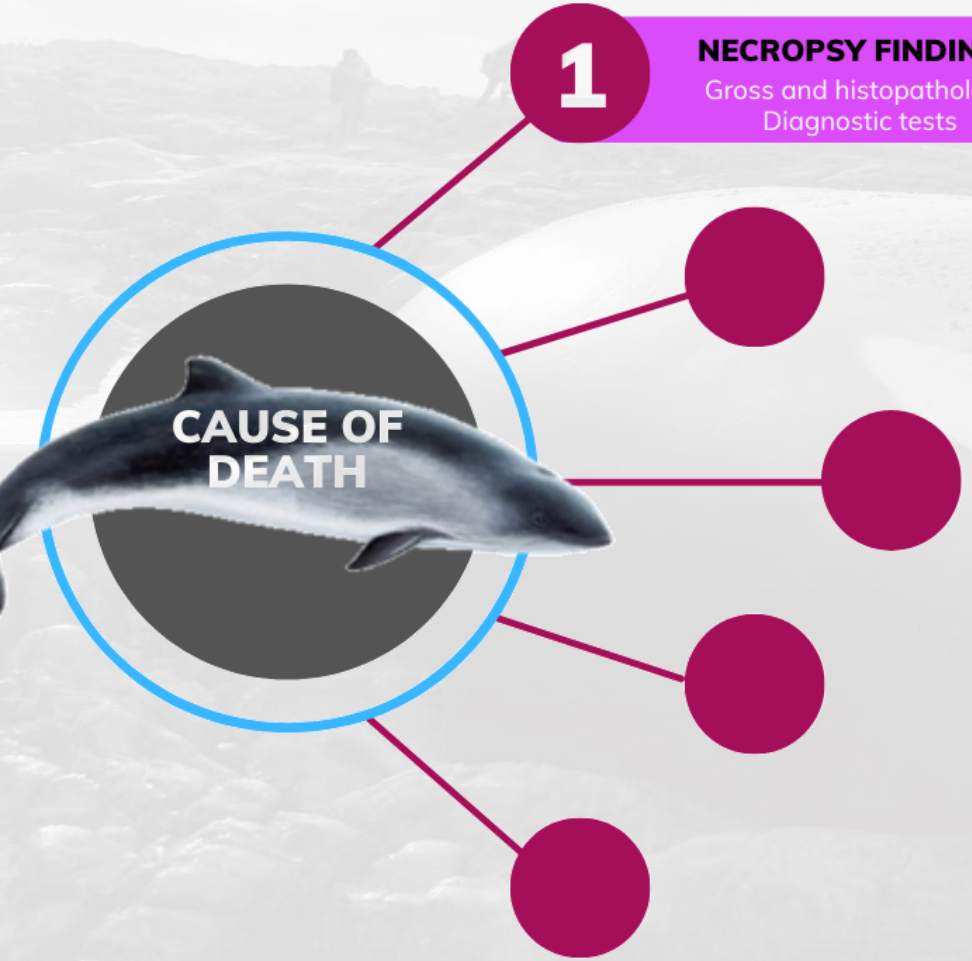
October 2019



Cause of death:

Necropsy examination +/- ancillary diagnostic tests undertaken to identify most plausible cause of mortality.

INDIVIDUAL HEALTH

Stressors and resilience

Disturbance/noise

Environmental factors

1. **NECROPSY FINDINGS**
   Gross and histopathology
   Diagnostic tests
2. **DISEASE ECOLOGY**
   Pathogen presence/prevalence.
3. **LIFE HISTORY**
   Age and sexual maturity
4. **FEEDING ECOLOGY**
   Diet, stomach content , stable isotope and fatty acid analysis
5. **CONTAMINANT BURDEN**
   POP, metals, algal toxins

Ancillary tests:

Support diagnosis of proximal cause of death

Increase information about individual animal health/condition

Most are not undertaken routinely-cost and logistical constraints

In-depth analysis on a subset of cases is undertaken by several networks

Inform assessment of cumulative stressors

Cause of death

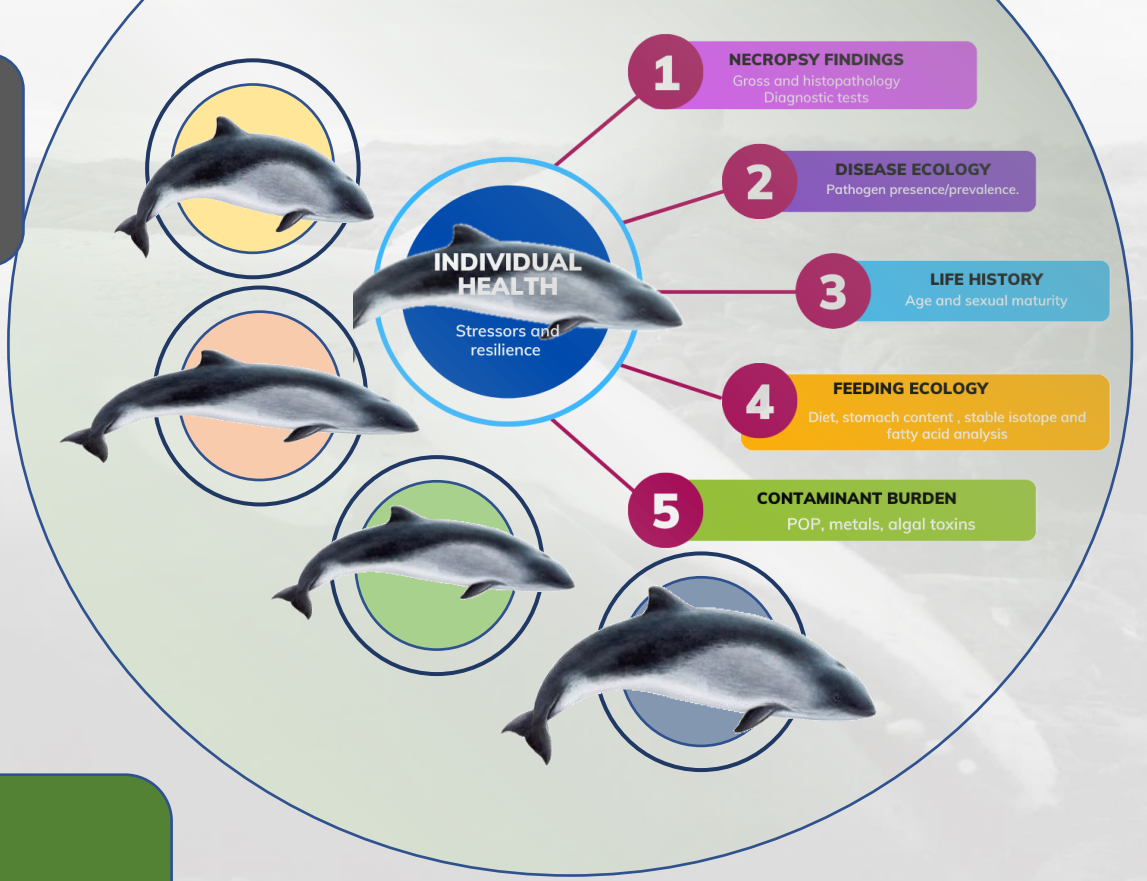
- Anthropogenic
  (eg bycatch, entanglement)
- Other

Health metrics

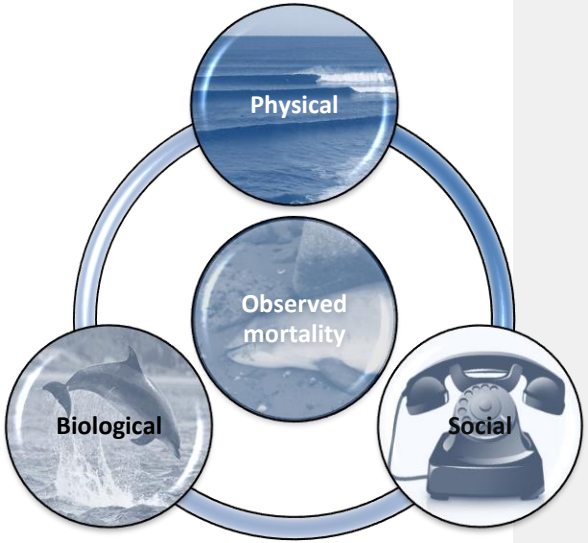
- Identifies potential stressors which may be impacting health…and those which are not
- Help disentangle cause and effect relationships

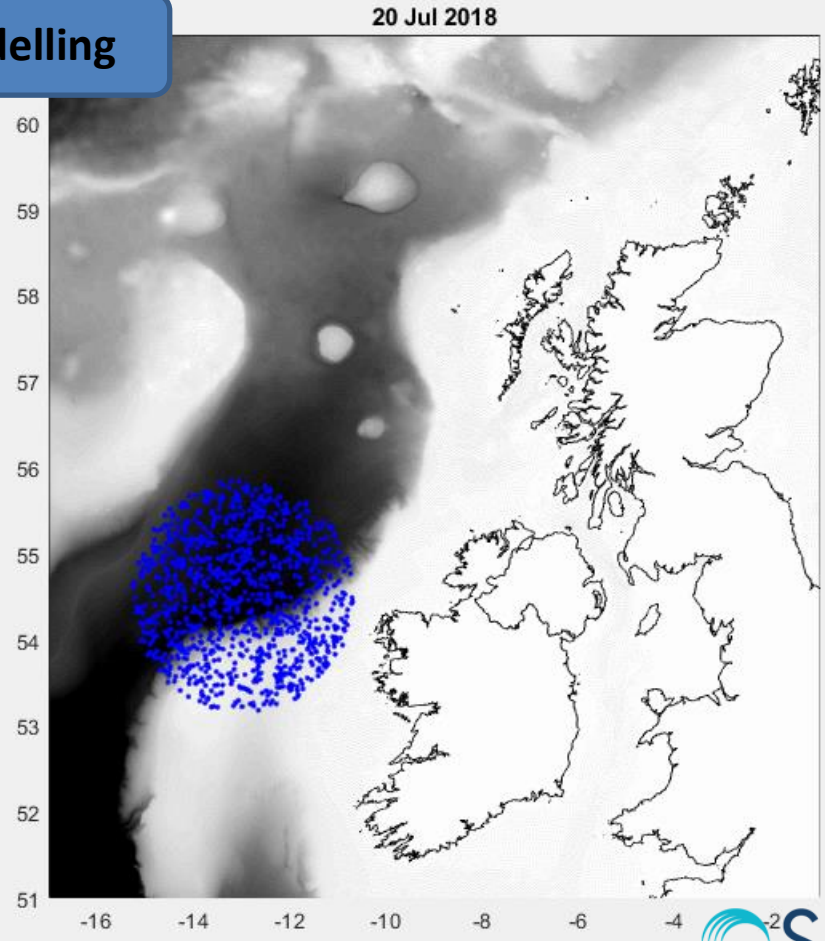
Population /ecosystem health

- Ongoing work to integrate information from multiple data sources
- Trends over time and space- use as indicators



Drift modelling





Carcase drift simulations constructed to hypothetical 'sources' of carcases:

Strandings data

Current data: Currents are derived from the 7 km resolution AMM7 model (UK Met Office)

Wind data: global gridded product from satellite scatterometry

SAMS

Online strandings data repository?

- Streamline data availability among range-state strandings networks
- Improve spatial scale and sample size for management decisions/indicators (MSFD)
- Streamline the reporting of strandings and bycatch information to multiple organizations (ICES, ASCOBANS, OSPAR, HELCOM, IWC,)

Proposed next steps

1. An initial online survey to scope appetite amongst strandings networks

2. A more detailed online survey seeking to understand drivers for the creation of an online database of marine strandings. Review of existing or planned databases containing marine strandings data.

3. A technical workshop to:

a. Identify stakeholder requirements /specifications/ concerns for any database
b. Consider issues of data ownership, access and the type and detail of data the database could collate
c. Identify technical considerations and operation maintenance
d. Formulation of a design brief, including potential outline costs and timescales for the project