# European stranding networks as a tool for monitoring marine mammal populations (Part I): towards optimising the functioning of networks

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# 1. Background and Objectives

The study of **stranded** animals is a valuable aid **to monitoring** marine mammals globally, incl. threats such as **bycatch**

However, the **utility** of strandings data depends on their **quality** and **representativeness**, which is affected by various **biological, physical, social and economic factors**

**What are the limitations in the data collected and how can we facilitate correcting for or even eliminating them**

(1) Assess the role that stranding networks currently play in monitoring marine mammal populations in Europe

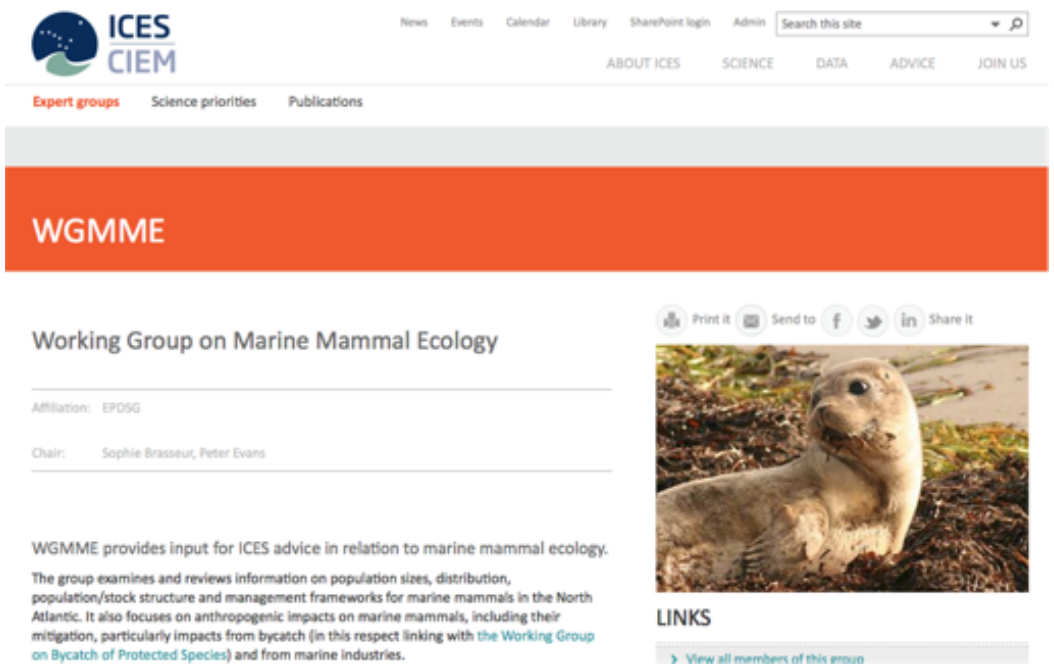
(2) Identify what improvements can be made to help the networks achieve their potential as a monitoring tool, especially in relation to bycatch mortality but also to determine the conservation status of marine mammal populations and the impacts of other threats

# 2. Material and methods

**Expert consultation**, based on a **questionnaire** was initiated in 2021 under the auspices of the **ICES Working Group on Marine Mammal Ecology (WGMME)**

Directed at countries with Northeast Atlantic coastlines and adjacent coasts (incl. networks which operate along the Mediterranean coasts of Spain and France, and in the Spanish and Portuguese Macaronesian islands)

Questionnaire first explored the **organisation, activities and capacities of the networks**, before focusing on **bycatch-specific information**



# 2. Material and methods

**Six sections, 40 questions**

1) Organisation of the networks (including the type of organisation, staffing, funding, limitations);

2) Procedures involved in attending strandings of live and dead animals (e.g. reporting system, decision-making process, search effort and changes over time);

3) General information about stranded marine mammals (e.g. species composition, number of strandings per year, numbers of live and dead animals);

4) Types of data and samples collected (e.g. teeth for age determination, photographic documentation, gonads for maturity state determination);

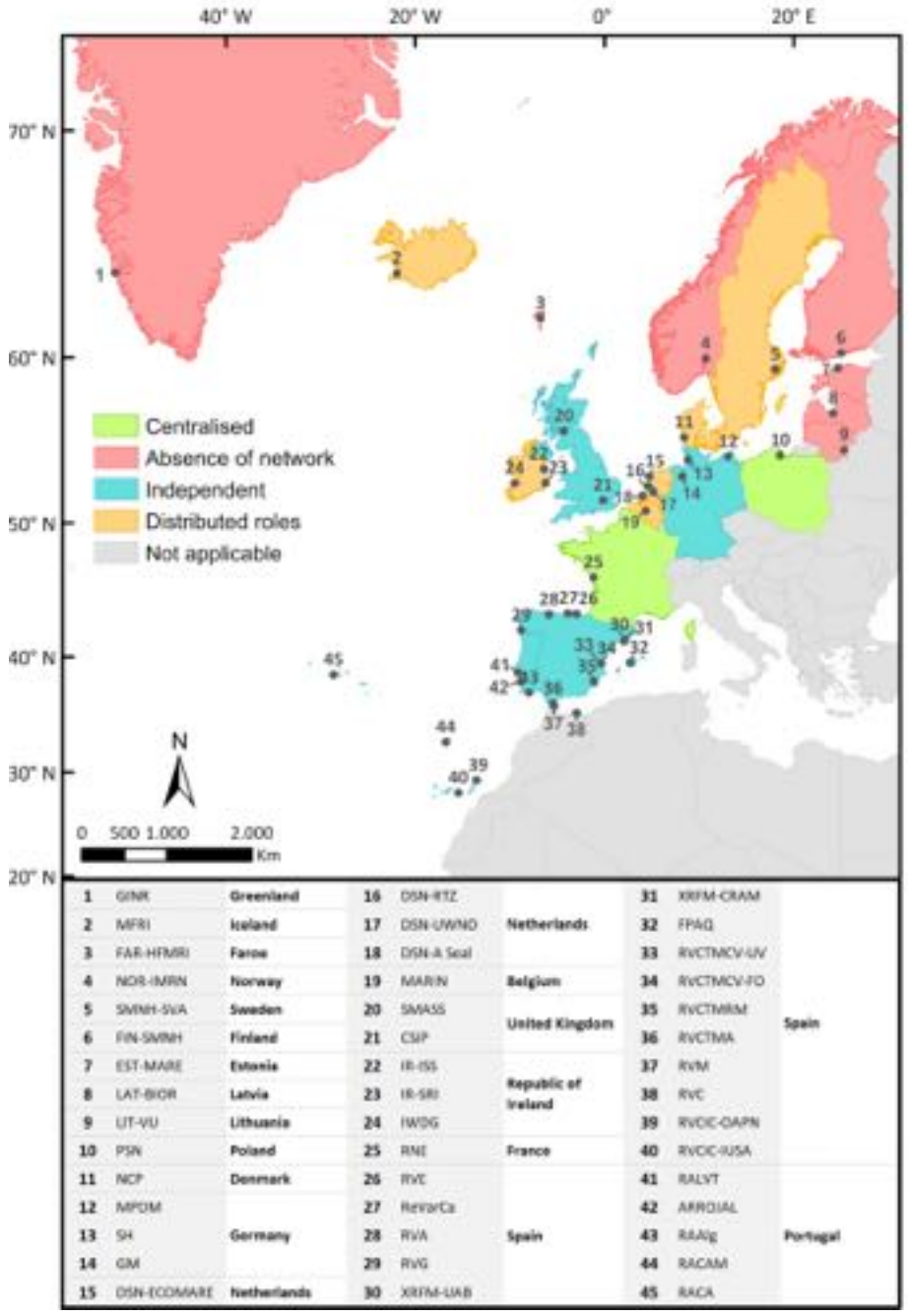
5) Nature and frequency of necropsies (e.g. proportion of animals necropsied, protocols followed, determination of causes of death);

6) Incidence of bycatch mortality (e.g. frequency, trends, and information collected from collaboration with fishers)

# 3. Results

- 45 organisations from 19 countries
- 12 countries with at least one active stranding network
- Majority created in the 1990s
- Effort over time mainly stable
- Biodiversity data representative of the large-scale species distribution patterns of marine mammals in Europe
- Info on trends and patterns obtained

- Geographical variations in terms of:
  - Organisation of networks
  - Type of funding (public fund, voluntary work and donations)
  - Availability of data
  - Type of constraints to carry activities
  - Numbers of strandings and in numbers of necrospies carried out
  - Type of data and samples collected and types of analysis performed

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|---|---|---|---|---|---|---|---|---|
| 1 | GINR | Greenland | 16 | DSN-RTZ | Netherlands | 31 | XRFM-CRAM | Spain |
| 2 | MFRI | Iceland | 17 | DSN-UWNO | | 32 | FPAQ | |
| 3 | FAR-HFMRI | Faroe | 18 | DSN-A Seal | | 33 | RVCTMCV-UV | |
| 4 | NOR-IMRN | Norway | 19 | MARIN | Belgium | 34 | RVCTMCV-FO | |
| 5 | SMNH-SVA | Sweden | 20 | SMASS | United Kingdom | 35 | RVCTMRM | |
| 6 | FIN-SMNH | Finland | 21 | CSIP | | 36 | RVCTMA | |
| 7 | EST-MARE | Estonia | 22 | IR-ISS | Republic of Ireland | 37 | RVM | |
| 8 | LAT-BIOR | Latvia | 23 | IR-SRI | | 38 | RVC | |
| 9 | LIT-VU | Lithuania | 24 | IWDG | | 39 | RVCIC-OAPN | |
| 10 | PSN | Poland | 25 | RNE | France | 40 | RVCIC-IUSA | |
| 11 | NCP | Denmark | 26 | RVE | Spain | 41 | RALVT | Portugal |
| 12 | MPDM | Germany | 27 | ReVarCa | | 42 | ARROIAL | |
| 13 | SH | | 28 | RVA | | 43 | RAAlg | |
| 14 | GM | | 29 | RVG | | 44 | RACAM | |
| 15 | DSN-ECOMARE | Netherlands | 30 | XRFM-UAB | | 45 | RACA | |

# 3. Results

## Common dolphins

- 26 organisations reported strandings of common dolphins

- Patterns and trends
  - Increase in strandings over time (France and Ireland)
  - Increase in strandings during the summer months (countries around the Bay of Biscay and Iberian coasts)
  - Shifts in distribution of strandings (UK - could reflect responses to climate change; see Wiliamson et al., 2021)
  - MSE (Galicia, Ireland)

- Interactions with fisheries
  - Higher prevalence of bycatch during winter months (SW England, Ireland, French Bay of Biscay, western Galicia)
  - Increase in bycatch over time (France, Galicia)
  - Gear type identified (bottom gillnets Galicia, trawlers UK, entanglement oyster farms France)
  - Tagging of carcasses (France, Spain and UK)

# 4. Discussion

## Recommendations

1. Increase spatial coverage
2. Ensure data credibility and quality
3. Strengthen seal stranding monitoring
4. Coordinate at the national level
5. Secure stable and sufficient funding
6. Continue standardizing and harmonizing data and sample collection
7. Increase emphasis on necropsies and analysis of data and samples
8. Recognize the value of strandings in advanced states of decomposition
9. Promote the availability and dissemination of results
10. Streamline data reporting

# 5. Conclusions

Stranding networks are an **important tool to monitor** marine mammals in Europe, providing extensive **spatio-temporal coverage** and generating information that has contributed to shaping our knowledge of marine mammal populations for several decades

Performing with the resources currently at their disposal

**Further effort is required to optimize their functioning and monitoring role**

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# THANK YOU FOR YOUR ATTENTION

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