

MarineMammals.be: improving marine mammal stranding, by catch and observation data collection

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Introduction

The marine mammals' website (www.marinemammals.be) is the result of a long-standing collaboration between the Royal Belgian Institute of Natural Sciences (RBINS) and the University of Liège (ULg) and provides access to data of 50 years of marine mammal strandings in Belgium and Northern France. The site consists of two main parts, i.e. 'records of strandings and observations' and the Belgian Marine Mammal Biobank, a tissue bank (BMMB or just Biobank). While stranding and observation records can be publicly consulted, the Biobank is focused on the scientific community. Overall, the website aids in collecting data on strandings, necropsies, ad hoc observations and dedicated surveys of marine mammals (pinnipeds and cetaceans) in Belgian waters. It allows to gather successive observations of an individual animal, includes the probable cause of death of stranded animals, and facilitates the data flow to (international) fora dealing with marine mammals, nature conservation or fisheries.

Ad hoc stranding and observation data are entered into the database in a standardised way by RBINS staff. In order to support and refine the cause of death as assessed on the beach, necropsy data are included in the database. The database includes the tissue samples taken, together with their way of preservation, and their location; currently the tissue bank contains over 20000 samples. The target public of the BMMB is a wide range of scientists: biologists, veterinarians, toxicologists, microbiologists, pathologists... It holds samples from the liver, blubber, lung... but also stomach contents, lesions (pneumonia, encephalitis, ...) and pathogens (parasites, virus, bacteria,...). They originate from animals stranded or bycaught in the Belgian maritime zone, but also include selected tissues of marine mammals stranded in Northern France, the Netherlands and Ireland. In the near future it will be possible to request samples for specific research objectives with an account.

Observations and strandings

Care has been taken to remove subjectivity in categorical variables, notably the observation type and the parameters. Observation type is a general indicator how the animal presented itself to the initial observer. The following values are available: Bycatch, Caught, Caught Inland, Found dead in Harbour, Died during transport/rehab, Released from captivity, Sighted, Found dead on beach, Found alive on beach/harbour, Found dead at Sea.

Additionally there are parameters that provide information on the observation and the specimen. Observation parameters provide details on wind and sea state. Specimen parameters contain circumstantial parameters, measurements, external examination observations and cause of death. Circumstantial parameters describe what happened with the specimen before, during and after the intervention. Possible values are:

Before intervention: alive, died at sea, died on beach, killed on beach, died, circumstances unknown, animal back to sea on its own.

During intervention: intervention unknown, no intervention, escaped while trying to catch, released alive, died during intervention/rehab same day, taken to rehab, euthanized.

Collection: live animal sampled, nothing collected, fully collected for necropsy, sampled, then released for destruction, sampled, then left at location, necropsy at location, released for destruction, carcass disappeared.

Observation creation and modification form

For an observation, 5 levels of detail are available: observation (time, location, textual details, and observation parameters), specimen (species, sex, number, circumstantial parameters and measurements...), external examination, cause of death and sources and media.

The cause of death can be given by the probability (definitively, probably, possible, not, unknown) of 5 possible causes of death (Natural, Bycatch, Ship strike, Predation and other).

Necropsy form

For the dead animals that were collected for necropsy, or were necropsied at the stranding site, the necropsy data are recorded. They include parameters such as weight, age, nutritional status, parasite burden, and, if possible, a cause of death. An overview of microscopic and macroscopic lesions and tissue samples taken is added.