

Information for MAPS whale sighting data

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Project	MAPS: Marine Mammal Perimeter Surveillance from RV Polarstern

Program description:

Since 2005, AWI in cooperation with Reederei Laeisz, systematically and continuously logs all sightings of cetaceans near RV Polarstern in the Southern Ocean (Marine Mammal Perimeter Surveillance, MAPS). A corresponding sighting protocol is maintained by the nautical officer on duty on the bridge of the RV Polarstern. While the officers are advised to systematically log all sightings, no dedicated sighting efforts are taken. Neither does the ship follow a dedicated survey design.

The sightings hence are considered opportunistic sightings. However, in contrast to truly opportunistic sightings, logging occurs systematically and continuously and by a limited number of persons, who have received repeated briefing on marine mammal identification and generally several years of experience as nautical officers in the Southern Ocean.

Observations are made with the naked eye or handheld binoculars (7x50). Sightings were listed on a dedicated sightings form until Polarstern cruise ANT XXIV-4 ([Figure 1](#)). The paper form was replaced by electronic logs: WERUM Wallog for expeditions ANT XXV-1 through ANT XXV-4 ([Figure 2](#)); and AWI Walog (sic!) since ANT XXVI-1 ([Figure 3](#)).

In-field identification of sighted animals up to species level is aided by picture charts and common field guides. The fact that only 14 cetacean species are listed as true Antarctic species thereby greatly facilitates the identification effort. Additional *post-event* validation of the identification might be performed using photographs or a short video sequence if available.

For each cruise, the data sets are validated (test for plausibility of sighting location and time, standardization of species names, consideration of any "comments" and additional information (photo, video)) and entered into PANGEA (one data set per cruise).

Within PANGEA all data are aggregated relating to an "event label". Event labels used in Marine Mammal Observation contain information of the cruise, which animals were sighted as well as where and when sightings occurred.

Additional metadata information (atmospheric, oceanographic and operational conditions) may be accessed via the respective doi's, as listed under "comments" on to each data set's description site.

Parameter: **Whale Species [string]**

Abbreviation: Species Parameter no: 84756

As determined by the observer at the time of observation.

When supplementary information (e.g. photographs, videos, concurrent sightings in context of dedicated marine mammal sighting efforts) are available, a post event review of this information might result in modified "species" assignments.

Whale, unidentified

On occasion, it is not possible to identify the animal. The observer is asked to classify the sighting according to size (large/small). If this is not possible, the sighting is generically listed as "whale, unidentified".

Large whale, unidentified

On occasion, it is not possible to identify the animal. The observer is asked to classify the sighting according to size (large/small). If this is not possible, the sighting is generically listed as "whale, unidentified".

Small whale, unidentified

On occasion, it is not possible to identify the animal. The observer is asked to classify the sighting according to size (large/small). If this is not possible, the sighting is generically listed as "whale, unidentified".

Baleen whale, unidentified

On occasion, it is not possible to identify the animal. The observer is asked to classify the sighting according to size (large/small). If this is not possible, the sighting is generically listed as "whale, unidentified".

Dolphins, unidentified

On occasion, it is not possible to identify the animals up to species level. These sightings are generically listed as "Dolphins, unidentified".

Physeter macrocephalus

Sperm whale

Abbreviation: P. macrocephalus

Eubalaena australis

Southern right whale

Abbreviation: E. australis

Balaenoptera borealis

Sei whale

Abbreviation: B. borealis

Balaenoptera physalus

Fin whale

Abbreviation: B. physalus

Balaenoptera aff. musculus

Blue whale

Abbreviation: (B. musculus)

In the Southern Hemisphere, these sightings might comprise the Antarctic blue whale (*Balaenoptera musculus intermedia*) and the pygmy blue whale (*Balaenoptera musculus breviceuda*). At sea both are likely to be indistinguishable, and hence are listed as *Balaenoptera musculus*.

In the Northern Hemisphere only one subspecies, *Balaenoptera musculus*, exists.

Balaenoptera musculus intermedia

Abbreviation: (B. m. intermedia)

Sighting of blue whale with subsequent species identification as *Balaenoptera musculus intermedia* (Antarctic blue whale) on the basis of video/photo footage or opinion of expert onboard.

Balaenoptera musculus breviceuda

Abbreviation: (B. m. breviceuda)

Sighting of blue whale with subsequent species identification as *Balaenoptera musculus breviceuda* (pygmy blue whale) on the basis of video/photo footage or opinion of expert onboard.

Balaenoptera aff. bonaerensis

Minke whale

In the Southern Hemisphere, these sightings might comprise *Balaenoptera bonaerensis* (Antarctic minke whale) or *Balaenoptera acutorostrata ssp* (dwarf minke whale) as these are difficult to differentiate between at sea. If additional video/footage has led to a species identification of quality "certain", the correct scientific names are given as described below.

B. aff. bonaerensis

Balaenoptera bonaerensis

Abbreviation: *B. acutorostrata*

Sighting of "Minke whale" with subsequent species identification as *Balaenoptera bonaerensis* (Antarctic minke whale) on the basis of video/photo footage or opinion of expert onboard.

Balaenoptera acutorostrata ssp.

Abbreviation: *B. acutorostrata*

Sighting of "Minke whale" with subsequent species identification as *Balaenoptera acutorostrata ssp* (Dwarf minke whale) on the basis of video/photo footage or opinion of expert onboard.

Balaenoptera acutorostrata

Abbreviation: *B. acutorostrata*

Sighting of "Minke whale" with subsequent species identification as *Balaenoptera acutorostrata* on the basis of video/photo footage or opinion of expert onboard.

In the Northern Hemisphere "Minke whale" sightings are listed as *Balaenoptera acutorostrata*.

Megaptera novaeangliae

Humpback whale

Abbreviation: *M. novaeangliae*

Globicephala melas

Long-finned Pilot whale

Abbreviation: *G. melas*

Orcinus orca

Killer whale key: Orca

Abbreviation: *O. orca*

Lagenorhynchus cruciger

Hourglass dolphin

Abbreviation: *L. cruciger*

Ziphiidae spp.

beaked whale, unidentified

Species identification for beaked whales is extremely difficult due to their elusive behavior. Therefore sightings are frequently identified only to the family level Ziphiidae. For the Antarctic treaty region (south of 60°S), the family of Ziphiidae includes:

Berardius arnouxii Abbreviation: *B. arnouxii* Key: Arnoux's beaked whale

Hyperoodon planifrons Abbreviation: *H. planifrons* Key: Southern bottlenose whale

Mesoplodon layardii Abbreviation: *M. layardii* Key: Striped-toothed whale

Delphinus delphis

Common dolphin

Abbreviation: *D. delphis*

Phocoena phocoena

Abbreviation: *P. phocoena*

Harbour porpoise

Parameter Certainty of identification [string]

Abbreviation: certainty Parameter no: 84757

As determined by the observer at the time of sighting.

When supplementary information (e.g. photographs, videos, concurrent sightings in context of dedicated marine mammal sighting efforts) are available, a post event review of this information might result in modified "certainty of identification" assignments with respect to the original data.

definite

Used if unambiguous characteristics (fluke, flippers, shape of blow, fin, color) have been observed *in-situ*, possibly supported by video/photo footage.

probable

Used if identification is supported by evidence strong enough to establish presumption but not proof of species.

possible

Used if the presumed identification has an indicated potential to be correct.

Parameter Number of individuals [#]


Abbreviation: certainty Parameter no: 84758

The number of individuals is binned according to the options given in the data acquisition software: 1, 2, 3, ≤5, ≤10, ≤ 20, > 20. More precise values may exist, due to observer comments.

Walbeobachtungen von Bord RV Polarstern

Weißer Felder: Bitte ausfüllen,

Grauer Felder: Bitte ausfüllen falls möglich

Datum	Uhrzeit																															
Schiff: RV Polarstern	Beobachter																															
Position	Wassertiefe																															
Walart	Sicherheit der Bestimmung der Art sicher / wahrscheinlich / möglich (zutreffendes bitte einkreisen)																															
Gesamtzahl an Tieren:	Anzahl ausgewachsene Tiere																															
	Anzahl Kälber																															
	Photo oder Videoaufnahmen Ja/Nein (zutreffendes bitte einkreisen)																															
	Schwimmrichtung relativ zum Schiff <div style="text-align: center;"></div>																															
	Schwimmrichtung geographisch:																															
Verhalten ausweichend / annähernd / Kurs haltend (zutreffendes bitte einkreisen)	Entfernung vom Schiff																															
taucht unter Schiff durch: Ja/Nein	Aktivität des Schiffes																															
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Gesammelte Aufzeichnungen bitte bei Anlaufen B'hvn an Olaf Boebel, AWI (0471-4831-1879)

Figure 1: Copy of paper form for systematic recording of opportunistic cetacean sightings. In use for ANT XXII, ANT XXIII and ANT XXIV.

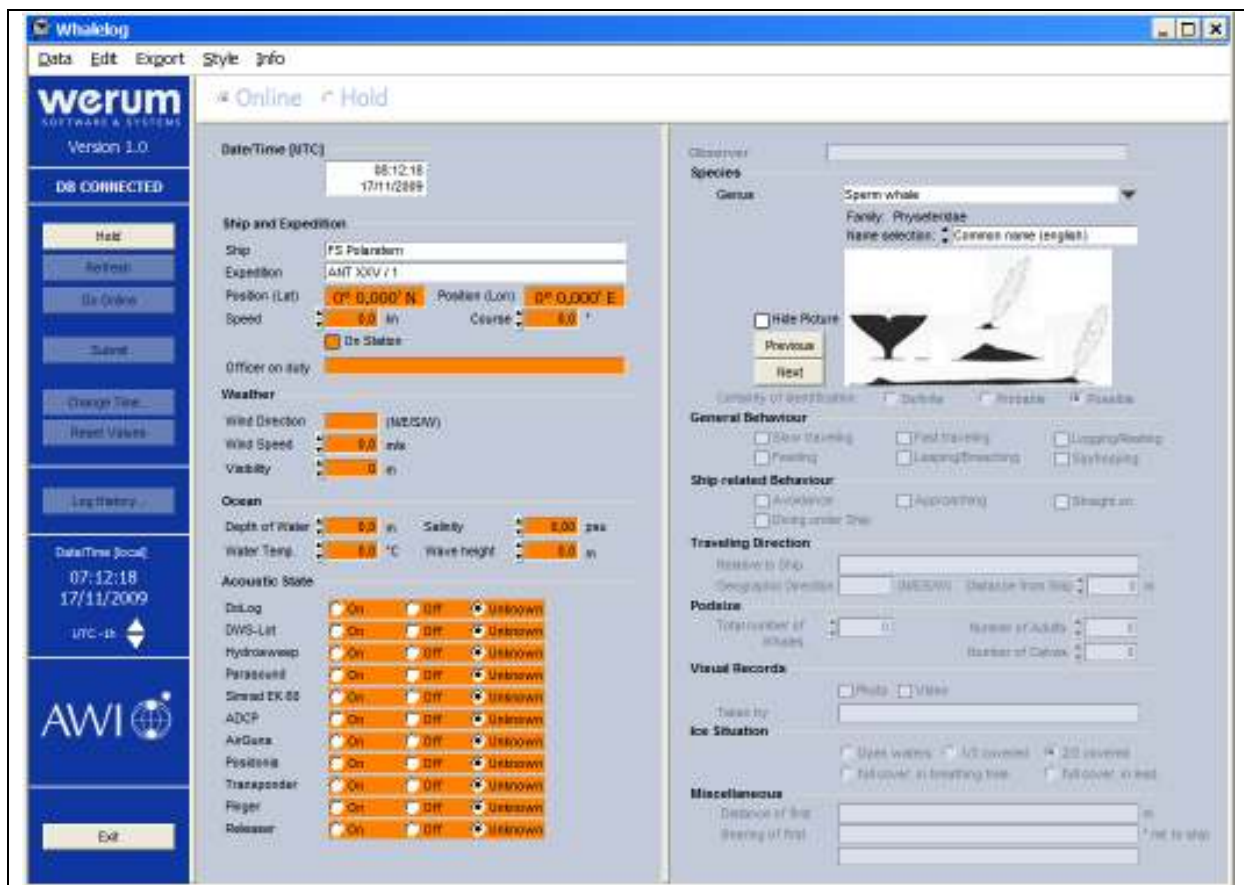


Figure 2: Screenshot of Werum Wallog program (in use for ANT XXV)

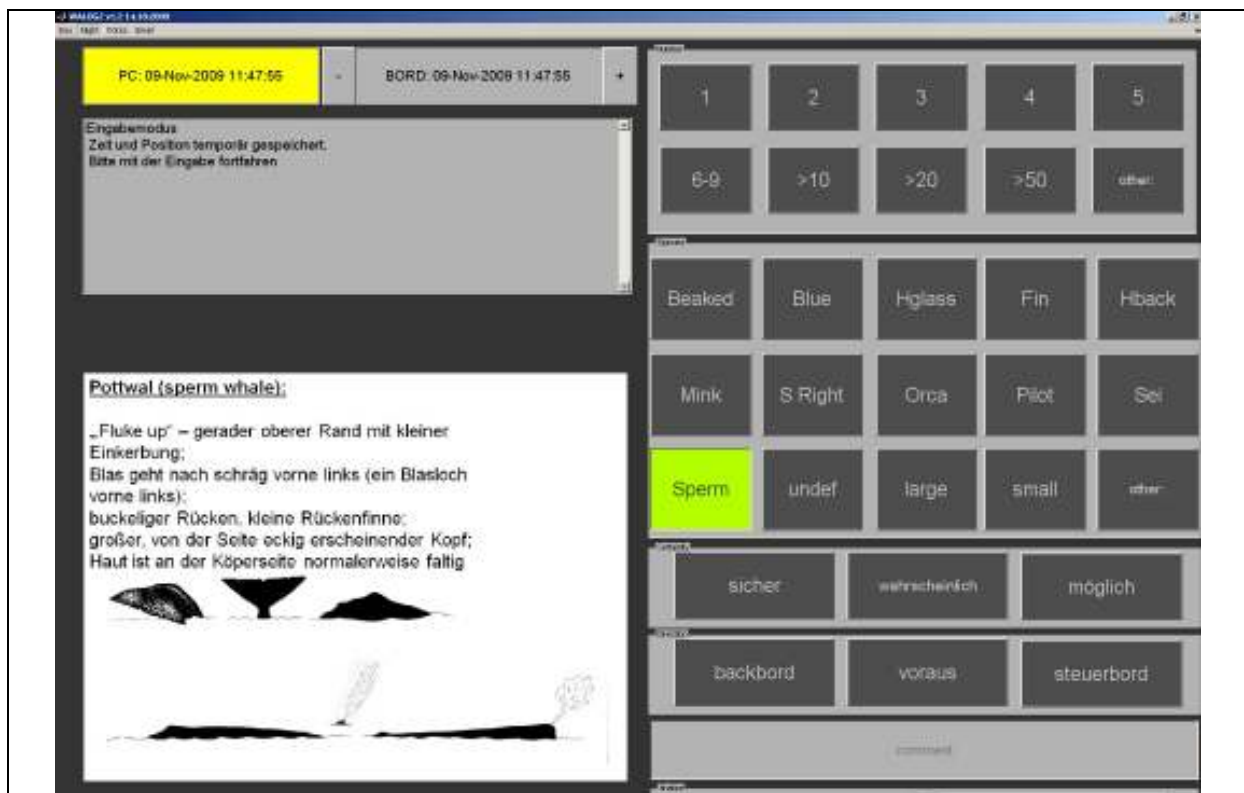


Figure 3: Screenshot of AWI Wallog program (in use since ANT XXVI)