

## Harbor porpoise Health status and causes of death 2018

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## 1. Material

Altogether 12 harbor porpoises were necropsied during 2018. Five of them were found in the Skagerrak, one in the Kattegat, four in Öresund, one in the Baltic and one was found 15 km upstream river Nissan. The latter was dumped there by someone because hydroelectric dams make it impossible for a porpoise to swim all the way up river Nissan.

Two of the porpoises died November and December 2017 and ten in 2018. Three died during spring (March and April), three during the summer and six during fall-winter (September-December). The spring and summer of 2018 was exceptionally hot and dry, and stranded porpoises rotted very fast so it was not possible to collect more individuals.

Samples from all porpoises were taken for the Environmental Specimen Bank for future contaminant analysis and the National Veterinary Institute's (SVA) biobank for future studies on pathogens (e.g. viruses, bacteria) (various tissues).

We also received samples from five porpoises: one from the Skagerrak, two from the Kattegat and two from the Baltic.

## 2. Results

See Table 1 for detailed information on the specimens that were examined by necropsy and Table 2 for porpoises from which we only received samples. If porpoises have been heavily scavenged (typically by birds) or are severely decomposed, it is often not possible to determine the cause of death. Five of the twelve porpoises examined by necropsy were adults and all five were males. Two of them were aged to be 9 and 14 years respectively, from analysis of the teeth.

Five of the porpoises were bycaught in fishing gear and two additional individuals were suspected to be bycaught, but decomposition of the carcasses rendered it not possible to determine the cause of death with certainty. However, both were in normal condition and had no interior pathological changes which led us to suspect that they were bycaught. The porpoise found in Nissan was bycaught and placed there. One young male (18,7 kg, 105,5 cm long) was found stranded at Orust. It was too decomposed to evaluate cause of death but it was in very good condition and it cannot be ruled out that it was bycaught as well.

One of the porpoises was a stillborn calf, found June 28. The most likely cause of stillbirth was obstetrical complications. Another calf died July 7. It had digested blood in the stomach originating from microulceration which is most commonly associated with stress. That finding, coupled with the empty stomach, suggests that the calf may have been abandoned. Another possible cause of death is hypoglycemia.

Only one porpoise was found in the Baltic. It was an immature male in normal nutritional condition that was found stranded in Trelleborg. Unfortunately it was too rotten to determine cause of death. A small defect was observed in the caudal right skull. However, it was not a bullet wound, but could be consistent with trauma. As a secondary finding, it had previously

suffered inflammation or possibly hemorrhage in the pericardial sac around the heart, which lead to the development of fibrous adhesions between the pericardium and heart.

One male (60 kg) died from pneumonia from a lungworm infection that predisposed the porpoise to secondary bacterial infection by *Shewanella*. The role of *Shewanella* bacteria in the pneumonia is unclear. It is commonly found in marine environments and has occasionally caused disease in humans.

Finally, eight of the carcasses were screened for salmonella infection in the lungs and all were negative.

SVA nr	NRM nr	Date	Sex	Length (cm)	Weight (kg)	Agegroup	Age (teeth)	County board	Locality	Cause of death	Other	Nutritional condition
VLT 1112/18	A2018/05287	2018-04-14	Female	105,5	18,7	Immature		Västra Götalands län	Allmagsvik, Orust	Found dead		Average
VTL2393/18	A2018/05711	2018-09-05	Male		43,0	Adult		Västra Götalands län	Skärhamn	Bycaught	Mild liver and lung parasitism	Average
VLT2394/18	A2018/05709	2018-08-28	Male	151,5	52,0	Adult		Västra Götalands län	Skärhamn	Bycaught	Stomach empty	Average
VLT2395/18	A2018/05710	2018-09-01	Male	146,0	49,0	Adult		Västra Götalands län	Skärhamn	Bycaught		Average
VLT2400/18	A2018/05708	2018-07-09	Female	82,0	8,1	Calf		Västra Götalands län	Sydoster between Vadholmshuvudet and Vedskär	Abandoned	Stomach empty	Average
VLT 1114/18	A2018/05284	2017-12-18	Male	150,0	40,0	Adult	9	Skånes län	Mellbystrand	Maybe bycaught	Cause of death undetermined, Cholangitis	Poor nutritional status
VLT 1111/18	A2018/05286	2018-04-08	Male	122,0	37,0	immature		Skånes län	Höganäs harbour	Probably bycaught		Average
VLT 1113/18	A2018/05283	2017-11-20	Male	159,5	60,0	Adult	14	Skånes län	Lomma, Limhamn	Found dead	Purulent pneumonia, Cholangitis, Unspecified dermatitis	Average
VLT 1115/18	A2018/05285	2018-03-14	Female	118,0	34,0	immature		Skånes län	Ålabodarna	Bycaught		Average
VLT2397/18	A2018/05707	2018-06-28	Female	78,0	6,6	Calf		Skånes län	Helsingborg	Stillborn		Below average
VLT2399/18	A2018/05712	2018-09-05	Male	132,5	33,0	immature		Skånes län	Östra stranden, Trelleborg	Trauma	Stomach full of cod otoliths	Average
VLT2398/18	A2018/05713	2018-10-13	Male	109,0	29,0	Yearling		Hallands län	15 km upstream Nissan, Oskarström	Bycaught		Above average

Table 1. Information about 12 porpoises that were necropsied in 2018.

Area	NRM nr	Date	Sex	Agegroup	Age (teeth)	County board	Locality	Cause of death	Other
The Skagerrak	A2018/05596	2018-09-20	unknown	not known		Västra Götalands län	Pinnevik, Lysekil	Unknown	Very decomposed
The Kattegat	A2018/05455	2017-10-26	unknown	not known		Skånes län		Unknown	Very decomposed
The Kattegat	A2018/05456	2017-10-26	unknown	not known		Skånes län		Unknown	Very decomposed
The Baltic	A2018/05005	2017-11-23	unknown	not known		Skånes län	Måkläppen	Unknown	Only skull found
The Baltic	A2018/05097	2017-08-05	Male	Adult	18	Skånes län	200 m S Slussen, Skanör	Unknown	Very decomposed

Table 2. Information about four porpoises that were found stranded and not necropsied. Only samples from them were sent to SMNH.

### 3. Acknowledgement:

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