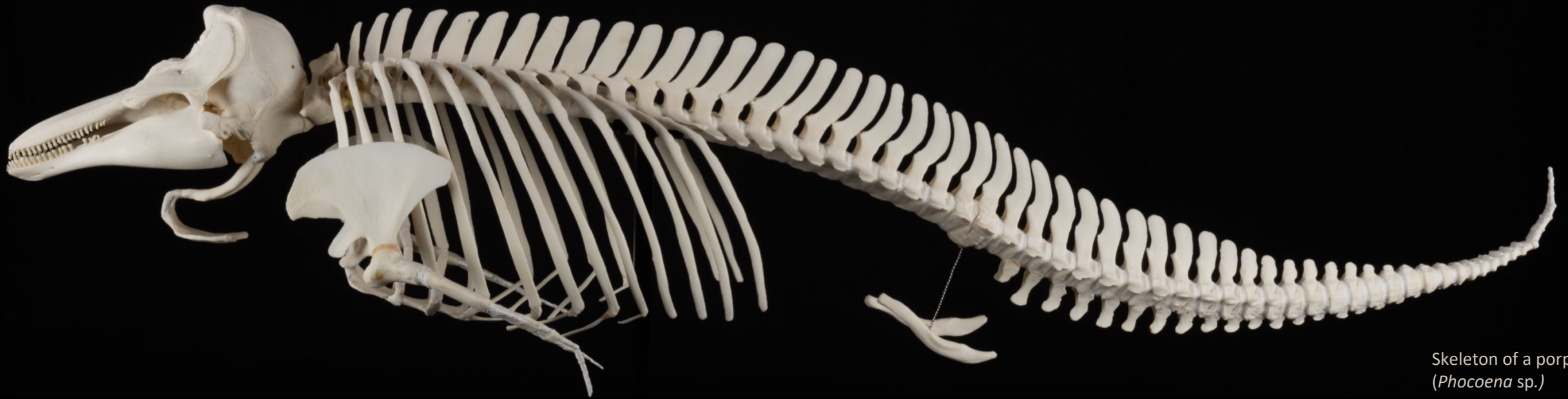


A whale with a 'seventh sense'



Skeleton of a porpoise
(*Phocoena* sp.)

When thinking of whales, the image that immediately comes to mind is that of a blue whale about 20 m long jumping out of the sea, but there are also whales that are less than 2 m long, the harbour porpoise (*Phocoena phocoena*). Harbour porpoises are among the smallest cetaceans and occur throughout temperate, shelf waters of the northern hemisphere. The harbour porpoise is the only member of the porpoise family that also lives in European waters. They were, at one time, common in the central Baltic Sea, but their abundance has been extremely decreased in recent decades. The population has declined so much that today there are only about 250 mature specimens left, which is why the species has been classified as critically endangered in the Baltic Sea. The IUCN classified the species as vulnerable throughout Europe, but of least concern globally.

Harbour porpoises (*Phocoena phocoena*), like all toothed whales, have a 'seventh sense'. They use a special biosonar or so-called echolocation for orientation by generating an acoustic image of their surroundings with the help of high-frequency sound waves. With the 'phonic lips', an organ similar to the vocal folds, the animals produce short high frequency clicking sounds. These are bundled in the melon, an organ consisting of various layers of fatty tissue, and radiated into the water as sound waves. These acoustic waves are reflected by hindrances and absorbed again via the whale's lower jaw. From there, the bundled waves are transmitted to the inner ear, registered and the obtained information is processed in the brain. The animals use this extraordinary sensory performance for navigation, hunting and communication with conspecifics.

With the help of biosonar, harbour porpoises can locate their prey such as herring, sprat or cods, but not the fine meshes of fishing gear, especially gillnets. Such gillnets occur throughout their range but are a massive problem for the Baltic Sea population in particular, because in many regions the marine mammals come very close to the coasts and thus to the nets. Since the small whales cannot swim backwards, they turn further and further into the net when touched and try to wriggle out of the death trap, eventually suffocating in it. These incidental bycatches are one of the main reasons for the massive decline in the Baltic Sea population, but also pose a threat to other harbour porpoise populations.

Efforts to protect the small cetacean with its special echolocation have been intensified for many years. Many countries

have established protected areas, there are agreements on a maximum number of bycatches allowed, underwater noise caused by ships is to be reduced and hunting of harbour porpoises has also been banned in parts of the range. In the Baltic Sea, measures were adopted to restrict driftnet fishing and - probably one of the most important interventions - the mandatory use of acoustic deterrent devices (pingers) in some EU gillnet fisheries. With the help of these protective measures, the harbour porpoise will hopefully be able to navigate the seas with its seventh sense for a long time to come.

Sources

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