



## FACT SHEET - THE CANADIAN MUSEUM OF NATURE'S BLUE WHALE

The Canadian Museum of Nature's new Water Gallery features a star specimen – a real blue whale skeleton (only one of two on display in Canada!). The other was donated by the Museum to the new Beaty Biodiversity Museum at the University of British Columbia, which cleaned and prepared it. Both were fully unveiled to the public on May 22, 2010 – International Biodiversity Day.

### SIZE AND WEIGHT:

- length: 19.8 metres (66 feet)
- the whale is estimated to have weighed roughly 80-90 metric tonnes in life
- skeleton contains 189 bones (138 original bones with an additional 51 that were fabricated to replace missing ones)
- skull length is approximately 5.4 metres, and with the lower jaws weighs 1,290 kg
- total weight of the skeleton is 2,883 kg



### THE WHALE'S STORY

The story of this blue whale began in 1975 when she was found dead and beached at Codroy, Newfoundland. It is not certain how the animal died, but damage to the vertebrae suggests a collision with a ship. She had not quite reached adulthood.

The whale was donated to the CMN (then the National Museum of Natural Sciences) by the Fisheries Research Board. Flensing took place on the beach under contract between April 22 and May 10, 1975 to remove all the skin, blubber and muscle.

The whale was shipped to Ottawa by rail car and buried at the NCC tree nursery on Russell Road. In 1983, the bones were excavated. After eight years in the ground, the bones were partially clean but the deep burial in the sandy clay soil did not allow for complete biological action.



### CLEANING THE WHALE

To prepare the specimen for installation in the gallery, collections staff undertook the long process of cleaning the bones that were still weeping oil after 30 years.

Whale skeletons are rich in oils and are typically degreased for museum display by using solvents, boiling or by burial in manure-enriched organic soil. Museum staff chose instead to use enzymes because they are biodegradable, as well as cost and time effective. There are no hazardous waste products to process.

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Museum staff built several tanks for the enzyme “bath”, the largest being 2.7 m x 6 m, and holding approximately 2,000 litres of water mixed with enzymes. This was heated to a constant 45 degrees Celsius and was kept aerated.

Two enzyme products were used: pure lipase enzymes and a commercial proprietary enzyme cleaner used in the food industry. Lipase is an enzyme that catalyzes the breakdown of fats into fatty acids and glycerol. Lipases are present in the pancreatic and intestinal fluids of all vertebrates.

It took two years to degrease the skeleton in several batches. At various stages, staff drilled and removed core samples to determine the oiliness of the bones. When most of the oil had been broken down, staff removed the bones and began soaking the next batch: the vertebrae.

This may be the fourth known whale to be degreased using an enzyme bath, but it’s definitely the largest. The other whales treated with enzymes include a bottlenose whale and a pilot whale in London, and a minke whale in Copenhagen.

The cleaned and restored skeleton was assembled in sections on a fabricated metal frame at the Museum’s collections facility in Gatineau. It was installed in March 2010 in the new Water Gallery on the 2<sup>nd</sup> floor of the Canadian Museum of Nature in downtown Ottawa.



Watch a [time-lapse video](#) of the installation!

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