



KATE ALLEN/TORONTO STAR

Researchers from the Royal Ontario Museum plugged the whale's heart's valves with buckets, pop bottles and sutures so the organ would hold a formaldehyde solution.

Heavy heart: Thawing a 180-kg organ

Team of experts prepares 'spectacular specimen' from blue whale for display

KATE ALLEN
SCIENCE & TECHNOLOGY REPORTER

It is among the largest organs in the largest animal species that has ever existed on earth.

So last May, when scientists from the Royal Ontario Museum realized they had a chance to collect the heart of a dead blue whale that floated to shore in Newfoundland, they jumped — or rather pushed, tugged, hacked and sliced. Eventually, they freed the organ from the rotting carcass that encased it. At approximately 180 kilograms, it weighed as much as a large tractor tire.

For a year, that heart has sat frozen in a warehouse two hours east of Toronto. This week, it was slowly thawed, and researchers began the occasionally gag-inducing but always fascinating process that will ready the heart for display.

"It's a spectacular specimen," says Jacqueline Miller, a mammalogy technician from the ROM, adding that to the best of her knowledge, no other museum in the world has one.

"How big do you have to be to supply and feed something as large as a



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One of the two rotting blue whale carcasses on Newfoundland's shoreline back in May 2014.

blue whale? It just boggles the mind."

Readers may remember the story of the dead blue whale that washed ashore last May in Trout River, N.L. Its gory disassembly by ROM researchers was followed by this newspaper and many other media outlets. The ROM later collected a second blue whale from nearby Rocky Harbour, probably part of the same pod that was trapped in sea ice months earlier and crushed to death. Its viscera were in much better shape. Miller,

who was present for the processing, pounced on the opportunity to collect an incredibly rare specimen: the blue whale is endangered, and researchers almost never get a chance to probe its anatomy.

The team extracted the heart as carefully as possible, slicing through veins, arteries and connective tissue, and entombed it in a deep freezer. Since then it has been sitting frozen at the Trenton, Ont.-headquarters of Research Casting International, the

company commissioned to help prepare the animals for exhibit.

Last Friday, that freezer was unplugged, and five days later the heart was fully thawed. The team — ROM staffers, two American experts on large mammals and plastination, and technicians from Research Casting International — began working as quickly as possible, racing against putrefaction.

First the team began to plug up all the major valves leading to and from

the heart, using "buckets, bottles, whatever fits. There's a toilet plunger in one of them," Miller says. Smaller openings were sutured. The process took days, because the researchers kept finding new things: "Part of the beauty of this is nobody knows about blue whale heart anatomy," Miller says.

On Thursday, when the team was convinced that the organ was as structurally sound as possible, two hoses were attached and a formaldehyde solution was pumped in. The heart will sit in its formaldehyde bath for a week, and then be dehydrated with acetone. After drying out for six weeks, the tissues will be slowly impregnated with silicone. When the silicone hardens, the heart will be fully plasticized, allowing it to be kept indefinitely.

The ROM hopes to eventually display it as part of a massive exhibit on marine mammals, the capstone of which will be the skeleton of the Trout River blue whale. But the process is dependent on fundraising: the whales were unexpected bounty, from a budgetary perspective.

"This will be the largest heart specimen that we know of anywhere. That in and of itself is a phenomenal education and learning resource," Miller says.