

# Anatomy of a giant

A dead sperm whale washed up near Jurong Island last Friday. It was Singapore's first sperm whale sighting and the third recorded in South-east Asia. Staff from the Lee Kong Chian Natural History Museum have been taking samples and removing the carcass' flesh and organs this week. TODAY takes a closer look at this amazing species.

## Sperm whale

*Physeter macrocephalus*

### Spermaceti

This organ contains a waxy liquid called spermaceti. Scientists believe that it is involved in the generation of sounds and aids in controlling the buoyancy of the whale. Historically, the liquid from this organ was used to produce sperm oil

Lungs

Brain

Heart

Flipper

Bone structure of the flipper is similar to that of the human arm and hand

Echolocation Receiver in lower jaw

Jaw can open 90 degrees

20-29 teeth on each side of lower jaw

Hunting and fights with giant squid leave numerous scars around the mouth

Nose

Tail (5m approx.)

37kmh average speed

Unlike fish, which swim by moving their tails side to side, whales and dolphins move their tails up and down

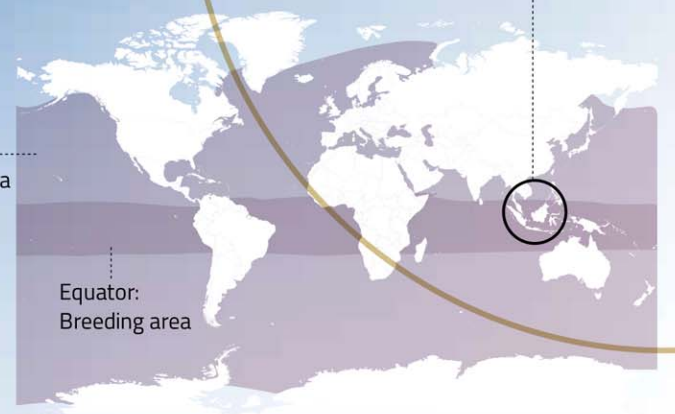
The specimen found was a 10.6m-long adult female, and is estimated to weigh eight to 10 tonnes

Circular shape: Actual size of a sperm whale's eyeball

Worldwide, the sperm whale population takes as much food out of the ocean each year as all fisheries do

### Distribution area

They probably use the shallow waters of the Sunda Shelf to transit between the South China Sea, and the Pacific and Indian oceans. Stranded sperm whales appear to be rare in this area, although there are reports of them moving along the Straits of Malacca and the South China Sea



Depth: More than 1000m

### Junk chamber

This organ contains fatty tissue and collagenous portions that help the whale to transmit sounds that produce echoes; the whale then interprets these to find food

### Vertical dive

- 1 A whale spends 10-11 minutes on the surface taking 60-70 breaths during that time
- 2 Sperm whales can stay submerged for up to 90 minutes
- 3 They search for squid and fish that are in the deep sea

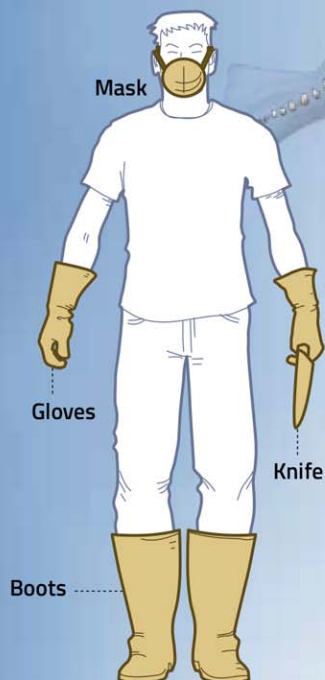
These whales eat hundreds of fish and squid (about 900kg per day)

## How to preserve a whale

The entire process could take months, said Mr Marcus Chua, curator of mammals and birds at the museum

The skeleton will be on display at the Lee Kong Chian Natural History Museum after it has been processed

### Gear for cutting



### De-fleshing

They took samples of the whale's skin, gut lining and gut for DNA testing

The team cut off the blubber, which was more than four inches thick in some areas, in strips

### Numbering

The bones are numbered so they do not get mixed up

### Bleaching

The bones are bleached by the sun

### Boiling

The bones need to be boiled for soft tissue and oil to be removed

### Degreasing

The oil also needs to be removed using a degreaser

### Preservation

The bones are likely to be soaked in a solution of borax, which is commonly used in taxidermy