Algal bloom wildlife post-mortem report

Government of South Australia
Department for Environment and Water

Species – Bottlenose dolphin

Date collected – 19 March 2025

Location – Middleton Beach

History relating to the animal

One bottlenose dolphin foetus (*Tursiops spp*.) was found dead at Middleton on 19 March 2025.

Clinical examination

The animal was already dead and so could not be examined prior to death.

Necropsy

The necropsy (looking at the whole body) revealed that the dolphin foetus weighed 7.1kg, with the umbilical cord still attached with no placenta. There was moderate freeze artifact and putrefactive post-mortem autolytic change (decomposing after death), with the mandible (lower jaw) missing and areas of missing skin. Due to the advanced decomposition, it was not possible to determine the sex of the foetus.

Samples were collected to test for avian influenza. Tissue samples were collected and stored; however further testing was not indicated in this case.

Virology

Testing results for avian influenza were negative.

Summary

A bottlenose dolphin foetus was found dead at Middleton. Testing for avian influenza was negative. Laboratory examination found the body was badly decomposed and the cause of abortion/death could not be determined.

Outlook

PATH RESULTS: DOLPHIN BOTTLE NOSE, (Ma) [redacted]

From [redacted]
Date Wed 13/08/2025 5:00 PM
To [redacted]

[redacted]

[redacted]

[redacted]

Tested on 19/03/25
Reported on 13/08/25 17:30
Referred on 19/03/25 **by:**
[redacted]

Animal/s:
Marine Mammal

SKYE AVE
MIDDLETON 5213

DOB: N/A

Collected: 19/03/25 00:25 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

SUMMARY DIAGNOSIS
The cause for the abortion is not identified

SUMMARY COMMENTS
As [redacted] outlined in her email, Karenia mikimotoi, a dinoflagellate which causes harmful algal blooms, releases toxins (not yet identified) leading to fish kills and deaths of other marine animals.
This dolphin foetus could have been aborted due to the stress of the Karenia bloom on its dam.
Avian influenza is not detected in the foetus.

[redacted]

Specialist Veterinary Anatomic Pathologist
[redacted]

Validated by [redacted]

MOLECULAR DIAGNOSTICS

INFLUENZA A RNA PCR (REAL TIME REVERSE TRANSCRIPTASE)

Specimen type: Oropharyngeal swab in VTM

SPECIMEN ID	Type A	H5	H7
DOLPHIN	Not detected		

Sample ID: Frozen dolphin
Validated by [redacted] Laboratory Scientist.

Number of samples 5

[redacted]

[redacted]

[redacted]

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NECROPSY REPORT

CLINICAL HISTORY
Please refer to the clinical history on the request form and the clinical notes sent with the request form. A brief summary of the clinical history;
Microalgae (dinoflagellate) Karenia mikimotoi was detected in the water samples from Victor Harbour. Algal counts in the water sample from Victor Harbor were low, however this was the less impacted site at time of collection.

A previous fish kill at Coffin Bay in 2016 was linked to this species, which persisted for approximately six days.

Water testing results from Waitpinga are pending.

Karenia mikimotoi can cause mass mortalities of marine species at varying concentrations, species dependent. Karenia mikimotoi causes excessive mucous production in the gills, gill lesions and sloughing of the oedematous epithelium of fish causing suffocation, but has a range of other impacts on other species such as liver lesions, immune function issues and gut tissue damage.

SAMPLES SUBMITTED
One bottle nosed dolphin foetus; The bag is labelled "18/3/2025 dolphin Middleton Chapman Rd"

NECROPSY FINDINGS
There are moderate freeze artefact and putrefactive changes.

The crown to rump length is approximately 70cm and the animal weighs 7.1kg.

There are no mandibles / lower jaw. Multifocal the skin has peeled from the dermis.

There is an umbilical cord attached at the umbilicus but no placenta.

Due the putrefactive changes the sex cannot be determined.

The lungs do no float in water (non-aerated lungs).

[redacted]

[redacted]

[redacted]

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Collected: 19/03/25 00:25 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

GROSS SUMMARY
One aborted foetus

SAMPLES COLLECTED & TESTING
As outlined by the WOAH guide for HPAI investigation in marine mammals, an oropharyngeal swab in virus transport medium will be tested for AI by qPCR.

With the approval of the acting Chief Veterinary Officer, paired oropharyngeal swab in virus transport medium, lung, brain and other tissues will be sent to ACDP for AI testing. This is because a dolphin is an uncommon species for AI testing at VETLAB Gribbles.

Formalin fixed and fresh brain, heart, lung, kidney, liver are stored at the laboratory. Please note spleen was not found due to putrefactive changes.

COMMENTS
As [redacted] outlined in her email, Karenia mikimotoi, a dinoflagellate which causes harmful algal blooms, releases toxins (not yet identified) leading to fish kills and deaths of other marine animals (Li et al 2019). This dolphin foetus could have been aborted due to the stress of the Karenia bloom on its dam.

As requested testing for Avian influenza is in progress.

Due to the freeze artifact and putrefactive changes, other ancillary tests are not recommended. The tissues are stored for one month and then will be discarded if no further testing is required.

Li, X., Yan, T., Yu, R. and Zhou, M., 2019. A review of Karenia

mikimotoi: Bloom events, physiology, toxicity and toxic mechanism. Harmful Algae, 90, p.101702.

WOAH Practical guide for authorized field responders; HPAI in marine mammals (https://www.woah.org/app/uploads/2024/02/practicalguide-forauthorisedfiel-dresponders-hpaimarinemammals-feb24-1.pdf)

[redacted]

[redacted]

[redacted]

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DOB: N/A

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Specialist Veterinary Anatomic Pathologist
[redacted]

Validated by [redacted]

MOLECULAR DIAGNOSTICS

Influenza Type A - TaqMan Assay

Species : Bottle-nose dolphin
Number of specimens: 6
Specimen type : Tissue

SAMPLE ID	TEST RESULT
BRAIN	Negative
LUNG	Negative
LIVER	Negative
KIDNEY	Negative
HEART	Negative
OP SWAB	Negative

COMMENT: OP SWAB = Orophayngeal Swab

Australian Centre for Disease Preparedness (CSIRO)
NATA accreditation number: 13546

Validated by [redacted] Laboratory Scientist.

CASE MANAGEMENT DETAILS

Case Managed by:	
Case Management Requested by:	[redacted]
Case Management Requested on:	20/03/25

Case Details: Found dead at Middleton.