

Algal bloom wildlife post-mortem report



Government
of South Australia

Department for
Environment and Water

Species - Common dolphin

Date collected – 30 June 2025

Location – Semaphore Beach

History relating to the animal

One adult male common dolphin (*Delphinus delphis*) was found deceased on Tennyson Beach on 28 June 2025. It disappeared into the water and was found again the morning of 30 June 2025 at Semaphore Beach.

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 the dolphin had already started decomposing when examined in the laboratory, causing changes to the skin and underlying layers of tissue. No inflammation was associated with these changes indicating they occurred after the animal's death. The animal had ventral (on the underside) and dorsal (along its back) fat pads present. The brain was liquifying due to the decomposing state. In the trachea (wind-pipe) and the pericardial sac (the tissue that envelops the heart) there was some discoloured fluid present. The valves of the heart (that open and close to allow blood flow) were normal. There were lesions (abnormal tissue) present in the lungs which were likely due to decomposition. The gastrointestinal tract was empty, and the liver had multiple white lesions (unusual tissue) present (this is usually indicative of some disease process).

Tissues were collected to test for avian influenza (which can infect marine mammals) and for histopathology (looking at tissues under the microscope for more detailed information). Testing for brevetoxins and other algal biotoxins, a possibility due to the algal bloom, was requested. Samples were collected for other testing that might be indicated after these tests were performed.

Histopathology

Samples from every major body system were examined under the microscope. There was moderate post-mortem decomposition of all tissues. There were no remarkable findings that could explain the cause of death in this animal.

Brevetoxins

No samples were above limits of reporting.

Other algal biotoxins

No samples were above limits of reporting.

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Avian influenza

Results were negative.

Summary

The animal was found deceased on a suburban beach, which is not unusual. Laboratory examination (necropsy and histopathology) could not identify the cause of death. Laboratory testing for avian influenza was negative and there was no evidence of the presence of brevetoxins or other algal biotoxins.

PIIMS Laboratory Results Viewer



Result Details Page

Submission No: [REDACTED]

Lab No. - Test: [REDACTED]

Animal/Batch Id:
Unknown*

Owner:

Submitter:

PIC: Unknown*

Submitter Id:

Species: Unknown*

Clinic Phone:

Age: Unknown* Unknown*

Submitted: Unknown*

* Note: No CNF records have been received for this submission.

Test: GP - GROSS PATHOLOGY

Reported: 02/07/2025 15:53

Validated by [REDACTED]

Test: GP - GROSS PATHOLOGY

Reported: 02/07/2025 15:53



CLINICAL HISTORY

1 dolphin was seen washed up on Tennyson beach on Saturday, 28th June 2025. It disappeared into the water and found this morning 30th June 2025 at Semaphore Beach

SAMPLES SUBMITTED

One dead male dolphin, 70kg.

NECROPSY FINDINGS

There are moderate post-mortem autolytic changes. The dolphin weighs 70kg.

Multifocally the skin is eroded, exposing the underlying pink subcutaneous layer (likely post-mortem changes). There are also numerous linear 'slash' marks on the skin, especially around the ventral abdominal region (likely post-mortem changes). No inflammation is associated with the skin changes.

The ventral fat is approximately 2cm thick; the dorsal fat pad (close to dorsal fin) is approximately 1.5cm thick.

Both eyes are sunken into their sockets and are dried (likely post-mortem changes). The soft tissue of the caudal mandible is missing. The tongue is markedly autolysed, with some missing parts. The caudal pharynx and larynx is covered with sand.

The caudal brain (especially the cerebellum) is green. The ventral brain is mildly liquefied.

The caudal 1/3 trachea contains \R\5ml opaque serosanguinous fluid. The same fluid is seen within the pericardial sac.
The heart is 300g. Both valves are grossly normal.
There are multifocal, flat, irregular, dark red depressions throughout both lungs (likely post-mortem changes).

The stomach and intestines are empty, with only scant amounts of green opaque fluid. No faeces were present in the colon or rectum.
The liver contains multiple pinpoint white nodules.
The kidneys are approximately 15cm in length and are bilaterally symmetrical.
The testes are present and are grossly normal.

GROSS DIAGNOSIS

Moderate autolysis

SAMPLES COLLECTED & TESTING

Tracheal swab in VTM -AI PCR

Fresh lung, liver, spleen, heart, brain - AI PCR

Fresh liver, spleen, kidney - Bio and Brevetoxin testing

Fresh tissues in 50 mL pots (lymph node, abdominal fat, heart, stomach, trachea, intestine, stomach content, adrenals, trachea, testes, skeletal muscle, brain, oesophagus, eye, kidney, liver, intestine, lung, spleen, faeces) - stored in -80

Fresh tissue in 5 mL tubes (heart, kidney, brain, lung) - stored in -80

Validated by



This request has other tests in progress at the time of reporting

PIIMS Laboratory Results Viewer



Result Details Page

Submission No: [REDACTED]

Lab No. - Test: [REDACTED]

Animal/Batch Id:
Unknown*

Owner:

Submitter:

PIC: Unknown*

Submitter Id:

Species: Unknown*

Clinic Phone:

Age: Unknown* Unknown*

Submitted: Unknown*

* Note: No CNF records have been received for this submission.

Test: SUP - VET SUPPLEMENTARY

Reported: 12/07/2025 16:07

SUMMARY COMMENTS

No diagnosis is concluded

COMMENTS

There are no gross findings to determined the cause of death. The dolphins is negative for Avian influenza.

[REDACTED]
Specialist Veterinary Anatomic Pathologist

Validated by [REDACTED]

This request has other tests in progress at the time of reporting

Test: SUP - VET SUPPLEMENTARY

Reported: 12/07/2025 16:07

Validated by [REDACTED].

PATH RESULTS: DOLPHIN, (Ma) [REDACTED]

From [REDACTED]

Date Fri 8/08/2025 1:00 PM

To [REDACTED]

[REDACTED]

Tested on 01/08/25
Reported on 08/08/25 13:30
Referred on 30/06/25 **by:** [REDACTED]

[REDACTED]

Owner:
DOLPHIN

Animal/s:
Marine Mammal

SEMAPHORE 5019

DOB: N/A

Collected: 30/06/25 00:25 **Subm.No:** [REDACTED]

Lab No.: [REDACTED]

Samples tested as received

All Tests Complete

HISTOPATHOLOGY

REF: [REDACTED]

CLINICAL HISTORY

1 dolphin was seen washed up on Tennyson beach on Saturday, 28th June 2025. It disappeared into the water and found this morning 30th June 2025 at Semaphore Beach

MACROSCOPY

Pot 1 = brain.

A + B = brainstem

C = cerebellum

D = caudal cortex

E = Lateral ventricle

F+ G = cavitation at cortex at level of lateral ventricle

2A = spleen, oesophagus, vessel (aorta)

2B = kidney, pancreas, lung

2C = colon

2D = skin, trachea, stomach

2E = jejunum, colon, lymph node

2F = skeletal muscle, diaphragm, liver, colon

2G = colon, adrenal gland

2H = heart, liver

MICROSCOPY

There is moderate autolysis of most tissues, including brain, pancreas, alimentary section, kidney and moderate numbers of short rod bacteria within the vessels of multiple organs including the brain (post mortem bacterial overgrowth). The cavitation in one section of the brain is likely post mortem putrefaction.

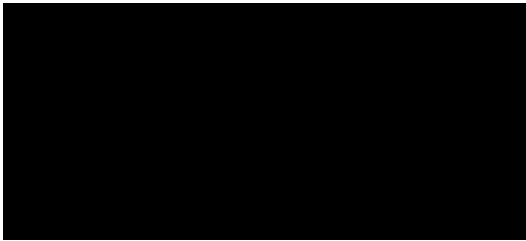
The spleen, oesophagus, aorta, lung, colon, skin, trachea, stomach, jejunum, lymph node, skeletal muscle, diaphragm, liver, adrenal gland and heart are histologically unremarkable.

DIAGNOSIS

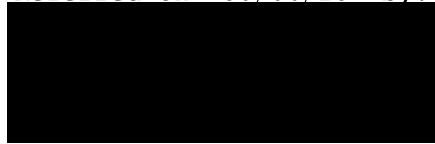
Unremarkable histological findings

COMMENTS

There are no histological findings to explain the cause of death for this animal.



Tested on 01/08/25
Reported on 08/08/25 13:30
Referred on 30/06/25 by:



Owner:
DOLPHIN

Animal/s:
Marine Mammal

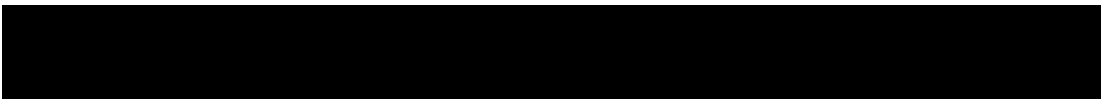
SEMAPHORE 5019

DOB: N/A

Collected: 30/06/25 00:25 Subm.No: Lab No.:

Samples tested as received All Tests Complete

Could decreased food abundance have contributed to the chronic weight loss ?



Specialist Veterinary Anatomic Pathologist



Validated by Veterinary Anatomic
PathologyDiagnostician.

CERTIFICATE OF ANALYSIS

Customer:
Address:

Submission Description:
Sample Received Date:
Contract Number:
Client Order Number:
Program/Quote Reference:

Common Dolphin Biotoxins
16/07/2025

Sample(s) analysed as received. Sampling date and time data supplied by the client. The document shall not be reproduced except in full.
Additional information relating to this submission can be found in the sample receipt notification.

This report supersedes any previous reports with this submission number.

Many tests specify a holding time which gives the recommended timeframe by which a sample should be preserved/extracted and/or analysed after the sample is taken.

Holding time information can be found on the AST website <https://analyticalservices.tas.gov.au/our-services/containers-samples-and-submissions>.

Whilst every effort is made to analyse samples within these timeframes, situations can occur where this is not possible.

Where a test has been conducted outside the recommended sample holding time this should be taken into account when interpreting results.

The results in this report were authorised by:

Name	Position
	Chemist

Test Information:

Method ID	Test Description	Date Commenced:
3411	Lipophilic Toxins in Shellfish by LC-MS/MS	22-07-2025
3411A	Brevetoxins in Biota by LC-MS/MS	22-07-2025
3416	PST in Biota by LC-MS/MS (Boundy Method)	22-07-2025

Chemistry Test Results (Biota - Food)

Chemistry Test Results (Biota - Food)		Sample Description	Lung	Kidney	Liver	Brain
		Sampled Date/ Time	30/06/25 0:00	30/06/25 0:00	30/06/25 0:00	30/06/25 0:00
Method ID	Analyte	Units	324447	324448	324449	324450
3411	AZA1	mg/kg WMB	<0.01	<0.01	<0.01	<0.01
	AZA2	mg/kg WMB	<0.01	<0.01	<0.01	<0.01
	AZA3	mg/kg WMB	<0.01	<0.01	<0.01	<0.01
	Domoic Acid	mg/kg WMB	<0.05	<0.05	<0.05	<0.05
	DTX1 Free	mg/kg WMB	<0.01	<0.01	<0.01	<0.01
	DTX1 Total	mg/kg WMB	<0.01	<0.01	<0.01	<0.01
	DTX2 Free	mg/kg WMB	<0.01	<0.01	<0.01	<0.01
	DTX2 Total	mg/kg WMB	<0.01	<0.01	<0.01	<0.01
	GYM	mg/kg WMB	<0.01	<0.01	<0.01	<0.01
	Homo-YTX	mg/kg WMB	<0.02	<0.02	<0.02	<0.02
	OA Free	mg/kg WMB	<0.01	<0.01	<0.01	<0.01
	OA Total	mg/kg WMB	<0.01	<0.01	<0.01	<0.01
	PnTx-G	mg/kg WMB	<0.01	<0.01	<0.01	<0.01
	PTX2	mg/kg WMB	<0.01	<0.01	<0.01	<0.01
	SPX1	mg/kg WMB	<0.01	<0.01	<0.01	<0.01
	Total DST	OA eq. mg/kg	<0.01	<0.01	<0.01	<0.01
	YTX	mg/kg WMB	<0.01	<0.01	<0.01	<0.01
3411A	Brevetoxin 2	mg/kg WMB	<0.01*	<0.01*	<0.01*	<0.01*
	Brevetoxin 3	mg/kg WMB	<0.01*	<0.01*	<0.01*	<0.01*
3416	C1	STX.2HCl eq. mg/kg	<0.01	<0.01	<0.01	<0.01
	C2	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02	<0.02
	C3	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02	<0.02
	C4	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02	<0.02
	dcGTX1	STX.2HCl eq. mg/kg	<0.02*	<0.02*	<0.02*	<0.02*
	dcGTX2	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02	<0.02
	dcGTX3	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02	<0.02
	dcGTX4	STX.2HCl eq. mg/kg	<0.02*	<0.02*	<0.02*	<0.02*
dcNEO	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02	<0.02	

* NATA accreditation does not cover this result

Chemistry Test Results (Biota - Food)			Sample Description				
			Sampled Date/ Time	Lung	Kidney	Liver	Brain
				30/06/25 0:00	30/06/25 0:00	30/06/25 0:00	30/06/25 0:00
Method ID	Analyte	Units		324447	324448	324449	324450
3416	dcSTX	STX.2HCl eq. mg/kg		<0.01	<0.01	<0.01	<0.01
	doSTX	STX.2HCl eq. mg/kg		<0.01*	<0.01*	<0.01*	<0.01*
	GTX1	STX.2HCl eq. mg/kg		<0.01	<0.01	<0.01	<0.01
	GTX2	STX.2HCl eq. mg/kg		<0.01	<0.01	<0.01	<0.01
	GTX3	STX.2HCl eq. mg/kg		<0.01	<0.01	<0.01	<0.01
	GTX4	STX.2HCl eq. mg/kg		<0.01	<0.01	<0.01	<0.01
	GTX5	STX.2HCl eq. mg/kg		<0.02	<0.02	<0.02	<0.02
	GTX6	STX.2HCl eq. mg/kg		<0.02	<0.02	<0.02	<0.02
	NEO	STX.2HCl eq. mg/kg		<0.02	<0.02	<0.02	<0.02
	STX	STX.2HCl eq. mg/kg		<0.01	<0.01	<0.01	<0.01
	Total PST	STX.2HCl eq. mg/kg		<0.10	<0.10	<0.10	<0.10

* NATA accreditation does not cover this result