Algal bloom wildlife post-mortem report

Government of South Australia
Department for Environment and Water

Species - Little penguin

Date collected – 21 June 2025

Location - The Bluff, Victor Harbor

History relating to the animal

An adult little penguin (*Eudyptula minor*) was found on a pole at The Bluff, Victor Harbor on 21 June 2025. It appeared as if a member of the public had placed the animal in this position.

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 animal showed moderate effects from post-mortem decomposition. There were no other remarkable findings. There was fish material present in the proventriculus (the top part of a bird's stomach). No cause of death could be determined.

Tissues were collected to test for avian influenza and Newcastle disease, 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.

Histopathology

Samples from every major body system were examined under the microscope. The liver contained areas of inflammation and areas that were necrotic (tissue dying off). In the lung there was some hyperaemia (increased red colouring due to increased blood flow). The gastrointestinal tract, kidney and pancreas were quite autolysed (decomposing).

The changes in the lung were thought to be a normal part of the dying process, but the changes in the liver were thought to contribute toward the animal being unwell.

Culture

There was a light growth of mixed organisms (e.g. bacteria), but anaerobes (those bacteria that do not need an oxygenated environment),including *Salmonella* species, *Listeria* species and *Yersinia* species, were not isolated.

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.

Newcastle disease

Results were negative.

Summary

There was mild, multifocal (mild, in multiple places) medium- to long-term inflammation in the liver, which contributed to this animal's illness. Laboratory testing for avian influenza and Newcastle disease was negative and there was no evidence of the presence of brevetoxins or other algal biotoxins.

Outlook

PATH RESULTS: PENGUIN LITTLE, (Wi) [redacted]

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

[redacted]

Tested on 25/06/25
Reported on 13/08/25 17:30
Referred on 21/06/25 **by:**
[redacted]

[redacted]

Owner:
PENGUIN LITTLE
THE BLUFF
VICTOR HARBOR 5211

Animal/s:
Wild Birds

DOB: N/A

Collected: 21/06/25 11:00 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

SUMMARY DIAGNOSIS
Liver: Mild, multifocal, subacute to chronic, necrotizing, hepatitis

COMMENTS
The hepatitis contributed to morbidity.

[redacted]
Specialist Veterinary Anatomic Pathologist
[redacted]

Validated by [redacted].

[redacted]

Tested on 25/06/25
Reported on 13/08/25 17:30
Referred on 21/06/25 **by:**

DEPT OF ENV WATER & NATURAL RE
[redacted]

[redacted]

Owner:
PENGUIN LITTLE
THE BLUFF
VICTOR HARBOR 5211

Animal/s:
Wild Birds

DOB: N/A

Collected: 21/06/25 11:00 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

HISTOPATHOLOGY FROM NECROPSY

REF: [redacted]
CLINICAL HISTORY
Was found at the Bluff at Victor Harbor

MACROSCOPY
Cassettes A-D contain liver, kidney, spleen, heart, lung, brain, pro ventriculus, duodenum, caecum, ileum, pancreas, air sacs; Ae GK

MICROSCOPY
Liver: Multifocally and randomly around portal areas and extending into the mid zonal regions hepatocytes are effaced and replaced by low to moderate numbers of lymphocytes plasma cells and few macrophages. (Mild, multifocal, subacute to chronic, necrotising, lymphocytic, plasmacytic, histiocytic hepatitis)

Lung: There is diffuse hyperaemia / congestion. (Pulmonary hyperaemia / congestion)

There is moderate autolysis of alimentary sections, kidney and pancreas.

Those tissues not described are unremarkable.

DIAGNOSIS
Liver: Mild, multifocal, subacute to chronic, necrotising, lymphocytic, plasmacytic, histiocytic hepatitis

Lung: Pulmonary hyperaemia / congestion

COMMENTS
The hepatitis contributed to morbidity. Please contact the laboratory

within the next 5 working days if microbiological culture is required.

The pulmonary hyperaemia / congestion is likely an agonal change.

[redacted]

Specialist Veterinary Anatomic Pathologist

[redacted]

[redacted]

Tested on 25/06/25
Reported on 13/08/25 17:30
Referred on 21/06/25 **by:**

DEPT OF ENV WATER & NATURAL RE
[redacted]

[redacted]

Owner:
PENGUIN LITTLE
THE BLUFF
VICTOR HARBOR 5211

Animal/s:
Wild Birds

DOB: N/A

Collected: 21/06/25 11:00 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete
Validated by [redacted].

NECROPSY REPORT

CLINICAL HISTORY
Please refer to the clinical history on the request form and the clinical notes sent with the request form. This is a transcription of the history;
Fresh dead little penguin found at the Bluff , Victor Harbor, on a pole

SAMPLES SUBMITTED
One dead adult male little penguin, Eudyptula minor

NECROPSY FINDINGS
The bird is in good body condition and weighs 800g. There are moderate post mortem autolytic changes.

The proventriculus contains scant macerated fish.

GROSS SUMMARY
Unremarkable gross findings

SAMPLES COLLECTED & TESTING
Cloacal and tracheal swab in VTM will be tested by AI and NDV qPCR.
Formalin fixed tissue will be processed for histopathology.

Fresh liver, kidney, lung and brain are stored if biotoxin and brevetoxin testing is required.

COMMENTS
A cause of death is not concluded based on the gross findings.

[redacted]

[redacted]

Specialist Veterinary Anatomic Pathologist

[redacted]

Validated by [redacted]

Number of samples 5

[redacted]

Tested on 25/06/25
Reported on 13/08/25 17:30
Referred on 21/06/25 **by:**

DEPT OF ENV WATER & NATURAL RE
[redacted]

[redacted]

Owner:
PENGUIN LITTLE
THE BLUFF
VICTOR HARBOR 5211

Animal/s:
Wild Birds

DOB: N/A

Collected: 21/06/25 11:00 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

CASE MANAGEMENT DETAILS

Case Managed by:
Case Management Requested by:
Case Management Requested on:

[redacted]

Case Details: Little penguin found dead at Bluff jetty.

MOLECULAR DIAGNOSTICS

INFLUENZA A RNA PCR (REAL TIME REVERSE TRANSCRIPTASE)

Specimen type: Pooled trachea & cloaca swab

SPECIMEN ID	Type A	H5	H7
POOL	Not detected		

Validated by [redacted], Laboratory Scientist.

[redacted]

Tested on 25/06/25
Reported on 13/08/25 17:30
Referred on 21/06/25 **by:**

DEPT OF ENV WATER & NATURAL RE
[redacted]

[redacted]

Owner:
PENGUIN LITTLE
THE BLUFF
VICTOR HARBOR 5211

Animal/s:
Wild Birds

DOB: N/A

Collected: 21/06/25 11:00 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

MOLECULAR DIAGNOSTICS

NEWCASTLE DISEASE VIRUS RNA PCR (REAL TIME REVERSE TRANSCRIPTASE)

Specimen type: Pooled trachea & cloaca swab
Number of specimens: 1

SPECIMEN ID	F Gene	M Gene	L Gene
POOL	Not detected	Not detected	Not detected

Validated by [redacted], Laboratory Scientist.

Outlook

PATH RESULTS: PENGUIN LITTLE, (Wi) [redacted]

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

[redacted]

Tested on 11/07/25
Reported on 13/08/25 17:30
Referred on 21/06/25 **by:**

E

[redacted]

[redacted]

Owner:
PENGUIN LITTLE
THE BLUFF
VICTOR HARBOR 5211

Animal/s:
Wild Birds

DOB: N/A

Collected: 21/06/25 11:00 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

MICROBIOLOGY

SPECIMEN: Liver
ANIMAL ID:NO ID

MICROSCOPY
No bacteria seen.
A small number of leucocytes. Numerous epithelial cells.

CULTURE
1. Light growth of Mixed organisms

COMMENT: Anaerobes NOT isolated.
No Salmonella sp., Listeria sp. or Yersinia sp. isolated.

Final Report

16/07/25
Validated by [redacted] Laboratory Scientist.

Tasmanian Government

ANALYTICAL SERVICES TASMANIA

18 St Johns Avenue New Town 7008 TAS
03 6165 3300
enquiries@ast.tas.gov.au
www.analyticalservices.tas.gov.au

Submission Number: [redacted]
Report Number:
Issue Date: 28/07/2025
Status: Final

This report is a reissue, replacing report number: [redacted]
Reissue Reason: Finalised since last issue.

CERTIFICATE OF ANALYSIS

Customer: [redacted]
Address:

Submission Description: Biotoxin and brevetoxin testing in penguins [redacted]
Sample Received Date: 16/07/2025
Contract Number:
Client Order Number: [redacted]
Program/Quote Reference: [redacted] - Biotoxin and brevetoxin testing in penguins

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*	*Name*	*Position*
[redacted]	**Chemist**	[redacted]	**Section Head - Organic Chemistry**

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

Sample Comments

Sample Number: [redacted]

3411 Lipophilic Toxins in Shellfish by LC-MS/MS
IS - Insufficient Sample

3416 PST in Biota by LC-MS/MS (Boundy Method)
IS - Insufficient Sample

IS- Insufficient Sample
* NATA accreditation does not cover this result

Chemistry Test Results (Biota - Food)

		Sample Description	[redacted] Kidney	[redacted] Liver	[redacted] Lung	[redacted] Brain
		Sampled Date/ Time	26/06/25 0:00	26/06/25 0:00	26/06/25 0:00	26/06/25 0:00
Method ID	Analyte	Units	324439	324440	324441	324442
	AZA1	mg/kg WMB	<0.01*	<0.01*	<0.01*	*IS*
	AZA2	mg/kg WMB	<0.01*	<0.01*	<0.01*	*IS*
	AZA3	mg/kg WMB	<0.01*	<0.01*	<0.01*	*IS*
	Domoic Acid	mg/kg WMB	<0.05*	<0.05*	<0.05*	*IS*
	DTX1 Free	mg/kg WMB	<0.01*	<0.01*	<0.01*	*IS*
	DTX1 Total	mg/kg WMB	<0.01*	<0.01*	<0.01*	*IS*
	DTX2 Free	mg/kg WMB	<0.01*	<0.01*	<0.01*	*IS*
	DTX2 Total	mg/kg WMB	<0.01*	<0.01*	<0.01*	*IS*
3411	GYM	mg/kg WMB	<0.01*	<0.01*	<0.01*	*IS*
	Homo-YTX	mg/kg WMB	<0.02*	<0.02*	<0.02*	*IS*
	OA Free	mg/kg WMB	<0.01*	<0.01*	<0.01*	*IS*
	OA Total	mg/kg WMB	<0.01*	<0.01*	<0.01*	*IS*
	PnTx-G	mg/kg WMB	<0.01*	<0.01*	<0.01*	*IS*
	PTX2	mg/kg WMB	<0.01*	<0.01*	<0.01*	*IS*
	SPX1	mg/kg WMB	<0.01*	<0.01*	<0.01*	*IS*
	Total DST	OA eq. mg/kg	<0.01*	<0.01*	<0.01*	*IS*
	YTX	mg/kg WMB	<0.01*	<0.01*	<0.01*	*IS*
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*
	C1	STX.2HCl eq. mg/kg	<0.01*	<0.01*	<0.01*	*IS*
	C2	STX.2HCl eq. mg/kg	<0.02*	<0.02*	<0.02*	*IS*
	C3	STX.2HCl eq. mg/kg	<0.02*	<0.02*	<0.02*	*IS*
	C4	STX.2HCl eq. mg/kg	<0.02*	<0.02*	<0.02*	*IS*
3416	dcGTX1	STX.2HCl eq. mg/kg	<0.02*	<0.02*	<0.02*	*IS*
	dcGTX2	STX.2HCl eq. mg/kg	<0.02*	<0.02*	<0.02*	*IS*
	dcGTX3	STX.2HCl eq. mg/kg	<0.02*	<0.02*	<0.02*	*IS*
	dcGTX4	STX.2HCl eq. mg/kg	<0.02*	<0.02*	<0.02*	*IS*
	dcNEO	STX.2HCl eq. mg/kg	<0.02*	<0.02*	<0.02*	*IS*

IS- Insufficient Sample
* NATA accreditation does not cover this result

Chemistry Test Results (Biota - Food)

		Sample Description	[redacted] Kidney	[redacted] Liver	[redacted] Lung	[redacted] Brain
		Sampled Date/ Time	26/06/25 0:00	26/06/25 0:00	26/06/25 0:00	26/06/25 0:00
Method ID	Analyte	Units	324439	324440	324441	324442
	dcSTX	STX.2HCl eq. mg/kg	<0.01*	<0.01*	<0.01*	*IS*
	doSTX	STX.2HCl eq. mg/kg	<0.01*	<0.01*	<0.01*	*IS*
	GTX1	STX.2HCl eq. mg/kg	<0.01*	<0.01*	<0.01*	*IS*
	GTX2	STX.2HCl eq. mg/kg	<0.01*	<0.01*	<0.01*	*IS*
	GTX3	STX.2HCl eq. mg/kg	<0.01*	<0.01*	<0.01*	*IS*
3416	GTX4	STX.2HCl eq. mg/kg	<0.01*	<0.01*	<0.01*	*IS*
	GTX5	STX.2HCl eq. mg/kg	<0.02*	<0.02*	<0.02*	*IS*
	GTX6	STX.2HCl eq. mg/kg	<0.02*	<0.02*	<0.02*	*IS*
	NEO	STX.2HCl eq. mg/kg	<0.02*	<0.02*	<0.02*	*IS*
	STX	STX.2HCl eq. mg/kg	<0.01*	<0.01*	<0.01*	*IS*
	Total PST	STX.2HCl eq. mg/kg	<0.10*	<0.10*	<0.10*	*IS*

IS- Insufficient Sample
* NATA accreditation does not cover this result