

Algal bloom wildlife post-mortem report



Government
of South Australia

Department for
Environment and Water

Species – Little penguin

Date collected – 12 March 2026

Location – Goolwa Beach

History relating to the animal

One adult little penguin (*Eudyptula minor*) was found dead at Goolwa Beach on 12 March 2026.

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 was in poor body condition and weighed 900 g with marked atrophy (wasting) of the pectoral (chest) muscles. There was marked post-mortem autolytic changes (decomposing after death).

Due to the level of decomposition, only a few organs were intact and sampled. Available tissues were collected for histopathology (looking at tissues under the microscope for more detailed information), and testing for avian influenza, Newcastle disease, brevetoxins and other algal biotoxins (a possibility due to the algal bloom).

Histopathology

There was marked autolytic (decomposition) changes in all organs, and the level of decomposition allowed for only the intact organs to be examined. Ascarid roundworm eggs (gut parasites) were found in the small intestine. The other organs were unremarkable (no evidence of disease processes).

Virology

Polymerase chain reaction (PCR) testing for avian influenza and Newcastle disease was negative.

Brevetoxins

No samples were above the limits of reporting.

Other algal biotoxins

Due to the level of decomposition, there were insufficient samples available for testing.

Algal bloom wildlife post-mortem report



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Summary

One adult little penguin was found dead. Laboratory examination revealed long-term weight loss, which contributed to morbidity (illness). The bird was already quite decomposed, which limited investigation for the cause of weight loss and death. It is suspected that poor nutrition contributed to the animal's weakened condition, possibly due to reduced food availability in the environment, although this could not be confirmed. Testing for avian influenza and Newcastle disease was negative. Brevetoxins were also not detected. Due to the level of decomposition, there were insufficient samples available for biotoxin testing.

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

From [REDACTED]

Date Fri 13/03/2026 2:00 PM

To [REDACTED]

[REDACTED]

Tested on 12/03/26
Reported on 13/03/26 14:30
Referred on 12/03/26 **by:** [REDACTED]

[REDACTED]

Owner:
PENGUIN LITTLE

Animal/s:
Wild Birds

GOOLWA BEACH 5214

DOB: N/A

Collected: 12/03/26 16:00

Subm.No: [REDACTED]

Lab No.: [REDACTED]

Samples tested as received

NECROPSY REPORT

CLINICAL HISTORY

This is a summary of the clinical history from the request form. Please refer to the request form for the full clinical history.
12 dead birds were collected from Goolwa Beach on 12/3/2026. The birds included 9 x cormorants, 1 penguin, 2 unidentified species.
Approximately half the birds were on the beach for up to 5 days and the other 5 washed up today.

SAMPLES SUBMITTED

1 x dead little penguin, Eudyptula minor

NECROPSY FINDINGS

There are marked post mortem autolytic changes. The bird is in poor body condition and weighs 900g. There is marked atrophy of the pectoral muscles.

GROSS SUMMARY

Chronic weight loss

SAMPLES COLLECTED & TESTING

There were very few intact organs which could be sampled.

Formalin fixed kidney and lung will be processed for histopathology.

Tracheal and cloacal swabs in VTM will be tested for AI and NDV by PCR.

A quote will be requested from Analytical Services Tasmania for biotoxin and brevetoxin testing of lung and kidney. The quote will be forwarded to [REDACTED]

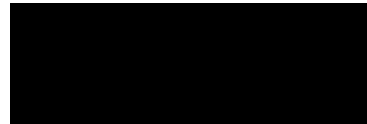
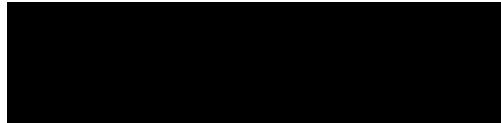
COMMENTS

Chronic weight loss contributed to morbidity for the bird. There are no findings to confirm the cause of death. Could decreased feed abundance due to the variable *Karenia* sp. algal bloom have contributed to the bird's weight loss ?

[REDACTED]



Tested on 12/03/26
Reported on 13/03/26 14:30
Referred on 12/03/26 by:



Owner:
PENGUIN LITTLE

Animal/s:
Wild Birds

GOOLWA BEACH 5214

DOB: N/A

Collected: 12/03/26 16:00

Subm.No:



Lab No.:



Samples tested as received

Specialist Veterinary Anatomic Pathologist



Validated by



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[REDACTED]

Tested on 12/03/26
Reported on 20/03/26 16:30
Referred on 12/03/26 **by:** [REDACTED]

[REDACTED]

Owner:
PENGUIN LITTLE

Animal/s:
Wild Birds

GOOLWA BEACH 5214

DOB: N/A

Collected: 12/03/26 16:00

Subm.No: [REDACTED]

Lab No.: [REDACTED]

Samples tested as received

HISTOPATHOLOGY

REF: [REDACTED]

CLINICAL HISTORY

This is a summary of the clinical history from the request form. Please refer to the request form for the full clinical history.

12 dead birds were collected from Goolwa Beach on 12/3/2026. The birds included 9 x cormorants, 1 penguin, 2 unidentified species.

Approximately half the birds were on the beach for up to 5 days and the other 5 washed up today.

MACROSCOPY

One pot labelled [REDACTED] and organs listed below

A = trachea, lung, kidney and jejunum

B = proventriculus and ventriculus

Ed

These were the only organs that could be found in the autolysed body.

MICROSCOPY

There are marked autolytic changes in all organs. Aside from this artifact the following finding is described.

Jejunum: There are ascarid ova in the intestines.

The other organs are unremarkable.

DIAGNOSIS

Please refer to comments

COMMENTS

The presence of ascarid ova is a normal finding in little penguins. The cause of chronic weight loss and death are not found.

[REDACTED]
Specialist Veterinary Anatomic Pathologist
[REDACTED]

Validated by [REDACTED]

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

From [REDACTED]

Date Fri 13/03/2026 3:30 PM

To [REDACTED]

[REDACTED]

Tested on 12/03/26
Reported on 13/03/26 16:00
Referred on 12/03/26 **by:**

[REDACTED]

[REDACTED]

Owner:

PENGUIN LITTLE

GOOLWA BEACH 5214

Animal/s:

Wild Birds

DOB: N/A

Collected: 12/03/26 16:00

Subm.No: [REDACTED]

Lab No.: [REDACTED]

Samples tested as received

MOLECULAR DIAGNOSTICS

INFLUENZA A RNA PCR (REAL TIME REVERSE TRANSCRIPTASE)

Specimen type: Aggregated cloacal & tracheal swabs in VTM

SPECIMEN ID	Type A	H5	H7
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PENGUIN	Not detected		
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PATH RESULTS: PENGUIN LITTLE, (Wi) [REDACTED]

From [REDACTED]

Date Fri 13/03/2026 4:00 PM

To [REDACTED]

[REDACTED]

Tested on 12/03/26
Reported on 13/03/26 16:30
Referred on 12/03/26 **by:** [REDACTED]

[REDACTED]

Owner:
PENGUIN LITTLE

Animal/s:
Wild Birds

GOOLWA BEACH 5214

DOB: N/A

Collected: 12/03/26 16:00

Subm.No: [REDACTED]

Lab No.: [REDACTED]

Samples tested as received

MOLECULAR DIAGNOSTICS

NEWCASTLE DISEASE VIRUS RNA PCR (REAL TIME REVERSE TRANSCRIPTASE)

Specimen type: Aggregated cloacal Number of specimens: 1
& tracheal swabs in VTM

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

Validated by [REDACTED] Laboratory Scientist.

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

From [REDACTED]

Date Fri 20/03/2026 4:00 PM

To [REDACTED]

[REDACTED]

Tested on 12/03/26
Reported on 20/03/26 16:30
Referred on 12/03/26 **by:** [REDACTED]

[REDACTED]

Owner:
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Animal/s:
Wild Birds

GOOLWA BEACH 5214

DOB: N/A

Collected: 12/03/26 16:00

Subm.No: [REDACTED]

Lab No.: [REDACTED]

Samples tested as received

SUMMARY DIAGNOSIS

No diagnosis is concluded

SUMMARY COMMENTS

The marked autolytic changes have limited investigation for the cause of weight loss and death.

Samples will be sent for biotoxin testing at AST as you have requested.

AI and NDV are excluded as causes of death.

[REDACTED]

Specialist Veterinary Anatomic Pathologist
[REDACTED]

Validated by [REDACTED]

CERTIFICATE OF ANALYSIS

Customer:

Address:

Contact:

Submission Description:

Sample Received Date:

Contract Number:

Client Order Number:

Program/Quote Reference:

Avian

30/04/2026

Biotoxin and Brevotoxins

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

Section Head - Organic
Chemistry

Test Information:

Method ID

Test Description

Date Commenced:

3411

Lipophilic Toxins in Shellfish by LC-MS/MS

N/A

3411A

Brevetoxins in Shellfish by LC-MS/MS

22-05-2026

3416

PST in Biota by LC-MS/MS (Boundy Method)

N/A

Chemistry Test Results (Biota - Food)			Kidney	Lung
Sample Description				
Sampled Date/ Time			12/03/26 0:00	12/03/26 0:00
Method ID	Analyte	Units	465574	465575
3411	AZA1	mg/kg WMB	*IS*	*IS*
	AZA2	mg/kg WMB	*IS*	*IS*
	AZA3	mg/kg WMB	*IS*	*IS*
	Domoic Acid	mg/kg WMB	*IS*	*IS*
	DTX1 Free	mg/kg WMB	*IS*	*IS*
	DTX1 Total	mg/kg WMB	*IS*	*IS*
	DTX2 Free	mg/kg WMB	*IS*	*IS*
	DTX2 Total	mg/kg WMB	*IS*	*IS*
	GYM	mg/kg WMB	*IS*	*IS*
	Homo-YTX	mg/kg WMB	*IS*	*IS*
	OA Free	mg/kg WMB	*IS*	*IS*
	OA Total	mg/kg WMB	*IS*	*IS*
	PnTx-G	mg/kg WMB	*IS*	*IS*
	PTX2	mg/kg WMB	*IS*	*IS*
	SPX1	mg/kg WMB	*IS*	*IS*
	Total DST	OA eq. mg/kg	*IS*	*IS*
	YTX	mg/kg WMB	*IS*	*IS*
3411A	Brevetoxin 1	mg/kg WMB	<0.10*	<0.10*
	Brevetoxin 2	mg/kg WMB	<0.02*	<0.02*
	Brevetoxin 3	mg/kg WMB	<0.02*	<0.02*
3416	C1	STX.2HCl eq. mg/kg	*IS*	*IS*
	C2	STX.2HCl eq. mg/kg	*IS*	*IS*
	C3	STX.2HCl eq. mg/kg	*IS*	*IS*
	C4	STX.2HCl eq. mg/kg	*IS*	*IS*
	dcGTX1	STX.2HCl eq. mg/kg	*IS*	*IS*
	dcGTX2	STX.2HCl eq. mg/kg	*IS*	*IS*
	dcGTX3	STX.2HCl eq. mg/kg	*IS*	*IS*

IS- Insufficient Sample

* NATA accreditation does not cover this result



Chemistry Test Results (Biota - Food)			Kidney	Lung
Sample Description				
Sampled Date/ Time			12/03/26 0:00	12/03/26 0:00
Method ID	Analyte	Units	465574	465575
3416	dcGTX4	STX.2HCl eq. mg/kg	*IS*	*IS*
	dcNEO	STX.2HCl eq. mg/kg	*IS*	*IS*
	dcSTX	STX.2HCl eq. mg/kg	*IS*	*IS*
	doSTX	STX.2HCl eq. mg/kg	*IS*	*IS*
	GTX1	STX.2HCl eq. mg/kg	*IS*	*IS*
	GTX2	STX.2HCl eq. mg/kg	*IS*	*IS*
	GTX3	STX.2HCl eq. mg/kg	*IS*	*IS*
	GTX4	STX.2HCl eq. mg/kg	*IS*	*IS*
	GTX5	STX.2HCl eq. mg/kg	*IS*	*IS*
	GTX6	STX.2HCl eq. mg/kg	*IS*	*IS*
	NEO	STX.2HCl eq. mg/kg	*IS*	*IS*
	STX	STX.2HCl eq. mg/kg	*IS*	*IS*
Total PST		STX.2HCl eq. mg/kg	*IS*	*IS*

IS- Insufficient Sample

* NATA accreditation does not cover this result