

Algal bloom wildlife post-mortem report



Government
of South Australia

Department for
Environment and Water

Species – Long-nosed fur seal

Date collected – 13 February 2026

Location – Beacon 19 Boat Ramp, Goolwa South

History relating to the animal

An adult male long-nosed fur seal (*Arctocephalus forsteri*) was found very underweight and unwell at the Beacon 19 Boat Ramp, Goolwa South on 13 February 2026 and was subsequently euthanised.

Clinical examination

The seal appeared emaciated (very underweight) and unwell before it was euthanised.

Necropsy

The necropsy (looking at the whole body) revealed that the animal was in moderate body condition, weighed 53 kg and measured 1.5 m in length with a body circumference caudal (to the rear) to the pectoral (chest) flippers of 730 mm. The animal had minimal blubber (fat under the skin). There was mild to moderate post-mortem autolytic changes (decomposition after death).

There was a 2 x 3 cm subcutaneous (under the skin) abscess at the ventral (underside) abdominal midline (middle line dividing the body into halves). There was scant mucoid ingesta (mucus and food material) and moderate numbers of ascarids (gut parasites) in the stomach. There was scant brown pasty ingesta in the intestines, well-formed faeces in the rectum and no urine in the bladder.

Tissues were collected for histopathology (looking at tissues under the microscope for more detailed information), and testing for *Mycobacterium tuberculosis* (MTb) and *Mycobacterium avium* (*M. avium*) complex organisms, *Brucella* species bacteria, and brevetoxins and other algal biotoxins (a possibility due to the algal bloom).

Histopathology

Samples from every major body system were examined under the microscope. Examination of kidney samples revealed a mild, multifocal (multiple areas), chronic (long-term), lymphocytic, plasmacytic (accumulation of these types of immune cells) interstitial nephritis (inflammation of the kidney).

Polymerase chain reaction (PCR) testing for MTb and *M. avium* complex organisms, and *Brucella* species bacteria was negative.

Brevetoxins

No samples were above the limits of reporting.

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Other algal biotoxins

No samples were above the limits of reporting.

Summary

An adult male long-nosed fur seal was found severely underweight and unwell and was euthanised. Laboratory examination could not determine the cause of the severe weight loss. The seal has gut parasites, an abscess under the skin and mild inflammation of the kidneys, which were all considered insignificant findings. 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 tuberculosis (*Mycobacterium tuberculosis* and *Mycobacterium avium* complex organisms) and brucellosis (*Brucella* species bacteria) was negative. Brevetoxins and other algal biotoxins were also not detected.

PATH RESULTS: LONG NOSE FUR SEAL, (Ma) [REDACTED]

From [REDACTED]

Date Sat 14/02/2026 5:00 PM

To [REDACTED]

[REDACTED]

Tested on 13/02/26
Reported on 14/02/26 17:30
Referred on 13/02/26 **by:** [REDACTED]

[REDACTED]

Owner:

LONG NOSE FUR SEAL
BEACON 19 BOAT RAMP
GOOLWA SOUTH 5214

Animal/s:

Marine Mammal

DOB: N/A

Collected: 13/02/26 14:15

Subm.No: [REDACTED]

Lab No.: [REDACTED]

Samples tested as received

NECROPSY REPORT

CLINICAL HISTORY

Summary of the clinical history from the request form. Please refer to the request form for the full clinical history.

The first seal was first reported by MOP, as looking sick and emaciated at 11:15am on 13/2/2026 at Beacon 19 boat ramp at Goolwa South by the jetty.

The animal was culled [REDACTED] by DEW because a veterinarian was not available to euthanize the animal.

SAMPLES SUBMITTED

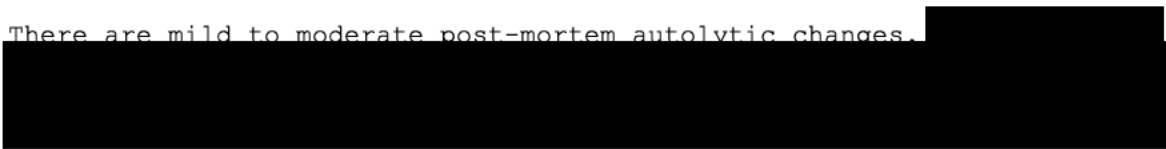
One dead adult male long nosed fur seal, *Arctocephalus forsteri*

NECROPSY FINDINGS

The animal is in moderate body condition and weighs 53 kg. The animal has minimal blubber. The animal is approximately 1.5m long and the circumference around the body just caudal to the pectoral flippers is

730mm.

There are mild to moderate post-mortem autolytic changes.



There is a 2 x 3cm subcutaneous abscess on the ventral abdominal midline.

There is scant mucoid ingesta and moderate numbers of ascarid's within the stomach. There is scant brown pasty ingesta in the intestines, well formed faeces in the rectum and no urine in the bladder.

GROSS SUMMARY

Chronic weight loss
Subcutaneous abscess

SAMPLES COLLECTED & TESTING

Formalin fixed tissue will be processed for histopathology.

Analytical services will be contacted and a quote requested for biotoxin and brevetoxin testing on urine, faeces, stomach content, liver, kidney,

[REDACTED]

Tested on 13/02/26
Reported on 14/02/26 17:30
Referred on 13/02/26 **by:** [REDACTED]

[REDACTED]

Owner:
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BEACON 19 BOAT RAMP
GOOLWA SOUTH 5214

Animal/s:
Marine Mammal

DOB: N/A

Collected: 13/02/26 14:15 **Subm.No:** [REDACTED] **Lab No.:** [REDACTED]

Samples tested as received

spleen, heart, lung, brain. This quote will be emailed to you.

Brain and lung will be sent to ACDP for Mycobacterium sp. and Brucella sp. PCR testing.

Liver, kidney, spleen, heart, lung, brain and oropharyngeal swab in transport medium are stored.

COMMENTS

The cause for the chronic weight loss is not evident based on gross findings. Could decrease in feed abundance due to Karenia sp. algal blooms have contributed to the weight loss ?

Subcutaneous abscess is an incidental finding.

Gastric ascarids (e.g. Contracaecum sp. and Anisakis sp.) are normal findings in long nosed fur seals.

[REDACTED]

Specialist Veterinary Anatomic Pathologist
[REDACTED]

Validated by [REDACTED]

PATH RESULTS: LONG NOSE FUR SEAL, (Ma) [REDACTED]

From [REDACTED]

Date Sat 21/02/2026 6:30 PM

To [REDACTED]

[REDACTED]

Tested on 13/02/26
Reported on 21/02/26 19:00
Referred on 13/02/26 **by:** [REDACTED]

[REDACTED]

Owner:

LONG NOSE FUR SEAL
BEACON 19 BOAT RAMP
GOOLWA SOUTH 5214

Animal/s:

Marine Mammal

DOB: N/A

Collected: 13/02/26 14:15

Subm.No: [REDACTED]

Lab No.: [REDACTED]

Samples tested as received

HISTOPATHOLOGY FROM NECROPSY

REF: [REDACTED]

CLINICAL HISTORY

Summary of the clinical history from the request form. Please refer to the request form for the full clinical history.

The first seal was first reported by MOP, as looking sick and emaciated at 11:15am on 13/2/2026 at Beacon 19 boat ramp at Goolwa South by the jetty.

The animal was culled [REDACTED] by DEW because a veterinarian was not available to euthanize the animal.

SAMPLE SUBMITTED

One dead adult male long nosed fur seal, *Arctocephalus forsteri*

MACROSCOPY

Slides contain the following tissues:

A: Liver, kidney, spleen, adrenal gland

B: Lung, heart

C-D: Stomach, duodenum, jejunum, pancreas, ileum, caecum, colon

Brain

E: Medulla, cerebellum
F: Hippocampus and thalamus
G: Parietal cortex
H: Frontal cortex
I: Basal ganglia
J: Occipital cortex; Ae GK

MICROSCOPY

Kidney: Multifocally there are low numbers of lymphocytes and plasma cells within the cortical interstitium. (Mild, multifocal, chronic, lymphocytic, plasmacytic interstitial nephritis)

Brain:

Those tissues not described appear histologically normal.

DIAGNOSIS

Subcutaneous abscess

[REDACTED]

Tested on 13/02/26
Reported on 21/02/26 19:00
Referred on 13/02/26 **by:** [REDACTED]

[REDACTED]

Owner:
LONG NOSE FUR SEAL
BEACON 19 BOAT RAMP
GOOLWA SOUTH 5214

Animal/s:
Marine Mammal

DOB: N/A

Collected: 13/02/26 14:15

Subm.No: [REDACTED]

Lab No.: [REDACTED]

Samples tested as received

Kidney: Mild, multifocal, chronic, lymphocytic, plasmacytic interstitial nephritis

COMMENTS

There are no conclusive gross or histopathological findings to explain the cause of chronic weight loss of morbidity. The subcutaneous abscess and the mild interstitial nephritis (likely due to historic bacteraemia) are in significant findings.

[REDACTED]

Specialist Veterinary Anatomic Pathologist
[REDACTED]

Validated by [REDACTED]

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PATH RESULTS: LONG NOSE FUR SEAL, (Ma) [REDACTED]

From [REDACTED]

Date Tue 24/02/2026 1:00 PM

To [REDACTED]

[REDACTED]

Tested on 13/02/26
Reported on 24/02/26 13:30
Referred on 13/02/26 **by:** [REDACTED]

[REDACTED]

Owner:

LONG NOSE FUR SEAL
BEACON 19 BOAT RAMP
GOOLWA SOUTH 5214

Animal/s:

Marine Mammal

DOB: N/A

Collected: 13/02/26 14:15 **Subm.No:** [REDACTED]

Lab No.: [REDACTED]

Samples tested as received

REFERRED TEST

Disease/Test : Brucella sp. PCR

Specimen Type: Brain & Lung

RESULT : Both samples Negative

Comment : NATA/RCPA accreditation does not cover the performance of this service

This test was performed by: Australian Centre for Disease Preparedness
(CSIRO)
NATA accreditation number: 13546

Validated by [REDACTED] Laboratory Scientist.

REFERRED TEST

Disease/Test : Pan-Mycobacterium Taqman Assay

Specimen Type: Brain & Lung

RESULT : Both samples Negative

Comment : NATA/RCPA accreditation does not cover the performance of
this service

This test was performed by: Australian Centre for Disease Preparedness
(CSIRO)
NATA accreditation number: 13546

Validated by [REDACTED] Laboratory Scientist.

[REDACTED]

Tested on 13/02/26
Reported on 24/02/26 13:30
Referred on 13/02/26 **by:** [REDACTED]

[REDACTED]

Owner:
LONG NOSE FUR SEAL
BEACON 19 BOAT RAMP
GOOLWA SOUTH 5214

Animal/s:
Marine Mammal

DOB: N/A

Collected: 13/02/26 14:15 **Subm.No:** [REDACTED] **Lab No.:** [REDACTED]

Samples tested as received

REFERRED TEST

Disease/Test : Mycobacterium tuberculosis complex IS6110
Method : TaqMan Assay
Specimen Type: Brain & Lung

RESULT : Both samples Negative

Comment : NATA/RCPA accreditation does not cover the performance of this service

This test was performed by: Australian Centre for Disease Preparedness (CSIRO)
NATA accreditation number: 13546

Validated by [REDACTED] Laboratory Scientist.

REFERRED TEST

Disease/Test : Mycobacterium avium complex
Method : TaqMan Assay

Specimen Type: Brain & Lung

RESULT : Both samples Negative

Comment : NATA/RCPA accreditation does not cover the performance of
this service

This test was performed by: Australian Centre for Disease Preparedness
(CSIRO)
NATA accreditation number: 13546

Validated by [REDACTED] Laboratory Scientist.

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PATH RESULTS: LONG NOSE FUR SEAL, (Ma) [REDACTED]

From [REDACTED]

Date Mon 23/02/2026 6:30 PM

To [REDACTED]

[REDACTED]

Tested on 13/02/26
Reported on 23/02/26 19:00
Referred on 13/02/26 **by:** [REDACTED]

[REDACTED]

Owner:

LONG NOSE FUR SEAL
BEACON 19 BOAT RAMP
GOOLWA SOUTH 5214

Animal/s:

Marine Mammal

DOB: N/A

Collected: 13/02/26 14:15

Subm.No: [REDACTED]

Lab No.: [REDACTED]

Samples tested as received

SUMMARY DIAGNOSIS

No diagnosis is concluded

COMMENTS

There are no conclusive gross or histopathological findings to explain the cause of chronic weight loss of morbidity. The subcutaneous abscess and the mild interstitial nephritis (likely due to historic bacteraemia) are in significant findings.

You will be forwarded the quote for biotoxin and brevetoxin testing from Analytical Services Tasmania for approval.

[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:

Long-nosed Fur Seal

11/03/2026

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
3411A	Brevetoxins in Shellfish by LC-MS/MS
3416	PST in Biota by LC-MS/MS (Boundy Method)

11-05-2026
01-05-2026
12-05-2026

Chemistry Test Results (Biota - Food)			BRAIN	LIVER	HEART	LUNG	KIDNEY	SPLEEN	FAECES	STOMACH CONTENT
Sample Description			13/02/26 0:00	13/02/26 0:00	13/02/26 0:00	13/02/26 0:00	13/02/26 0:00	13/02/26 0:00	13/02/26 0:00	13/02/26 0:00
Sampled Date/ Time			13/02/26 0:00	13/02/26 0:00	13/02/26 0:00	13/02/26 0:00	13/02/26 0:00	13/02/26 0:00	13/02/26 0:00	13/02/26 0:00
Method ID	Analyte	Units	440224	440225	440226	440227	440228	440229	440230	440231
3411	AZA1	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*
	AZA2	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*
	AZA3	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*
	Domoic Acid	mg/kg WMB	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	*IS*
	DTX1 Free	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*
	DTX1 Total	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*
	DTX2 Free	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*
	DTX2 Total	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*
	GYM	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*
	Homo-YTX	mg/kg WMB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	*IS*
	OA Free	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*
	OA Total	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*
	PnTx-G	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*
	PTX2	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*
	SPX1	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*
	Total DST	OA eq. mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*
	YTX	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*
3411A	Brevetoxin 1	mg/kg WMB	<0.10*	<0.10*	<0.10*	<0.10*	<0.10*	<0.10*	<0.10*	<0.10*
	Brevetoxin 2	mg/kg WMB	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*
	Brevetoxin 3	mg/kg WMB	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*
3416	C1	STX.2HCl eq. mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	C2	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	C3	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	C4	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	dcGTX1	STX.2HCl eq. mg/kg	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*
	dcGTX2	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	dcGTX3	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

IS- Insufficient Sample

* NATA accreditation does not cover this result



Chemistry Test Results (Biota - Food)			Sample Description	BRAIN	LIVER	HEART	LUNG	KIDNEY	SPLEEN	FAECES	STOMACH CONTENT
			Sampled Date/ Time	13/02/26 0:00	13/02/26 0:00	13/02/26 0:00	13/02/26 0:00	13/02/26 0:00	13/02/26 0:00	13/02/26 0:00	13/02/26 0:00
Method ID	Analyte	Units		440224	440225	440226	440227	440228	440229	440230	440231
3416	dcGTX4	STX.2HCl eq. mg/kg		<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*
	dcNEO	STX.2HCl eq. mg/kg		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	dcSTX	STX.2HCl eq. mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	doSTX	STX.2HCl eq. mg/kg		<0.01*	<0.01*	<0.01*	<0.01*	<0.01*	<0.01*	<0.01*	<0.01*
	GTX1	STX.2HCl eq. mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	GTX2	STX.2HCl eq. mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	GTX3	STX.2HCl eq. mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	GTX4	STX.2HCl eq. mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	GTX5	STX.2HCl eq. mg/kg		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	GTX6	STX.2HCl eq. mg/kg		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	NEO	STX.2HCl eq. mg/kg		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	STX	STX.2HCl eq. mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total PST			STX.2HCl eq. mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

IS- Insufficient Sample

* NATA accreditation does not cover this result