

Algal bloom wildlife post-mortem report



Species – Australian sea lion

Date collected – 25 October 2025

Location – Bales Beach, Kangaroo Island

History relating to the animal

A 3 year old female Australian sea lion (*Neophoca cinerea*) was found laying on her side and paddling her hind flippers at Bales Beach, Kangaroo Island on 24 October 2025. She died overnight and the carcass was collected for laboratory examination on the 25 October 2025.

Clinical examination

The animal was found displaying signs of neurological disease, including laying on her side unable to sit normally, paddling the hind flippers and arching of the neck.

Necropsy

The necropsy (looking at the whole body) revealed that the sea lion weighed 50kg, with minimal fat coverage. There was moderate post-mortem autolytic change (decomposing after death). There were a number of maggots on the face and in the mouth, the right eye was sunken, and the left eye was missing. There was a flat, oval, 5cm hairless lesion between the shoulder blades.

There were moderate amounts of off-white foam within the cranial trachea (part of the windpipe closest to the mouth) and the lungs contained multiple areas of light pink lesions, both of which were due to post-mortem change.

There were four smooth stones within the distal oesophagus (close to the stomach) and stomach, ranging in size from 4-6cm in length. The total weight of the stones was 2.73kg. The lining of the stomach was red in some areas, likely due to inflammation caused by the stones. There was no food/digesta within the stomach, small amounts of yellow-green fluid were in the intestines, and a small amount of dark green faeces was in the colon.

Samples were collected to test for avian influenza, *Cetacean morbillivirus*, and *Mycobacterium tuberculosis (MTb)* complex organisms. Tissues were collected for histopathology (looking at tissues under the microscope for more detailed information) and testing for brevetoxins and other algal biotoxins (a possibility due to the algal bloom). 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. Examination of the brain revealed a moderate, multifocal (multiple distinct regions), subacute (days to weeks), necrotising meningoencephalitis (inflammation and cell death in the brain and lining of the brain), with bacteria and immune cells present.

Algal bloom wildlife post-mortem report



There was a moderate, diffuse (throughout the tissue), acute (recent) pulmonary congestion/hyperaemia (increased blood within the lung tissues – likely associated with circulation problems), and mild acute pulmonary haemorrhage (bleeding within the lungs).

There was mild inflammation and cell death in the trachea (windpipe), liver, kidneys and fat surrounding the kidneys. There was evidence of ascarids (roundworms) within the jejunum (middle part of small intestines).

Bacteriology

Following the histopathology findings, the brain was cultured to try to identify the visible bacteria. A heavy growth of *Streptococcus phocae* and other unidentified mixed organisms were found on culture. Polymerase chain reaction (PCR) testing for *MTb* complex organisms were negative.

Virology

Testing results for avian influenza and *Cetacean morbillivirus* were negative.

Brevetoxins

No samples were above the limits of reporting.

Other algal biotoxins

No samples were above the limits of reporting.

Summary

A 3-year-old female Australian sea lion was found displaying signs of neurological disease and died overnight. Laboratory examination found a severe bacterial infection (*Streptococcus phocae*) in the brain, which would have contributed to the clinical signs and possibly the death of this animal.

Rocks were found in the stomach and are likely to be a normal finding; their role is unknown, but it is thought that they help with digestion.

Other findings were likely to have occurred at the time of death (lung congestion and bleeding) or were considered incidental (not contributing to illness), including inflammation of multiple tissues and worms in the gut.

Testing for avian influenza, tuberculosis (*Mycobacterium tuberculosis* complex organisms) and *Cetacean morbillivirus* was negative. Brevetoxins and other algal biotoxins were also not detected.

PATH RESULTS: AUSTRALIAN SEA LION, (Ma) [REDACTED]

From [REDACTED]

Date Wed 29/10/2025 8:30 AM

To [REDACTED]

[REDACTED]

Tested on 27/10/25
Reported on 29/10/25 09:00
Referred on 25/10/25 **by:**

[REDACTED]

[REDACTED]

Owner:
AUSTRALIAN SEA LION
BALES BEACH
KANGAROO ISLAND %

Animal/s:
Marine Mammal

DOB: N/A

Collected: 25/10/25 00:25 **Subm.No:** [REDACTED] **Lab No.:** [REDACTED]

Samples tested as received

AMENDED REPORT: Comments have been amended in this report. Please discard any previously issued report/s.

[REDACTED]

CLINICAL HISTORY

3.1 year old female Australia sea lion (based on PIT records from Seal Bay Research), observed laterally recumbent and paddling hand flippers on the sand at Bales Beach KI on 20251024. Collected by NPWS on 20251025. NPWS aiming to collect fresh faecal and urine samples to accompany carcass if collected.

SAMPLES SUBMITTED

One moderately autolysed, female entire, Australian Sealion
One swab in clear tube, unlabelled.

Length: 149cm

Weight: ~50kg

NECROPSY FINDINGS

The carcass is moderately autolysed. There is minimal fat coverage around the dorsum and ventrum.

The entire LEFT face is stained red from blood (post-mortem blood leakage) and covered with maggots.

The LEFT eye is missing. The RIGHT eye is sunken into its socket (post-mortem change).

The rostral half of the oral cavity and entire tongue is covered with maggots.

The brain is mildly liquefied.

One flat, oval, approximately 5cm length, non-inflamed and alopecic lesion is seen on the dorsal skin surface (approximately between scapula).

There is moderate amounts of off-white foam within the cranial trachea, close to the larynx (post-mortem change). The lungs contain multifocal, patchy areas of light pink lesions (post-mortem change).

4x smooth stones are found within the distal oesophagus and stomach. The stones are speckled, dark brown to black, oval with a smooth surface.

[REDACTED]

Tested on 27/10/25
Reported on 29/10/25 09:00
Referred on 25/10/25 **by:** [REDACTED]

[REDACTED]

Owner:
AUSTRALIAN SEA LION
BALES BEACH
KANGAROO ISLAND %

Animal/s:
Marine Mammal

DOB: N/A

Collected: 25/10/25 00:25

Subm.No: [REDACTED]

Lab No.: [REDACTED]

Samples tested as received

The stones range from 4cm to 6cm in length. The total weight of the stones is 2.73kg. Multifocally the stomach mucosa is red (likely inflammation, secondary to stones). There is no food/digesta within the stomach.

The peritoneum, caudal pole of liver, intestinal serosa is multifocally stained green (post-mortem change).
The intestine contains scant amounts of yellow-green fluid. There is scant amounts of soft dark green faeces within the colon.

The urinary bladder is empty. Both ovaries are approximately 2.5cm in length. On cut section, the RIGHT ovary appears to have a pink-tan, well demarcated, round lesion approximately 1.5cm diameter within the parenchyma that is not visible from the outside (most likely corpus luteum).

The organs not mentioned appear grossly normal: heart, pancreas, oesophagus, trachea, thyroid, spleen, kidney, adrenals, lymph nodes.

GROSS DIAGNOSIS

Open diagnosis
Presence of gastroliths
Moderate autolysis

SAMPLES COLLECTED & TESTING

Oropharyngeal swab in VTM - Hold at Molecular lab

Fresh tissues in yellow top pots: (liver, heart, lung, spleen, kidney,

brain, faeces) - stored at -80

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

'Rocks in stomach' and fixed tissues - Stored at room temperature.

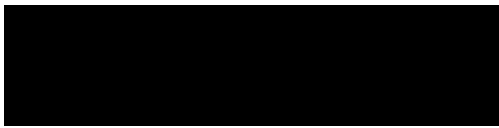
COMMENTS

The rocks found in the stomach (gastroliths) are likely to be a normal finding. The role of gastroliths in the stomach is unknown, but it is thought to help digestion.

Biotoxin testing and histology is underway. Please await results.



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Animal/s:
Marine Mammal

DOB: N/A

Collected: 25/10/25 00:25 **Subm.No:**  **Lab No.:** 

Samples tested as received

McIntosh RR, B, SD. (2006) Dietary analysis of regurgitates and stomach samples from free-living Australian sea lions. Wildlife Research 661-669.



Pathology Diagnostician

Validated by 

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PATH RESULTS: AUSTRALIAN SEA LION, (Ma) [REDACTED]

From [REDACTED]
Date Fri 07/11/2025 10:00 AM
To [REDACTED]

[REDACTED]

Tested on 27/10/25
Reported on 07/11/25 10:30
Referred on 25/10/25 **by:**

[REDACTED]

[REDACTED]

Owner:
AUSTRALIAN SEA LION
BALES BEACH
KANGAROO ISLAND %

Animal/s:
Marine Mammal

DOB: N/A

Collected: 25/10/25 00:25 **Subm.No:** [REDACTED] **Lab No.:** [REDACTED]

Samples tested as received

HISTOPATHOLOGY

REF: [REDACTED]

CLINICAL HISTORY

3.1 year old female Australian sea lion (based on PIT records from Seal Bay research), observed laterally recumbent and paddling hind flippers on the sand at Bales beach KI on 20251024. Collected by NPWS on 25/10/2025. NPWS aiming to collect fresh fecal and urine samples, to accompany carcass if collected.

MACROSCOPY

- 1 Pot contains the organs listed below:
A = hippocampus B = thalamus C = cerebellum
D = interventricular septum of heart
E = heart
F = lung and liver
G = aorta, thyroid, diaphragm
H = adrenal gland, lymph node
I = kidney, adrenal
J = ovary and uterus
K = trachea

L = pancreas and duodenum
M = stomach, jejunum, colon
N = Multiple sections of jejunum
JL

MICROSCOPY

Brain: Multifocally effacing replacing the neural parenchyma within the parietal cortex (white and grey matter), thalamus and the hippocampus there is lytic necrosis (eosinophilic cellular and karyorrhectic debris), and moderate numbers of macrophages, lymphocytes, astroglial cells, microglial cells, rare plasma cells, admixed with haemorrhage and fibrin. Within the inflammation and necrosis the walls of blood vessels are expanded by low numbers of lymphocytes and neutrophils (vasculitis). Within the surrounding intact parenchyma the Virchow-Robin space surrounding multiple vessels is expanded by moderate numbers of lymphocytes and plasma cells. Multifocally the meninges are expanded by moderate numbers of lymphocytes, plasma cells, macrophages and fewer neutrophils, oedema, and haemorrhage. (Moderate, multifocal, subacute necrotizing neutrophilic, histiocytic, lymphocytic, meningoencephalitis)

Lung: Majority of the alveolar lumens are filled with low numbers of

[REDACTED]

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[REDACTED]

Owner:

AUSTRALIAN SEA LION
BALES BEACH
KANGAROO ISLAND %

Animal/s:

Marine Mammal

DOB: N/A

Collected: 25/10/25 00:25

Subm.No.: [REDACTED]

Lab No.: [REDACTED]

Samples tested as received

erythrocytes with rare small lymphocytes and alveolar macrophages. Diffusely the alveolar septa are mildly expanded by congestion / hyperaemia. (Moderate, diffuse, acute pulmonary congestion / hyperaemia and mild acute pulmonary haemorrhage)

Lymph node (slide H): There is mild increase in the numbers of macrophages with lesser numbers of neutrophils and plasma cells within the subcapsular and paratrabecular sinuses within the cortex and within the medullary sinuses. The macrophages occasionally contain brown intracytoplasmic granules.

The cortical lymphoid follicles are mildly hyperplastic, characterised by expansion of the paracortex by increased numbers of small lymphocytes that often anastomosing the adjacent follicles. (Lymphoid hyperplasia, consistent with reactive lymph node)

Trachea: There is occasional mucous with occasional apoptotic inflammatory cells admixed with extravassated erythrocytes in the lumen. There are increased numbers of lymphocytes within the tracheal epithelium. Within the submucosa are mild-moderate numbers of plasma cells and small lymphocytes, with occasional neutrophils (Tracheal associated lymphoid tissue). (Mild, diffuse, subacute, lymphocytic tracheitis)

Jejunum (presumptive: There is moderate autolysis. Aside from this artifact the following finding is described. There is one transverse section of nematode, 40-50 micron across, with a smooth eosinophilic cuticle, coelomyrian musculature, pseudocoelom, with gravid uterus containing ova. (Enteric ascaridiasis)

Ovary: There is a large corpus luteum.

Liver: There is mild autolysis. Aside from this artefact multifocally around portal areas there are low numbers of lymphocytes and plasma

cells. (Mild, multifocal, subacute to chronic, lymphocytic, plasmacytic periportal hepatitis)

Kidney: There is moderate autolysis of the kidney. Aside from this artefact multifocally there are low numbers of lymphocytes and plasma cells within the perirenal adipose tissue at the hilus of the kidney. (Mild, multifocal, chronic, lymphocytic, plasmacytic steatitis)

No significant findings: cerebellum of the brain, interventricular septa

[REDACTED]

Tested on 27/10/25
Reported on 07/11/25 10:30
Referred on 25/10/25 **by:** [REDACTED]

[REDACTED]

Owner:

AUSTRALIAN SEA LION
BALES BEACH
KANGAROO ISLAND %

Animal/s:

Marine Mammal

DOB: N/A

Collected: 25/10/25 00:25

Subm.No.: [REDACTED]

Lab No.: [REDACTED]

Samples tested as received

of heart, uterus, pancreas, stomach, skeletal muscle (diaphragm), thyroid, large vessel (assuming aorta), adrenal glands.

DIAGNOSIS

Brain: Moderate, multifocal, subacute necrotizing neutrophilic, histiocytic, lymphocytic, meningoencephalitis

Lung: Moderate, diffuse, acute pulmonary congestion / hyperaemia and mild acute pulmonary haemorrhage

Lymph node: Lymphoid hyperplasia, consistent with reactive lymph node

Trachea: Mild, diffuse, subacute, lymphocytic tracheitis

Jejunum (presumptive): Enteric ascaridiasis

Ovary: Normal ovary with corpus lutea

Liver: Mild, multifocal, subacute to chronic, lymphocytic, plasmacytic periportal hepatitis

Kidney: Mild, multifocal, chronic, lymphocytic, plasmacytic steatitis

COMMENTS

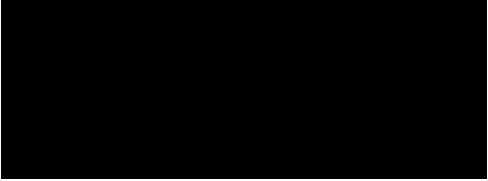
The meningoencephalitis contributed to the paddling behaviour and possibly death for this animal. Differential diagnoses include, bacterial pathogens (e.g. Streptococcus sp.; Klebsiella sp.), fungal

pathogens, protozoa (*Toxoplasma gondii*), or exotic pathogens such as phocid distemper virus (morbillivirus), *Sarcocystis neurona* (protozoa). Protozoal cysts are not seen in the sections of brain examined. Special stains are pending to assess for bacteria and fungi.

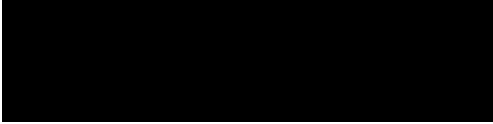
Microbiological culture of the brain for endemic bacterial and fungal pathogens is recommended. Additional charges will apply. Please contact the laboratory if this testing is required.

Testing by PCR for phocid morbillivirus is recommended on the brain. Does Dr Skye Fruean approve submission of brain to ACDP for phocid morbillivirus testing ?

The pulmonary hyperaemia / congestion and mild haemorrhage are likely agonal processes.



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Animal/s:
Marine Mammal

DOB: N/A

Collected: 25/10/25 00:25 **Subm.No.:**  **Lab No.:** 

Samples tested as received

Minor finding
The very mild tracheitis is an incidental finding.


The periportal hepatitis is not uncommon in sea lions and is an incidental finding possibly related to retrograde intestinal microflora in the bile ducts.

The steatitis in the peri-renal fat is an incidental finding.

Enteric ascaridiasis is a normal finding in sea lions and can be due to Anisakis / Contracaecum sp.

The reactive changes in the lymph node simply indicate it was responding to a site of very mild inflammation. Because the site from which the lymph node is not specified, no further comments can be made.

The lump on the ovary was a corpus luteum.

Report completed by

Veterinary Anatomic Pathology Diagnostician

and

Specialist Veterinary Anatomic Pathologist

[REDACTED]

Validated by [REDACTED]

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PATH RESULTS: AUSTRALIAN SEA LION, (Ma) [REDACTED]

From [REDACTED]

Date Tue 18/11/2025 12:30 PM

To [REDACTED]

[REDACTED]

Tested on 27/10/25
Reported on 18/11/25 13:00
Referred on 25/10/25 **by:**

[REDACTED]

[REDACTED]

Owner:
AUSTRALIAN SEA LION
BALES BEACH
KANGAROO ISLAND %

Animal/s:
Marine Mammal

DOB: N/A

Collected: 25/10/25 00:25 **Subm.No:** [REDACTED] **Lab No.:** [REDACTED]

Samples tested as received

MICROBIOLOGY

SPECIMEN: Brain
ANIMAL ID:Australian sea lion

MICROSCOPY

A moderate number of gram positive cocci. A small number of gram negative bacilli.

CULTURE

1. Heavy growth of *Streptococcus phocae*
2. Heavy growth of Mixed organisms

COMMENT: Anaerobes NOT isolated.
No *Salmonella* or *Listeria* spp. isolated.
Brucella species NOT isolated after 7 days incubation.

Please contact the laboratory if susceptibility testing is required on *Streptococcus phocae*.

This organism was identified using the MALDI-TOF at [REDACTED]
[REDACTED]

Final Report

18/11/25

Validated by [REDACTED] Laboratory Scientist.

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PATH RESULTS: AUSTRALIAN SEA LION, (Ma) [REDACTED]

From [REDACTED]

Date Sat 22/11/2025 7:00 PM

To [REDACTED]

[REDACTED]

Tested on 27/10/25
Reported on 22/11/25 19:30
Referred on 25/10/25 **by:**

[REDACTED]

[REDACTED]

Owner:
AUSTRALIAN SEA LION
BALES BEACH
KANGAROO ISLAND %

Animal/s:
Marine Mammal
DOB: N/A

Collected: 25/10/25 00:25 **Subm.No:** [REDACTED] **Lab No.:** [REDACTED]

Samples tested as received

SUMMARY COMMENTS
Streptococcus phocae meningoencephalitis

SUMMARY COMMENTS
Streptococcus phocae meningoencephalitis contributed to the neurological signs. Cetacean morbillivirus is not detected. Brevetoxins and biotoxins are not detected.

Further testing at ACDP is pending.

[REDACTED]

Specialist Veterinary Anatomic Pathologist

[REDACTED]

Validated by [REDACTED]

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PATH RESULTS: AUSTRALIAN SEA LION, (Ma) [REDACTED]

From [REDACTED]

Date Tue 04/11/2025 3:30 PM

To [REDACTED]

[REDACTED]

Tested on 27/10/25
Reported on 04/11/25 16:00
Referred on 25/10/25 **by:**

[REDACTED]

[REDACTED]

Owner:
AUSTRALIAN SEA LION
BALES BEACH
KANGAROO ISLAND %

Animal/s:
Marine Mammal

DOB: N/A

Collected: 25/10/25 00:25 **Subm.No:** [REDACTED] **Lab No.:** [REDACTED]

Samples tested as received

REFERRED TEST

Disease/Test : Mycobacterium avium complex Taqman Assay
Specimen Type: Lung

RESULT : 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: Lung

RESULT : Negative

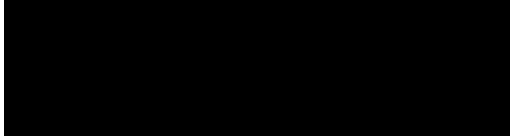
Comment : NATA/RCPA accreditation does not cover the performance of
this service

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

Validated by [REDACTED] Laboratory Scientist.



Tested on 27/10/25
Reported on 04/11/25 16:00
Referred on 25/10/25 **by:**



Owner:
AUSTRALIAN SEA LION
BALES BEACH
KANGAROO ISLAND %

Animal/s:
Marine Mammal

DOB: N/A

Collected: 25/10/25 00:25 **Subm.No:**  **Lab No.:** 

Samples tested as received

REFERRED TEST

Disease/Test : Mycobacterium tuberculosis complex IS6110 - TaqMan Assay
Specimen Type: Lung

RESULT : 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  Laboratory Scientist.

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PATH RESULTS: AUSTRALIAN SEA LION, (Ma) [REDACTED]

From [REDACTED]

Date Tue 20/01/2026 3:00 PM

To [REDACTED]

[REDACTED]

Tested on 27/10/25
Reported on 20/01/26 15:30
Referred on 25/10/25 **by:**

[REDACTED]

[REDACTED]

Owner:
AUSTRALIAN SEA LION
BALES BEACH
KANGAROO ISLAND %

Animal/s:
Marine Mammal

DOB: N/A

Collected: 25/10/25 00:25 **Subm.No:** [REDACTED] **Lab No.:** [REDACTED]

Samples tested as received All Tests Complete

REFERRED TEST

Disease/Test : Mycobacterium Isolation
Specimen Type: Lung Tissue

RESULT : Mycobacterium spp. was not isolated

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

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PATH RESULTS: AUSTRALIAN SEA LION, (Ma) [REDACTED]

From [REDACTED]

Date Fri 31/10/2025 7:30 PM

To [REDACTED]

[REDACTED]

Tested on 27/10/25
Reported on 31/10/25 20:00
Referred on 25/10/25 **by:**

[REDACTED]

[REDACTED]

Owner:
AUSTRALIAN SEA LION
BALES BEACH
KANGAROO ISLAND %

Animal/s:
Marine Mammal

DOB: N/A

Collected: 25/10/25 00:25 **Subm.No:** [REDACTED] **Lab No.:** [REDACTED]

Samples tested as received

MOLECULAR DIAGNOSTICS

INFLUENZA A RNA PCR (REAL TIME REVERSE TRANSCRIPTASE)

Specimen type: Oropharyngeal swab in VTM

SPECIMEN ID Type A H5 H7

SEA LION Not detected

COMMENT: NATA accreditation does not cover the performance of this test on non- avian species.

Validated by [REDACTED] Laboratory Scientist.

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PATH RESULTS: AUSTRALIAN SEA LION, (Ma) [REDACTED]

From [REDACTED]

Date Thu 20/11/2025 5:00 PM

To [REDACTED]

[REDACTED]

Tested on 27/10/25
Reported on 20/11/25 17:30
Referred on 25/10/25 **by:**

[REDACTED]

[REDACTED]

Owner:
AUSTRALIAN SEA LION
BALES BEACH
KANGAROO ISLAND %

Animal/s:
Marine Mammal

DOB: N/A

Collected: 25/10/25 00:25 **Subm.No:** [REDACTED] **Lab No.:** [REDACTED]

Samples tested as received

REFERRED TEST

Disease/Test : Cetacean Morbillivirus
Method : TaqMan PCR Assay
Specimen Type: Brain

RESULT : 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: AUSTRALIAN SEA LION, (Ma) [REDACTED]

From [REDACTED]

Date Thu 11/12/2025 11:30 AM

To [REDACTED]

[REDACTED]

Tested on 27/10/25
Reported on 11/12/25 12:00
Referred on 25/10/25 **by:**

Report Addressee:

[REDACTED]

[REDACTED]

Owner:
AUSTRALIAN SEA LION
BALES BEACH
KANGAROO ISLAND %

Animal/s:
Marine Mammal

DOB: N/A

Collected: 25/10/25 00:25 **Subm.No:** [REDACTED] **Lab No.:** [REDACTED]

Samples tested as received

REFERRED TEST

Disease/Test : Morbillivirus
Method : PCR
Specimen Type: Brain

RESULT : 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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CERTIFICATE OF ANALYSIS

Customer: [REDACTED]
 Address: [REDACTED]
 Contact: [REDACTED]

Submission Description: Australian Sea Lion (Bales Beach K1)
 Sample Received Date: 06/11/2025
 Contract Number: [REDACTED]
 Client Order Number: [REDACTED]
 Program/Quote Reference: [REDACTED] Biotoxins and brevetoxins in Sea Lion samples

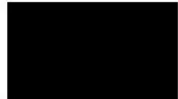
*Sample(s) analysed as received. Sampling date and time data supplied by the client. The document shall not be reproduced except in full.
 Additional information relating to this submission can be found in the sample receipt notification.
 This report supersedes any previous reports with this submission 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	N/A
3411A	Brevetoxins in Shellfish by LC-MS/MS	13-11-2025
3416	PST in Biota by LC-MS/MS (Boundy Method)	13-11-2025



Chemistry Test Results (Biota - Food)		Sample Description	Liver	Kidney	Spleen	Heart	Lung	Brain	Intestinal Content	Faeces
		Sampled Date/ Time	27/10/25 0:00	27/10/25 0:00	27/10/25 0:00	27/10/25 0:00	27/10/25 0:00	27/10/25 0:00	27/10/25 0:00	27/10/25 0:00
Method ID	Analyte	Units	371430	371431	371432	371433	371434	371435	371436	371437
3411	AZA1	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	AZA2	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	AZA3	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Domoic Acid	mg/kg WMB	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	DTX1 Free	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	DTX1 Total	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	DTX2 Free	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	DTX2 Total	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	GYM	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Homo-YTX	mg/kg WMB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	OA Free	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	OA Total	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	PnTx-G	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	PTX2	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	SPX1	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Total DST	OA eq. mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	YTX	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
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
	dcGTX4	STX.2HCl eq. mg/kg	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*

* NATA accreditation does not cover this result



Chemistry Test Results (Biota - Food)		Sample Description	Liver	Kidney	Spleen	Heart	Lung	Brain	Intestinal Content	Faeces
		Sampled Date/ Time	27/10/25 0:00	27/10/25 0:00	27/10/25 0:00	27/10/25 0:00	27/10/25 0:00	27/10/25 0:00	27/10/25 0:00	27/10/25 0:00
Method ID	Analyte	Units	371430	371431	371432	371433	371434	371435	371436	371437
3416	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

* NATA accreditation does not cover this result