Algal bloom wildlife post-mortem report

Government of South Australia
Department for Environment and Water

Species – Olive ridley sea turtle

Date collected – 6 November 2025

Location – Moana Beach

History relating to the animal

An olive ridley sea turtle (*Lepidochelys olivacea*) was submitted for laboratory examination on 6 November 2025.

Clinical examination

No clinical notes or history were provided. The animal was a wild animal being provided veterinary care before it was euthanised.

Necropsy

The necropsy (looking at the whole body) revealed that the sea turtle was in good body condition, weighing 2.9kg. The carapace (upper/back part of the shell) was 34cm long and 35cm wide, with the plastron (lower/belly part of the shell) being 24cm long and 30cm wide.

In multiple areas over the top of the head, axilla (armpit) and inguinal (groin) regions there was pale brown thickening of the skin which lifted away from the underlying epidermis (the outer layer of the skin). Near the tip of the tongue there was linear (in a line) thickening of the mucosa (surface of the tongue), which lifted away from the underlying mucosa.

The stomach contained scant moist pale white to grey food material. The gastrointestinal tract (gut) contained scant brown pasty food material and the colon and rectum contained moist dark brown faeces. Reproductive organs were not clearly visible in the animal, so it wasn't clear if the animal was male or female.

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).

Histopathology

Samples from every major body system were examined under the microscope. Both the skin and tongue showed mild, chronic (long-term), necrotising (causing cell death), heterophilic (type of immune cell) inflammation with intralesional mixed bacteria (different bacteria within the damaged tissue). There were no abnormalities seen within the other tissues examined.

Brevetoxins

Brevetoxin 1 was found in the faeces (4mg/kg).

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Other algal biotoxins

No samples were above the limits of reporting.

Summary

An olive ridley sea turtle (*Lepidochelys olivacea*) with an unknown history was submitted for laboratory examination, which found mild, chronic (long-term) bacterial infection and inflammation in the skin and tongue. The cause of the abnormal tissue couldn't be found, although trauma (injury) is a possible cause. Brevetoxin was found in the faeces of this animal and is known to cause neurological signs in sea turtles. Because there is no history for this animal, no further conclusions can be drawn.

Outlook

PATH RESULTS: TURTLE OLIVE RIDLEY, (Re) [redacted]

From [redacted]
Date Sat 08/11/2025 2:30 PM
To [redacted]

[redacted]

[redacted]

Tested on 07/11/25
Reported on 08/11/25 15:00
Referred on 06/11/25 **by:** [redacted]

Owner:
TURTLE OLIVE RIDLEY

Animal/s:
Reptile

DOB: N/A

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

Samples tested as received

NECROPSY REPORT

CLINICAL HISTORY
The history / notes from [redacted] have not arrived at [redacted]

SAMPLES SUBMITTED
One Olive Ridley turtle

NECROPSY FINDINGS
The animal is in good body condition and weighs 2.9kg. There are minimal post mortem autolytic changes.

The carapace is 340mm long and 350mm across.

The plastron is 240mm long and 300mm across.

Multifocally over the dorsal head, axilla regions and inguinal regions there is pale brown thickening of the skin which lifts from the underlying epidermis (possible hyperkeratosis).

At the rostral end of the tongue there is linear thickening of the mucosa which lifts from the underlying mucosa (possible hyperkeratosis).

The stomach contains scant moist pale white to grey ingesta. The intestinal tract contains scant brown pasty ingesta and the colon / rectum contains moist dark brown faeces.

GROSS SUMMARY
Cutaneous hyperkeratosis
Lingual hyperkeratosis (tongue)

SAMPLES COLLECTED & TESTING
Formalin fixed tissues are collected and will be processed for histopathology.

Analytical Services Tasmania will be contacted for a quote for testing fresh liver, kidney, spleen, heart, lung, brain and faeces for biotoxins and brevetoxins. Because the animal was in captivity, stomach content won't be tested.

Fresh skin and tongue lesions are stored at -80 degrees Celsius.

[redacted]

[redacted]

Tested on 07/11/25
Reported on 08/11/25 15:00
Referred on 06/11/25 **by:** [redacted]

Owner:
TURTLE OLIVE RIDLEY

Animal/s:
Reptile

DOB: N/A

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

Samples tested as received

Histopathology may clarify the changes seen grossly.

Fresh liver, spleen, heart, lung, kidney and brain in 5ml containers are also stored at -80 degrees Celsius.

COMMENTS
The multiple cutaneous and lingual (tongue) sites of hyperkeratosis may be due to various factors including fungal infection or trauma. Histopathology will clarify these findings.

As mentioned above, because the animal was in care and likely fed during that time, stomach contents will not be tested for biotoxins.

Because there is no history for this animal, no further comments can be made. If additional history is received from the [redacted] I'll add it to this report.

Gonads were not grossly evident in the animal and the animal could not be sexed.

[redacted]
Specialist Veterinary Anatomic Pathologist
[redacted]

Validated by [redacted]

Outlook

PATH RESULTS: TURTLE OLIVE RIDLEY, (Re) [redacted]

From [redacted]
Date Sat 15/11/2025 7:30 PM
To [redacted]

[redacted]

[redacted]

Tested on 07/11/25
Reported on 15/11/25 20:00
Referred on 06/11/25 **by:** [redacted]

Owner:
TURTLE OLIVE RIDLEY

Animal/s:
Reptile

DOB: N/A

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

Samples tested as received

HISTOPATHOLOGY FROM NECROPSY

REF: [redacted]
CLINICAL HISTORY
No clinical history is received from the [redacted]

MACROSCOPY
Cassettes contain the following tissues:
A: Spleen, heart, kidney
B: Stomach, duodenum, jejunum, colon
C: Skin lesions x 3
D: Tongue lesion
E: Brain
F: Lung, liver, kidney; Ae GK

MICROSCOPY
Multiple sections of skin: Multifocally there is ulceration of the epidermis and replacement of the epidermis by large numbers of heterophils, no eosinophil protein and colonies of coccoid and short rod bacteria. The adjacent epithelium is hyperplastic.

Tongue: Multifocally there is ulceration of the epithelium and replacement of the epidermis by large numbers of heterophils, no eosinophil protein and colonies of coccoid and short rod bacteria. The adjacent epithelium is hyperplastic.

Those tissues not described appear normal

DIAGNOSIS
Multiple sections of skin: Mild, multifocal, chronic, necrotising, heterophilic, dermatitis with intralesional mixed bacteria

Tongue: Mild, focal, chronic, necrotizing, heterophilic glossitis with intralesional mixed bacteria

COMMENTS
There is mild chronic dermatitis and glossitis. The primary cause for these lesions is not evident based on gross and histopathological findings. Trauma is 1 possible cause.

[redacted]

[redacted]

Tested on 07/11/25
Reported on 15/11/25 20:00
Referred on 06/11/25 **by:** [redacted]

Owner:
TURTLE OLIVE RIDLEY

Animal/s:
Reptile

DOB: N/A

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

Samples tested as received

[redacted]
Specialist Veterinary Anatomic Pathologist
[redacted]

Validated by [redacted]

Outlook

PATH RESULTS: TURTLE OLIVE RIDLEY, (Re) [redacted]

From [redacted]
Date Sat 22/11/2025 6:00 PM
To [redacted]

[redacted]

[redacted]

Tested on 07/11/25
Reported on 22/11/25 18:30
Referred on 06/11/25 **by:** [redacted]

Owner:
TURTLE OLIVE RIDLEY

Animal/s:
Reptile

DOB: N/A

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

Samples tested as received All Tests Complete

SUMMARY DIAGNOSIS
Chronic dermatitis and glossitis

SUMMARY COMMENTS
The animal had chronic dermatitis and glossitis. These were minor findings and would not have contributed to morbidity.

[redacted]
Specialist Veterinary Anatomic Pathologist
[redacted]

Validated by [redacted]

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: 24/02/2026
Status: Final

CERTIFICATE OF ANALYSIS

Customer: [redacted]
Address:
Contact:

Submission Description: Biotoxin and Brevotoxins - Turtle
Sample Received Date: 16/12/2025
Contract Number:
Client Order Number: [redacted]
Program/Quote Reference: 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*
[redacted]	**Section Head - Organic Chemistry**

Test Information:

Method ID	*Test Description*	*Date Commenced:*
3411	Lipophilic Toxins in Shellfish by LC-MS/MS	16-02-2026
3411A	Brevetoxins in Shellfish by LC-MS/MS	13-02-2026
3416	PST in Biota by LC-MS/MS (Boundy Method)	16-02-2026

Chemistry Test Results (Biota - Food)

		Sample Description	Lung	Liver	Kidney	Heart	Spleen	Faeces
		Sampled Date/ Time	07/11/25 0:00	07/11/25 0:00	07/11/25 0:00	07/11/25 0:00	07/11/25 0:00	07/11/25 0:00
Method ID	Analyte	Units	394507	394508	394509	394510	394511	394512
3411	AZA1	mg/kg WMB	<0.01*	<0.01*	<0.01*	<0.01*	*IS*	<0.01*
	AZA2	mg/kg WMB	<0.01*	<0.01*	<0.01*	<0.01*	*IS*	<0.01*
	AZA3	mg/kg WMB	<0.01*	<0.01*	<0.01*	<0.01*	*IS*	<0.01*
	Domoic Acid	mg/kg WMB	<0.05*	<0.05*	<0.05*	<0.05*	*IS*	<0.05*
	DTX1 Free	mg/kg WMB	<0.01*	<0.01*	<0.01*	<0.01*	*IS*	<0.01*
	DTX1 Total	mg/kg WMB	<0.01*	<0.01*	<0.01*	<0.01*	*IS*	<0.01*
	DTX2 Free	mg/kg WMB	<0.01*	<0.01*	<0.01*	<0.01*	*IS*	<0.01*
	DTX2 Total	mg/kg WMB	<0.01*	<0.01*	<0.01*	<0.01*	*IS*	<0.01*
	GYM	mg/kg WMB	<0.01*	<0.01*	<0.01*	<0.01*	*IS*	<0.01*
	Homo-YTX	mg/kg WMB	<0.02*	<0.02*	<0.02*	<0.02*	*IS*	<0.02*
	OA Free	mg/kg WMB	<0.01*	<0.01*	<0.01*	<0.01*	*IS*	<0.01*
	OA Total	mg/kg WMB	<0.01*	<0.01*	<0.01*	<0.01*	*IS*	<0.01*
	PnTx-G	mg/kg WMB	<0.01*	<0.01*	<0.01*	<0.01*	*IS*	<0.01*
	PTX2	mg/kg WMB	<0.01*	<0.01*	<0.01*	<0.01*	*IS*	<0.01*
	SPX1	mg/kg WMB	<0.01*	<0.01*	<0.01*	<0.01*	*IS*	<0.01*
	Total DST	OA eq. mg/kg	<0.01*	<0.01*	<0.01*	<0.01*	*IS*	<0.01*
	YTX	mg/kg WMB	<0.01*	<0.01*	<0.01*	<0.01*	*IS*	<0.01*
3411A	Brevetoxin 1	mg/kg WMB	<0.10*	<0.10*	<0.10*	<0.10*	<0.10*	4.0*
	Brevetoxin 2	mg/kg WMB	<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*
3416	C1	STX.2HCl eq. mg/kg	<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*
	C3	STX.2HCl eq. mg/kg	<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*
	dcGTX1	STX.2HCl eq. mg/kg	<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*
	dcGTX3	STX.2HCl eq. mg/kg	<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*

IS- Insufficient Sample

* NATA accreditation does not cover this result

Chemistry Test Results (Biota - Food)

		Sample Description	Lung	Liver	Kidney	Heart	Spleen	Faeces
		Sampled Date/ Time	07/11/25 0:00	07/11/25 0:00	07/11/25 0:00	07/11/25 0:00	07/11/25 0:00	07/11/25 0:00
Method ID	Analyte	Units	394507	394508	394509	394510	394511	394512
3416	dcNEO	STX.2HCl eq. mg/kg	<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*
	doSTX	STX.2HCl eq. mg/kg	<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*
	GTX2	STX.2HCl eq. mg/kg	<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*
	GTX4	STX.2HCl eq. mg/kg	<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*
	GTX6	STX.2HCl eq. mg/kg	<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*
	STX	STX.2HCl eq. mg/kg	<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*

IS- Insufficient Sample

* NATA accreditation does not cover this result