

Algal bloom wildlife post-mortem report



Government
of South Australia

Department for
Environment and Water

Species – Green sea turtle

Date collected – 3 September 2025

Location – Grange beach

History relating to the animal

A juvenile green sea turtle (*Chelonia mydas*) was found ill on Grange Beach on 3 September 2025. The animal was transferred for veterinary assessment and care.

Clinical examination

The animal, which appeared underweight, was imaged (radiographs (x-rays) and computed tomography (CT) scans) and provided supportive care. The only unusual findings were partial collapse of the lungs and other mild changes to the lungs. The turtle was swimming well on 8 September but deteriorated over the following days and was subsequently euthanised on 11 September 2025. The whole body was submitted for laboratory examination on 12 September 2025.

Necropsy

The necropsy (looking at the whole body) revealed that the animal showed mild effects from post-mortem decomposition. The stomach contained soft brown material and there was a very small amount of faeces in the intestines. The lungs appeared normal. There were no other remarkable findings and no cause of death could be determined from the necropsy.

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. In the lungs there were signs of a subacute (recent) mild bronchopneumonia (inflammation in the lungs and upper airways). The brain and meninges (protective lining around the brain, inside the skull) also had some mild congestion (fluid accumulation). The lung tissue was examined using special stains, which showed no evidence of fungi, yeast or acid-fast *Mycobacterium* species of bacteria (which cause tuberculosis).

Brevetoxins

Brevetoxin 3 was detected in the stomach content sample at 0.01mg/kg.

Other algal biotoxins

No samples were above the limits of reporting.

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Summary

A juvenile green sea turtle was found ill on the beach. It was transferred for veterinary assessment and care. Images (x-rays and CT scans) showed some changes in the lungs, including partial collapse of the lungs. The turtle was provided with supportive care but deteriorated and was euthanised, with the body submitted for laboratory examination. The turtle was found to have bronchopneumonia (inflammation in the lungs and upper airways), which may have contributed to its illness.

Brevetoxin-3 was found at very low levels in the stomach contents, but was not detected in the tissues of the turtle. No other algal biotoxins were detected. Whilst brevetoxin-3 is a potent neurotoxin (nerve toxin), the low levels detected within the stomach contents were considered unlikely to have contributed to the illness of this animal.

PATH RESULTS: TURTLE GREEN SEA, [REDACTED]

From [REDACTED]

Date Sat 13/09/2025 5:30 PM

To [REDACTED]

[REDACTED]

Tested on 12/09/25
Reported on 13/09/25 18:00
Referred on 12/09/25 **by:**
DEW - MARINE

[REDACTED] [REDACTED]

Owner:
TURTLE GREEN SEA

GRANGE 5022

Animal/s: [REDACTED]
Reptile
[REDACTED]
DOB: N/A

Collected: 12/09/25 00:25 **Subm.No:** [REDACTED]

Lab No.: [REDACTED]

Samples tested as received

NECROPSY REPORT

CLINICAL HISTORY

Please refer to the clinical history on the request forms;

A juvenile green sea turtle was found ill at Grange Beach on 3/9/2025.

The animal was in care at the [REDACTED]

[REDACTED] from 4/9/25 and then transferred to [REDACTED] on 6/9/25. The animal was assessed as very skinny. The animal improved with supportive care.

On CT on 9/9/25 there were possible atelectasis / mild lung changes. Swam in deeper water Wednesday but was exhausted on Thursday.

The animal was tube fed on Thursday AM. The animal was found moribund on Thursday PM and was euthanized.

SAMPLES SUBMITTED

One dead juvenile green sea turtle

NECROPSY FINDINGS

The animal is in moderate body condition, weighs 8.3kg, and there are minimal post mortem autolytic changes. The carapace is approximately 470mm long and 380mm across; the plastron is approximately 330mm long and 380mm across.

The stomach contains scant pale brown soft material. The intestines contains scant amount of faeces.

GROSS SUMMARY

Unremarkable gross findings

SAMPLES COLLECTED & TESTING

Formalin fixed tissues will be processed for histopathology.

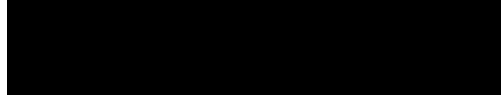
Analytical Services Tasmania will be contacted and a quote will be requested for testing liver (100g), spleen (5g), heart (10g), lung (10g), kidney (2g), and brain (< 1g) for biotoxins and brevetoxins. This will be forwarded to you for your approval prior to samples being sent to AST.

Stomach content (< 1g) will be stored because the animal was fed while in captivity and stomach content will not reflect wild diet.

Fresh liver, spleen, heart, lung, and brain are stored frozen. There was



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Animal/s:
Reptile

DOB: N/A

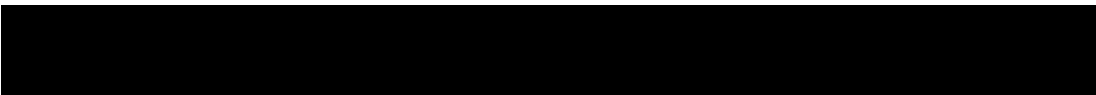
Collected: 12/09/25 00:25 Subm.No: Lab No.:

Samples tested as received
insufficient kidney to set aside additional tissues.

COMMENTS

The cause of morbidity was not evident on gross examination. Could decreased feed abundance have contributed to morbidity ?

The lungs appear grossly normal.



Specialist Veterinary Anatomic Pathologist



Validated by



Outlook

PATH RESULTS: TURTLE GREEN SEA, C50184 (Re) {C50184} [25-35785480]

From [REDACTED]

Date Fri 19/09/2025 3:30 PM

To [REDACTED]

Tested on 12/09/25
Reported on 19/09/25 16:00
Referred on 12/09/25 by:
DEW - MARINE

Owner:
TURTLE GREEN SEA
GRANGE 5022

Animal/s: [REDACTED]
Reptile
[REDACTED]
DOB: N/A

Collected: 12/09/25 00:25

Subm.No: [REDACTED]

Lab No.: [REDACTED]

Samples tested as received

HISTOPATHOLOGY FROM NECROPSY

REF: [REDACTED]

ADDITIONAL FINDINGS 19/8/2025

CLINICAL HISTORY

Please refer to the clinical history on the request forms;

A juvenile green sea turtle was found ill at Grange Beach on 3/9/2025.

The animal was in care at the [REDACTED]

[REDACTED] from 4/9/25 and then transferred to [REDACTED] on 6/9/25. The animal was assessed as very skinny. The animal improved with supportive care.

On CT on 9/9/25 the were possible atelectasis / mild lung changes. Swam in deeper water Wednesday but was exhausted on Thursday.

The animal was tube fed on Thursday AM. The animal was found moribund on Thursday PM and was euthanized.

One dead juvenile green sea turtle

MACROSCOPY

Cassettes contain the following tissues

A: lung, spleen
B: liver, heart
C: stomach, jejunum
D-E: brain; Ae GK

MICROSCOPY

Lung: Multifocally there are low numbers of macrophages within the lumen of faveoli. The interstitium lining faveoli is expanded by oedema admixed with low numbers of macrophages. (Mild, multifocal, subacute histiocytic bronchopneumonia and interstitial pneumonia)

Brain: There is mild diffuse hyperaemia / congestion of the brain and meninges. (Mild, diffuse hyperaemia / congestion)

Those tissues not described appear normal.

DIAGNOSIS

Lung: Mild, multifocal, subacute histiocytic bronchopneumonia and interstitial pneumonia

Brain: Mild, diffuse hyperaemia / congestion

[REDACTED]

Tested on 12/09/25
Reported on 19/09/25 16:00
Referred on 12/09/25 by:
DEW - MARINE

[REDACTED]

Owner:
TURTLE GREEN SEA

GRANGE 5022

Animal/s: [REDACTED]
Reptile
[REDACTED]
DOB: N/A

Collected: 12/09/25 00:25

Subm.No: [REDACTED]

Lab No.: [REDACTED]

Samples tested as received

COMMENTS

There is mild microscopic bronchopneumonia. Please contact the laboratory if microbiological cultures are required. Special stains are pending to look for microorganisms.

The mild congestion / hyperaemia of the brain and meninges is a non-specific change.

MICROSCOPY 19/9/25

Lung: Microorganisms are not seen on Gram, PAS (no fungal hyphae or yeast are seen) , Wade fite or Ziehl Neelsen stains (no acid fast bacteria such as Mycobacterium sp. are seen).

COMMENTS

Please note that microbiological culture is more sensitive than the special stains. For this reason an infectious microbial cause cannot be excluded.

[REDACTED]

Specialist Veterinary Anatomic Pathologist

[REDACTED]

Validated by [REDACTED]

CERTIFICATE OF ANALYSIS

Customer:
Address:
Contact:

Submission Description: Green Sea Turtle
Sample Received Date: 25/09/2025
Contract Number:
Client Order Number:
Program/Quote Reference: Sea Lion, GS Turtle and Dolphin analysis

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	08-10-2025
3411A	Brevetoxins in Biota by LC-MS/MS	09-10-2025
3416	PST in Biota by LC-MS/MS (Boundy Method)	08-10-2025

Chemistry Test Results (Biota - Food)

Chemistry Test Results (Biota - Food)			Sample Description	Skeletal Muscle	Liver	Stomach Content	Kidney	Brain	Spleen	Lung	Heart
			Sampled Date/ Time	13/09/25 0:00	13/09/25 0:00	13/09/25 0:00	13/09/25 0:00	13/09/25 0:00	13/09/25 0:00	13/09/25 0:00	13/09/25 0:00
Method ID	Analyte	Units	353648	353649	353650	353651	353652	353653	353654	353655	
3411	AZA1	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01	<0.01	<0.01	
	AZA2	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01	<0.01	<0.01	
	AZA3	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01	<0.01	<0.01	
	Domoic Acid	mg/kg WMB	<0.05	<0.05	<0.05	<0.05	*IS*	<0.05	<0.05	<0.05	
	DTX1 Free	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01	<0.01	<0.01	
	DTX1 Total	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01	<0.01	<0.01	
	DTX2 Free	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01	<0.01	<0.01	
	DTX2 Total	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01	<0.01	<0.01	
	GYM	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01	<0.01	<0.01	
	Homo-YTX	mg/kg WMB	<0.02	<0.02	<0.02	<0.02	*IS*	<0.02	<0.02	<0.02	
	OA Free	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01	<0.01	<0.01	
	OA Total	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01	<0.01	<0.01	
	PnTx-G	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01	<0.01	<0.01	
	PTX2	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01	<0.01	<0.01	
	SPX1	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01	<0.01	<0.01	
	Total DST	OA eq. mg/kg	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01	<0.01	<0.01	
	YTX	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01	<0.01	<0.01	
3411A	Brevetoxin 2	mg/kg WMB	<0.01*	<0.01*	<0.01*	<0.01*	<0.01*	<0.01*	<0.01*	<0.01*	
	Brevetoxin 3	mg/kg WMB	<0.01*	<0.01*	0.01*	<0.01*	<0.01*	<0.01*	<0.01*	<0.01*	
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*	
	dcNEO	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	Skeletal Muscle	Liver	Stomach Content	Kidney	Brain	Spleen	Lung	Heart
		Sampled Date/ Time	13/09/25 0:00	13/09/25 0:00	13/09/25 0:00	13/09/25 0:00	13/09/25 0:00	13/09/25 0:00	13/09/25 0:00	13/09/25 0:00
Method ID	Analyte	Units	353648	353649	353650	353651	353652	353653	353654	353655
3416	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

PATH RESULTS: TURTLE GREEN SEA, [REDACTED] (Re) [REDACTED]

From [REDACTED]

Date Tue 21/10/2025 6:00 PM

To [REDACTED]

[REDACTED]

Tested on 12/09/25
Reported on 21/10/25 18:30
Referred on 12/09/25 **by:**

[REDACTED]

[REDACTED]

Owner:

TURTLE GREEN SEA

GRANGE 5022

Animal/s: [REDACTED]

Reptile
[REDACTED]

DOB: N/A

Collected: 12/09/25 00:25 **Subm.No:** [REDACTED]

Lab No.: [REDACTED]

Samples tested as received

All Tests Complete

SUMMARY DIAGNOSIS

Lung: Mild, multifocal, subacute histiocytic bronchopneumonia and interstitial pneumonia

SUMMARY COMMENTS

There is mild microscopic bronchopneumonia. Microorganisms were not found on special stains. This mild bronchopneumonia may have contributed to morbidity.

There is also mild congestion / hyperaemia of the brain and meninges which are non-specific changes.

mal.

[REDACTED]

Validated by



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