Algal bloom wildlife post-mortem report

Government of South Australia
Department for Environment and Water

Species – Cormorants

Date collected – 27 May 2025

Location – Flinders Port passenger terminal, Outer Harbour

History relating to the animal

Twelve (12) cormorants (*Phalacrocorax spp.*) were found dead and another 36 were found moribund (close to death) at the Flinders Port passenger terminal at Outer Harbour. Five (5) subadult (only some adult feathers) birds were submitted for laboratory examination.

Clinical examination

The live birds appeared weak and very unwell. They were in moderate body condition and weighed between 1.2kg - 1.6kg.

Necropsy

Necropsy (looking at the whole body) was performed on two of the birds and revealed that these birds were in good body condition. There was mild post-mortem autolytic change (decomposing after death). There was no food material and low to moderate numbers of ascarid worms (gut parasites) in the proventriculus and ventriculus (parts of the gut, similar to the stomach of other animals) of both animals. There were cervical vertebral fractures (broken bones in the neck) and haemorrhage (bleeding) in both necropsied animals. There were no cervical vertebral fractures or haemorrhage around the atlanto-occipital joint (joint between the skull and the first bone of the neck) in the other three birds that were submitted to the lab.

Samples were collected from all five birds to test for avian influenza and Newcastle disease. Tissue samples were collected for histopathology (looking at tissues under the microscope for more detailed information) from the two necropsied birds. Additional samples were collected and stored to allow for additional testing if required.

Histology

Samples from every major body system were examined under the microscope. Examination of these organs revealed a number of disease processes occurring within both examined birds.

Bird 1 had interstitial pneumonia (lung inflammation) and oedema (fluid), necrotising hepatitis (liver inflammation and cell death), chronic proventriculitis (long term inflammation of the upper gut), subacute necrotising myositis (very recent inflammation and cell death of muscles) and round worms noted within the proventriculus (upper part of the gut).

Bird 2 had had interstitial pneumonia (lung inflammation), necrotising hepatitis (liver inflammation and cell death), chronic proventriculitis (long term inflammation of the upper gut), blood within the trachea (windpipe) interstitial nephritis (inflammation of the kidney), subacute necrotising myositis (very recent inflammation and cell death of muscles) and round worms

Algal bloom wildlife post-mortem report

noted within the proventriculus (upper part of the gut) and duodenum (first part of the small intestines).

Culture

Samples were collected following the histopathology findings, which suggested a possible bacterial infection. There was a light growth of *Clostridium perfringens*, and a moderate growth of *Escherichia coli* and *Enterococcus spp*. (all common, widespread bacteria). The bacteria found were unlikely to be clinically significant in these cases.

Virology

Testing results for avian influenza and Newcastle disease were negative in all five birds.

Summary

Approximately 50 cormorants were found dead or close to death at Outer Harbour. Five birds were submitted for testing. Laboratory examination of two birds found they died from vertebral (neck) fracture. It is not known whether these two birds were found dead or euthanised. The factures therefore may have been due to the method of euthanasia or trauma. Neck fractures were not found in the other three birds.

Both birds necropsied also had multiple signs of illness, including inflammation of the lungs, liver and gut, likely caused by a bacterial or viral infection. The ascarids (worms) found within the gut are a common finding in marine birds. Testing for avian influenza and Newcastle disease was negative in all five birds.

[redacted]

From: [redacted]
Sent: Wednesday, 13 August 2025 5:00 PM
To: [redacted]
Subject: PATH RESULTS: CORMORANT MORTALITY, (Wi) [redacted]

GRIBBLES VETERINARY PATHOLOGY

[redacted]

[redacted]

Tested on 27/05/25
Reported on 13/08/25 17:30
Referred on 27/05/25 **by:**
[redacted]

Owner:
CORMORANT MORTALITY
FLINDERS PORT PASSENGER T
PORT ADELAIDE 5015

Animal/s:
Wild Birds

DOB: N/A

Collected: 27/05/25 08:00 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

HISTOPATHOLOGY

REF: [redacted]
ADDITIONAL FINDINGS 13/6/2025

CLINICAL HISTORY
This is a summary of the clinical history from the request form. Please refer to the request form for the full history.
This is the second mass mortality event of, it is at Port Adelaide. 12 dead birds were found. 36 moribund birds were found.
The last mortality event of juveniles occurred over Easter. Several dozen unwell looking birds and 12 dead birds were found at the Flinders port holding passenger terminal. The previous mortalities were at the Royal yacht squadron. The mortalities may be associated with the recent extreme weather event, over the past 24 hours or brevetoxins.

Please complete AI and NDV ruleout although these are of low likelihood

MACROSCOPY
Pots are labelled bird 1 and bird 2.

Bird 1
1A = lung, kidney, spleen, liver.1B = duodenum, pancreas, jejunum, ileum, caecae1C = trachea, crop, oesophagus, proventriculus1D = air sac

inflammation and necrosis. It is characterized by low to moderate numbers of heterophils with lesser numbers macrophages, lymphocytes and plasma cells admixed with karyorrhectic and eosinophilic cellular debris. Low numbers of heterophils, small lymphocytes are seen around periportal regions. (Mild, multifocal, subacute necrotizing hepatitis)

There is mild autolysis of alimentary sections and pancreas. Aside from this artifact the following changes are seen.
Proventriculus: Nematodes are seen in the lumen (spirurid like nematodes with lateral cords, coelomyarian musculature, pseudocoelom, alimentary tract and smooth cuticle). Multifocally there is a serocellular and haemorrhagic crust over the surface of the mucosa, admixed with heterophils and mixed bacteria (coccoid and short rod bacteria). Multifocally within the mucosa and propria are moderate numbers of heterophils, lymphocytes, plasma cells admixed with fibrin and lytic necrosis.

Air sac: There is moderate autolysis.

Skeletal muscle: Multifocally low numbers of heterophils, lymphocytes and plasma cells admixed with karyorrhectic debris efface low numbers of myocytes, expanding the interstitium between myocytes. (Mild, multifocal, subacute necrotizing myositis)

Bird 2
There is mild multifocal subacute necrotising hepatitis.

Lung: There is moderate diffuse lymphocytic plasmacytic interstitial pneumonia.

Kidney: There is mild autolysis. Aside from this artefact the following findings are described. Multifocally the cortical interstitium is expanded by low numbers of lymphocytes and plasma cells. (Mild, multifocal, subacute to chronic lymphocytic, plasmacytic, interstitial

nephritis)

There is mild autolysis of alimentary sections and pancreas. Aside from this finding the following changes are described.

Proventriculus: There is moderate diffuse proventriculitis with intralesional spirurids.

GRIBBLES VETERINARY PATHOLOGY

[redacted]

[redacted]

Tested on 27/05/25
Reported on 13/08/25 17:30
Referred on 27/05/25 **by:**

[redacted]

Owner:
CORMORANT MORTALITY
FLINDERS PORT PASSENGER T
PORT ADELAIDE 5015

Animal/s:
Wild Birds

DOB: N/A

Collected: 27/05/25 08:00 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

Duodenum: Within the lumen of the duodenum there are multiple cross sections of spirurid nematodes and trematodes (tegument, spongy parenchyma, alimentary tract and gravid uteri with oval ova with operculum). (Enteric nematodiasis (spirurids) and cestodiasis)

Trachea: There is a mild mucus covering the mucosa. There is mild haemorrhage in the lumen (Acute tracheal haemorrhage, likely agonal).

Skeletal muscle: There is mild, multifocal, subacute necrotizing myositis.

Those tissues not described for each bird are unremarkable.

DIAGNOSIS
Bird 1
Lung: Mild, multifocal, subacute, lymphocytic, plasmacytic interstitial pneumonia and oedema
Liver: Mild, multifocal, subacute necrotizing hepatitis
Proventriculus: Proventricular nematodiasis with moderate, diffuse chronic proventriculitis and intralesional mixed bacteria

Skeletal muscle: Mild, multifocal, subacute necrotizing myositis

Bird 2
Liver: Mild, multifocal, subacute necrotizing hepatitis

Lung: Moderate multifocal, subacute, lymphocytic, plasmacytic interstitial pneumonia and oedema

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

Proventriculus: Proventricular nematodiasis with moderate, diffuse chronic proventriculitis and intralesional mixed bacteria

Duodenum: Enteric nematodiasis (spirurids) and cestodiasis

Trachea: Acute tracheal haemorrhage, likely agonal

Skeletal muscle: Mild, multifocal, subacute necrotizing myositis

COMMENTS

GRIBBLES VETERINARY PATHOLOGY

[redacted]

[redacted]

Tested on 27/05/25
Reported on 13/08/25 17:30
Referred on 27/05/25 **by:** [redacted]

Owner:
CORMORANT MORTALITY
FLINDERS PORT PASSENGER T
PORT ADELAIDE 5015

Animal/s:
Wild Birds

DOB: N/A

Collected: 27/05/25 08:00 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

There are a range of disease processes which are similar across both birds.

Both birds have hepatitis. These findings are suggestive of a bacterial hepatitis. Please contact the laboratory in the next week if microbiological culture of one representative bird e.g. bird 1, is required. Additional charges will apply. Special stains are pending to examine for bacteria and fungi.

The interstitial pneumonia is suggestive of a bacterial or viral disease process. AI and NDV are excluded based on the negative PCR results.

Other findings
Intestinal and ventricular spirurids (e.g. Tetramere sp.) and intestinal cestodiasis (e.g. Clinostomum sp; Shamsi et al 2021) are normal findings in cormorants. The proventriculitis in both birds is secondary to spirurid burdens.

The very mild necrotizing myositis may be due to mild subclinical vitamin E or selenium deficiency or historic stress / exertion related rhabdomyolysis.

Bird 2 has a mild interstitial nephritis, suggestive of historic bacteraemia.

Shamsi, S., Barton, D.P., Day, S., Masiga, J., Zhu, X. and McLellan, M., 2021. Characterization of Clinostomum sp.(Trematoda: Clinostomidae) infecting cormorants in south-eastern Australia. Parasitology Research, 120, pp.2793-2803.

Report completed by

[redacted] resident anatomic veterinary pathology

and

[redacted]

Specialist Veterinary Anatomic Pathologist
[redacted]

GRIBBLES VETERINARY PATHOLOGY

[redacted]

[redacted]

Tested on 27/05/25
Reported on 13/08/25 17:30
Referred on 27/05/25 **by:**

[redacted]

Owner:
CORMORANT MORTALITY
FLINDERS PORT PASSENGER T
PORT ADELAIDE 5015

Animal/s:
Wild Birds

DOB: N/A

Collected: 27/05/25 08:00 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

MICROSCOPY 13/6/2025
Cormorant 1
Liver: There are low numbers of Gram positive coccoid and short rod bacteria within the inflammation.

Microorganisms are not seen on PAS (no fungal hyphae or yeast are seen) , Wade fite or Ziehl Neelsen stains (no acid fast bacteria are seen).

Cormorant 2
Liver: Microorganisms are not seen on Gram, PAS (no fungal hyphae or yeast are seen) , Wade fite or Ziehl Neelsen stains (no acid fast bacteria are seen).

DIAGNOSIS
Cormorant 1
Liver: Bacterial hepatitis

COMMENTS
There is a mixed bacterial hepatitis likely secondary to a primary stressor and unlikely the primary cause of death for cormorant 1. Cultures will likely be unrewarding and will probably not identify a dominant bacterial pathogen.

[redacted]

Specialist Veterinary Anatomic Pathologist

[redacted]

Validated by [redacted]

GRIBBLES VETERINARY PATHOLOGY

[redacted]

[redacted]

Tested on 27/05/25
Reported on 13/08/25 17:30
Referred on 27/05/25 **by:**

[redacted]

Owner:
CORMORANT MORTALITY
FLINDERS PORT PASSENGER T
PORT ADELAIDE 5015

Animal/s:
Wild Birds

DOB: N/A

Collected: 27/05/25 08:00 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

SUMMARY DIAGNOSIS
Bird 1
Lung: Mild, multifocal, subacute, lymphocytic, plasmacytic interstitial pneumonia and oedema
Liver: Mild, multifocal, subacute necrotizing hepatitis
Proventriculus: Proventricular nematodiasis with moderate, diffuse chronic proventriculitis and intralesional mixed bacteria
Skeletal muscle: Mild, multifocal, subacute necrotizing myositis

Bird 2
Liver: Mild, multifocal, subacute necrotizing hepatitis
Lung: Moderate multifocal, subacute, lymphocytic, plasmacytic interstitial pneumonia

Kidney: Mild, multifocal, subacute to chronic lymphocytic, plasmacytic, interstitial nephritis
Proventriculus: Proventricular nematodiasis with moderate, diffuse chronic proventriculitis and intralesional mixed bacteria
Duodenum: Enteric nematodiasis (spirurids) and cestodiasis
Trachea: Acute tracheal haemorrhage, likely agonal
Skeletal muscle: Mild, multifocal, subacute necrotizing myositis

COMMENTS
There are a range of disease processes which are similar across both birds. A conclusive cause for the mortalities / severe morbidity are not found but cultures of liver from at least one bird is recommended to further investigate for a bacterial hepatitis. Please contact the laboratory in the next week if microbiological culture of one representative bird e.g. bird 1, is required. Additional charges will apply. The tissues are held for just one month, in line with the laboratories quality assurance processes.

The interstitial pneumonia is suggestive of a bacterial or viral disease process. AI and NDV are excluded based on the negative PCR results.

Other findings
Intestinal and ventricular spirurids (e.g. Tetramere sp.) and intestinal cestodiasis (e.g. Clinostomum sp; Shamsi et al 2021) are normal findings in cormorants. The proventriculitis in both birds is secondary to spirurid burdens.

GRIBBLES VETERINARY PATHOLOGY

[redacted]

[redacted]

Tested on 27/05/25
Reported on 13/08/25 17:30
Referred on 27/05/25 **by:**
[redacted]

Owner:
CORMORANT MORTALITY
FLINDERS PORT PASSENGER T
PORT ADELAIDE 5015

Animal/s:
Wild Birds

DOB: N/A

Collected: 27/05/25 08:00 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

The very mild necrotizing myositis may be due to mild subclinical vitamin E or selenium deficiency or historic stress / exertion related rhabdomyolysis.

Bird 2 has a mild interstitial nephritis, suggestive of historic bacteraemia.

As confirmed by [redacted] no biotoxin or brevetoxin assay is required by [redacted]

[redacted]

Specialist Veterinary Anatomic Pathologist
[redacted]

Validated by [redacted]

Number of samples 12

GRIBBLES VETERINARY PATHOLOGY

[redacted]

[redacted]

Tested on 27/05/25
Reported on 13/08/25 17:30
Referred on 27/05/25 **by:**

[redacted]

Owner:
CORMORANT MORTALITY
FLINDERS PORT PASSENGER T
PORT ADELAIDE 5015

Animal/s:
Wild Birds

DOB: N/A

Collected: 27/05/25 08:00 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

MOLECULAR DIAGNOSTICS

NEWCASTLE DISEASE VIRUS RNA PCR (REAL TIME REVERSE TRANSCRIPTASE)

Specimen type: Pooled cloacal/ tracheal swabs in VTM Number of specimens: 5

SPECIMEN ID	F Gene	M Gene	L Gene
1	Not detected	Not detected	Not detected
2	Not detected	Not detected	Not detected
3	Not detected	Not detected	Not detected
4	Not detected	Not detected	Not detected
5	Not detected	Not detected	Not detected

Validated by [redacted] Laboratory Scientist.

GRIBBLES VETERINARY PATHOLOGY

[redacted]

[redacted]

Tested on 27/05/25
Reported on 13/08/25 17:30
Referred on 27/05/25 **by:**

[redacted]

Owner:
CORMORANT MORTALITY
FLINDERS PORT PASSENGER T
PORT ADELAIDE 5015

Animal/s:
Wild Birds

DOB: N/A

Collected: 27/05/25 08:00 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

MOLECULAR DIAGNOSTICS

INFLUENZA A RNA PCR (REAL TIME REVERSE TRANSCRIPTASE)

Specimen type: Pooled cloacal/tracheal swabs in VTM

SPECIMEN ID	Type A	H5	H7
1	Not detected		
2	Not detected		
3	Not detected		
4	Not detected		
5	Not detected		

Validated by [redacted] Laboratory Scientist.

GRIBBLES VETERINARY PATHOLOGY

[redacted]

[redacted]

Tested on 27/05/25
Reported on 13/08/25 17:30
Referred on 27/05/25 **by:**

[redacted]

Owner:
CORMORANT MORTALITY
FLINDERS PORT PASSENGER T
PORT ADELAIDE 5015

Animal/s:
Wild Birds

DOB: N/A

Collected: 27/05/25 08:00 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

NECROPSY REPORT [redacted]

HISTORY:
This is a summary of the clinical history from the request form. Please refer to the request form for the full history.
This is the second mass mortality event of, it is at Port Adelaide. 12 dead birds were found. 36 moribund birds were found.
The last mortality event of juveniles occurred over Easter. Several dozen unwell looking birds and 12 dead birds were found at the Flinders port holding passenger terminal. The previous mortality's were at the Royal yacht squadron. The mortality may be associated with the recent extreme weather event, over the past 24 hours or brevetoxins.

Please complete AI and NDV ruleout although these are of low likelihood.

SAMPLES SUBMITTED:
5x Cormorants (Phalacrocorax varius), subadults with remnants of juvenile feathers

NECROPSY FINDINGS
All five birds are in good body condition and there are mild post mortem autolytic changes. Birds 1 and 2 are chosen for full necropsy based on the limited post mortem changes in these two birds.

Bird 1 weighs 1.4kg, is a male. Bird 2 weighs 1.5kg and is a female.

Bird 1
Approximately at the level of C3-C4 is a large haematoma that surrounds the vertebrae of Bird 1. The underlying vertebrae is fractured.

The bird is in good body condition (the pectoral muscles are convex).

There are mild-moderate post mortem autolytic changes. The gizzard consists of opaque watery brown-tan fluid with numerous white nematode ascarids, 40-60mm in length. The intestinal contents are pasty brown.

Bird 2
At the base of the neck (approximately at the cervical-thoracic junction) of Bird 2 is also a large a large haematoma that surrounds the fractured vertebrae.
The bird is in good body condition (the pectoral muscles are convex).
There are mild-moderate post mortem autolytic changes. The gizzard

GRIBBLES VETERINARY PATHOLOGY

[redacted]

[redacted]

Tested on 27/05/25
Reported on 13/08/25 17:30
Referred on 27/05/25 **by:**
[redacted]

Owner:
CORMORANT MORTALITY
FLINDERS PORT PASSENGER T
PORT ADELAIDE 5015

Animal/s:
Wild Birds

DOB: N/A

Collected: 27/05/25 08:00 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

consists of opaque watery brown-tan fluid with numerous white nematode ascarids, 40-60mm in length. The intestinal contents are pasty brown.

Birds 3-5: There are no cervical vertebral fractures or haemorrhage around the atlanto-occipital joint (neck). Bird 3 weighs 1.6kg, bird 4 weighs 1.3kg and bird 5 weighs 1.2kg.

GROSS DIAGNOSIS
Birds 1 and 2: Evidence of cervical vertebral fracture and haemorrhage

TESTING
Tracheal and cloacal swabs in virus transport medium , birds 1-5 will be tested as pooled samples by AI and Newcastle disease virus qPCR.

Birds 1 and 2
Formalin fixed tissues will be processed for histopathology as you requested.

Fresh brain (2g), lung (10g), spleen (2g), kidney (2g), liver (60g), brain (2g), heart (5g) are stored at -80 degrees Celcius. We are contacting Analytical Services Tasmania for the quote of biotoxin assay and brevetoxin testing of liver, kidney, lung and brain.

COMMENTS
Vertebral fracture and haemorrhage was the cause of death for birds 1 and 2. Were these culled in the field because they were moribund ?

A cause of death is not evident for birds 3-5. These birds are grossly examined, had no external wounds, no bone fractures and on examination of the coelomic cavity, no gross findings were evident.

As you have requested, histopathology on birds 1 and 2 and AI and NDV q PCR on all birds (pooled testing) is in progress.

Necropsy and report completed by
[redacted]resident anatomic pathology

[redacted]

Specialist Veterinary Anatomic Pathologist
[redacted]

GRIBBLES VETERINARY PATHOLOGY

[redacted]

[redacted]

Tested on 27/05/25
Reported on 13/08/25 17:30
Referred on 27/05/25 **by:**

[redacted]

Owner:
CORMORANT MORTALITY
FLINDERS PORT PASSENGER T
PORT ADELAIDE 5015

Animal/s:
Wild Birds

DOB: N/A

Collected: 27/05/25 08:00 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

Validated by [redacted]

CASE MANAGEMENT DETAILS

Case Managed by:
Case Management Requested by: [redacted]
Case Management Requested on: 28/05/25

Case Details: Mass mortality of cormorants at Port Adelaide

[redacted]

From: [redacted]
Sent: Wednesday, 13 August 2025 5:00 PM
To: [redacted]
Subject: PATH RESULTS: CORMORANT MORTALITY, (Wi) [redacted]

GRIBBLES VETERINARY PATHOLOGY

[redacted]

[redacted]

Tested on 27/05/25
Reported on 13/08/25 17:30
Referred on 27/05/25 **by:** [redacted]

Owner:
CORMORANT MORTALITY
FLINDERS PORT PASSENGER T
PORT ADELAIDE 5015

Animal/s:
Wild Birds

DOB: N/A

Collected: 27/05/25 08:00 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

HISTOPATHOLOGY

REF: [redacted]
ADDITIONAL FINDINGS 13/6/2025

CLINICAL HISTORY
This is a summary of the clinical history from the request form. Please refer to the request form for the full history.
This is the second mass mortality event of, it is at Port Adelaide. 12 dead birds were found. 36 moribund birds were found.
The last mortality event of juveniles occurred over Easter. Several dozen unwell looking birds and 12 dead birds were found at the Flinders port holding passenger terminal. The previous mortalities were at the Royal yacht squadron. The mortalities may be associated with the recent extreme weather event, over the past 24 hours or brevetoxins.

Please complete AI and NDV ruleout although these are of low likelihood

MACROSCOPY
Pots are labelled bird 1 and bird 2.

Bird 1
1A = lung, kidney, spleen, liver.1B = duodenum, pancreas, jejunum, ileum, caecae1C = trachea, crop, oesophagus, proventriculus1D = air sac

[redacted]

From: [redacted]
Sent: Wednesday, 13 August 2025 5:00 PM
To: [redacted]
Subject: PATH RESULTS: brain.1E = skeletal muscle and cardiac muscle, () []

1F = eye

Bird 2
2A = lung, kidney, spleen, liver.2B = duodenum, pancreas, jejunum, ileum, caecae2C = trachea, crop, oesophagus, proventriculus, Bursa of Fabricius2D = air sac + brain.2E = skeletal muscle and cardiac muscle
2F = eye

MICROSCOPY (for both birds): Bird 1
Lung: Diffusely the interstitium of air capillaries is expanded by hyperaemia / congestion. Multifocally there is expansion of the air capillary interstitium by low numbers of lymphocytes and plasma cells. The interstitium surrounding low numbers of arterioles is expanded by oedema. (Mild, multifocal, subacute, lymphocytic, plasmacytic interstitial pneumonia and oedema)

Liver: Within the parenchyma, multifocally and randomly there is

[redacted]

From: [redacted]
Sent: Wednesday, 13 August 2025 5:00 PM
To: [redacted]
Subject: PATH RESULTS: CORMORANT MORTALITY, (Wi) [redacted]

GRIBBLES VETERINARY PATHOLOGY

[redacted]

[redacted]

Tested on 17/06/25
Reported on 13/08/25 17:30
Referred on 27/05/25 **by:**
[redacted]

Owner:
CORMORANT MORTALITY
FLINDERS PORT PASSENGER T
PORT ADELAIDE 5015

Animal/s:
Wild Birds

DOB: N/A

Collected: 27/05/25 08:00 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

MICROBIOLOGY

SPECIMEN: Liver
ANIMAL ID:1

MICROSCOPY
No bacteria seen.

CULTURE
1. Light growth of Escherichia coli
2. Light growth of Mixed organisms

COMMENT: Anaerobes NOT isolated.
No Salmonella sp., Listeria sp. or Yersinia sp. isolated.

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

[redacted]

_____Final Report_____

20/06/25

Validated by [redacted] Laboratory Scientist.

GRIBBLES VETERINARY PATHOLOGY

[redacted]

[redacted]

Tested on 17/06/25
Reported on 13/08/25 17:30
Referred on 27/05/25 **by:**
[redacted]

Owner:
CORMORANT MORTALITY
FLINDERS PORT PASSENGER T
PORT ADELAIDE 5015

Animal/s:
Wild Birds

DOB: N/A

Collected: 27/05/25 08:00 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

MICROBIOLOGY

SPECIMEN: Liver
ANIMAL ID:2

MICROSCOPY
No bacteria seen.

CULTURE
1. Moderate growth of Escherichia coli
2. Moderate growth of Enterococcus sp.
3. Light growth of Clostridium perfringens
4. Moderate growth of Mixed organisms

COMMENT: No Salmonella sp., Listeria sp. or Yersinia sp. isolated.

These organisms were identified using the MALDI-Tof at [redacted]

Final Report
23/06/25
Validated by [redacted] Laboratory Scientist.