Government of South Australia
Department of Primary Industries and Regions

Our ref: CORP F2026/000160
Receipt No: 23903706

CORPORATE SERVICES
Level 20
11 Waymouth Street
Adelaide SA 5000
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2 September 2026

The Hon Dr Nicola Centofanti MLC
Member of the Legislative Council
Parliament House
ADELAIDE SA 5000

Dear Dr Centofanti

Determination under the *Freedom of Information Act 1991*

I refer to your application made under the *Freedom of Information Act 1991* which was received by the Department of Primary Industries and Regions (PIRSA) on 3 August 2026, seeking access to the following:

> *"All records, necropsy requests, and internal department communications concerning the strandings, veterinary assessments, or emergency euthanasias of land mammals (including Macropodidae/kangaroos) and marine mammals along the Fleurieu Peninsula and Adelaide metropolitan coastlines between 1 February 2025 and 31 March 2025."*

Accordingly, the following determination has been finalised.

I have located eight documents that are captured within the scope of your request.

Determination 1

I have determined that access to the following documents is **granted in full**:

Doc No.	Description of document	No. of Pages
5	Department for Environment and Water - Algal bloom wildlife post-mortem report – Western Grey Kangaroos dated 24/3/2025 and 26/3/2025	46
6a	Attachment to Document 6 – Photograph	1

Please note the following with respect to Document 5:

- The necropsy reports are technical documents and require interpretation by a veterinarian or veterinary pathologist.

- The redactions are those as published on the Department for Environment and Water website. They are not exemptions claimed under the Freedom of Information Act by PIRSA.

Determination 2

I have determined that access to the following documents is **granted in part**:

Doc No.	Description of document	No. of Pages
1	Spreadsheet – Marine mammals reported to Fishwatch dated 1/2/2025 to 31/3/2025	12
2	PIRSA Fact Interaction Sheet dated 8/2/2025 – Report of dolphin	1

The information removed from the above documents is pursuant to Clause 6(1) of Schedule 1 of the Freedom of Information Act which states:

> *"**6 - Documents affecting personal affairs***
> *(1) A document is an exempt document if it contains matter the disclosure of which would involve the unreasonable disclosure of information concerning the personal affairs of any person (living or dead)."*

The personal information removed consists of the following:

- Document 1:
  - Names, addresses and mobile telephone numbers of callers to the Fishwatch hotline
  - Report IDs
  - Call reference numbers

- Document 2:
  - Fishwatch Call ID
  - Report ID

The term 'personal affairs' has been held to involve 'matters of private concern to an individual' and the 'composite collection of activities personal to the individual concerned'.

It is considered that members of the public can make a report of suspected animal disease without fear that their identities are released into the public domain.

The report and ID numbers are considered as being the personal affairs of the callers, based on the potential risk of the references being able to correspond to the identity of the callers.

Accordingly, it is considered that disclosure of this information would be an unreasonable intrusion into the privacy rights of the individuals concerned.

Determination 3

I have determined that access to the following documents is **granted in part**:

Doc No.	Description of document	No. of Pages
4	Primary Industries Information Management System (PIIMS) print-out dated 25/3/2025 – Species: Kangaroo or Wallaby	5
7	Primary Industries Information Management System (PIIMS) print-out dated 25/3/2025 – Species: Kangaroo or Wallaby	5

The information removed from the above documents is pursuant to Clause 6(1) and Clause 7(1)(c) of Schedule 1 of the Freedom of Information Act.

The personal information removed pursuant to Clause 6(1) consists of the following:

- Document 4:
  - Names, address and trading name of property owners
  - Registration numbers
  - Name and Submitter ID of a veterinary staff member

- Document 7:
  - Property Identification Code (PIC) number
  - Name and Submitter ID of a veterinary staff member

Accordingly, it is considered that disclosure of this information would be an unreasonable intrusion into the privacy rights of the individuals concerned.

Clause 7(1)(c) states:

> *"**7 – Documents affecting business affairs***
> *(1) A document is an exempt document –*
> *(c) if it contains matter –*
> *(i) consisting of information (other than trade secrets or information referred to in paragraph (b)) concerning the business, professional, commercial or financial affairs of any agency or any other person; and*
> *(ii) the disclosure of which –*
> *(A) could reasonably be expected to have an adverse effect on those affairs or to prejudice the future supply of such information to the Government or to an agency; and*
> *(B) would, on balance, be contrary to the public interest"*

The information removed pursuant to Clause 7(1)(c) consists of the name of a private pathology laboratory and other identifying information as follows:

- Submission numbers
- Clinic IDs
- Laboratory request numbers

In addressing the public interest test requirement for the Clause 7(1)(c) exemption, I have balanced the following factors:

In favour of the public interest:

- Meeting the objects of the Freedom of Information Act favouring access to documents.
- Ensuring optimal use of public resources.
- High level of interest in the accountability of public office holders.
- The importance of transparency and openness and the interest that the public has in the decision-making processes of Government.
- High level of community concern for the impacts of animal disease.

Contrary to the public interest:

- Protecting the business interests of third parties.
- Consent has not been provided from the third party concerned to release this information.
- The continuing relevance of the matters was considered.
- Ensuring that strong working relationships are retained for the betterment of South Australia.
- The release of this information would result in severe consequences for the future of pathology testing for PIRSA.
- It is expected that disclosure of the name of the company would harm business relationships with PIRSA resulting in the company re-considering their future engagement with the agency.
- Disclosure would be expected to prejudice the future supply of information to PIRSA, as the level of trust in handling such information would be substantially compromised.
- Removing the material does not restrict the key information contained within the documents.

Having considered the various factors weighing for and against disclosure, I have determined that disclosure of this information would, on balance, be contrary to the public interest.

Determination 4

I have determined that access to the following document is **granted in part**:

Doc No.	Description of document	No. of Pages
3	Email thread between PIRSA officers dated 22/3/2025 and 24/3/2025 re Emergency Animal Disease hotline call – Kangaroos near Deep Creek	8

The information removed from the above document is pursuant to Clause 6(1) and Clause 9(1) of Schedule 1 of the Freedom of Information Act.

The personal information removed pursuant to Clause 6(1) consists of the following:

- Name, address and mobile telephone number of a property owner
- Names of veterinary staff
- Mobile telephone numbers of Departmental officers
- Landline number of a Departmental officer leading to the identification of the individual concerned
- Name of a Departmental officer from another public sector agency

Consent has not been provided to disclose the names of the individuals and, accordingly, there would be an expectation that their personal information would not be released in this way.

As a mobile telephone number allows a person, including an officer of an agency, to be contacted outside of business hours and is information that is not ordinarily available to the public, the information is taken to concern the personal affairs of an individual.

Accordingly, it is considered that disclosure of this information would be an unreasonable intrusion into the privacy rights of the individuals concerned.

The remaining information removed is outside of the scope of your request.

Clause 9(1) states:

> ***"9—Internal working documents***
> *(1) A document is an exempt document if it contains matter—*
> *(a) that relates to -*
> *(i) any opinion, advice or recommendation that has been obtained, prepared or recorded; or*
> *(ii) any consultation or deliberation that has taken place,*
> *in the course of, or for the purpose of, the decision-making functions of the Government, a Minister or an agency; and*
> *(b) the disclosure of which would, on balance, be contrary to the public interest."*

The information removed pursuant to Clause 9(1) consists of communications between Departmental officers as part of internal decision-making functions of an agency.

In addressing the public interest test for the Clause 9(1) exemption, I have balanced the following factors:

In favour of the public interest:

- Meeting the objects of the Freedom of Information Act favouring access to documents.
- Ensuring optimal use of public resources.
- High level of interest in the accountability of public office holders.
- The importance of transparency and openness and the interest that the public has in the decision-making processes of Government.

- High level of community concern for the impacts of animal disease.

Contrary to the public interest:

- Protection of the deliberative processes of Government.
- The continuing relevance of the matters.
- Providing an agency with the ability to undertake internal consultation without unnecessary interference.
- Release of this information would discourage the flow of communications between agency officers during deliberative processes.
- Allowing internal communications to occur in a reasonably uninhibited manner, where the discussion may be sensitive.
- Disclosing this information may compromise the manner in which information is gathered in the future for the decision-making processes of Government to the detriment of the betterment for South Australia.
- Removing the material does not restrict the key information contained within the document.

Having considered the various factors weighing for and against disclosure, I have determined that disclosure of this information would, on balance, be contrary to the public interest.

Determination 5

I have determined that access to the following document is **granted in part**:

Doc No.	Description of document	No. of Pages
6	Email from Senior Veterinary Officer, Biosecurity SA, PIRSA to PIRSA officers and private laboratory dated 25/3/2025 re Kangaroos at Deep Creek	2

The information removed from the above document is pursuant to Clause 6(1), Clause 7(1)(c) and Clause 9(1) of Schedule 1 of the Freedom of Information Act.

The personal information removed pursuant to Clause 6(1) consists of the following:

- Name and residential address of a property owner
- Names of veterinary staff
- Name and email address of an individual from a private laboratory
- Mobile telephone number of a Departmental officer

Consent has not been provided to disclose the names of the individuals and, accordingly, there would be an expectation that their personal information would not be released in this way.

Accordingly, it is considered that disclosure of this information would be an unreasonable intrusion into the privacy rights of the individuals concerned.

The information removed pursuant to Clause 7(1)(c) consists of the name of a business.

In addressing the public interest test requirement for the Clause 7(1)(c) exemption, I have balanced the following factors:

In favour of the public interest:

- Meeting the objects of the Freedom of Information Act favouring access to documents.
- Ensuring optimal use of public resources.
- High level of interest in the accountability of public office holders.
- The importance of transparency and openness and the interest that the public has in the decision-making processes of Government.
- High level of community concern for the impacts of animal disease.

Contrary to the public interest:

- Protecting the business interests of third parties.
- The continuing relevance of the matters was considered.
- The names of businesses contained within internal communications should not be aired into the public domain where there may be an adverse effect on the companies concerned.
- If third parties cannot be assured of confidentiality by Government with respect to sensitive information, this would have the potential to harm business relationships with Government and hamper future dealings with agencies for the betterment of South Australia.
- Removing the material does not restrict the key information contained within the documents.

Having considered the various factors weighing for and against disclosure, I have determined that disclosure of this information would, on balance, be contrary to the public interest.

The information removed pursuant to Clause 9(1) consists of communications between Departmental officers as part of internal decision-making functions of an agency.

In addressing the public interest test for the Clause 9(1) exemption, I have balanced the following factors:

In favour of the public interest:

- Meeting the objects of the Freedom of Information Act favouring access to documents.
- Ensuring optimal use of public resources.
- High level of interest in the accountability of public office holders.
- The importance of transparency and openness and the interest that the public has in the decision-making processes of Government.
- High level of community concern for the impacts of animal disease.

Contrary to the public interest:

- Protection of the deliberative processes of Government.
- The continuing relevance of the matters.
- Providing an agency with the ability to undertake internal consultation without unnecessary interference.
- Release of this information would discourage the flow of communications between agency officers during deliberative processes.
- Allowing internal communications to occur in a reasonably uninhibited manner, where the discussion may be sensitive.
- Disclosing this information may compromise the manner in which information is gathered in the future for the decision-making processes of Government to the detriment of the betterment for South Australia.
- Removing the material does not restrict the key information contained within the document.

Having considered the various factors weighing for and against disclosure, I have determined that disclosure of this information would, on balance, be contrary to the public interest.

Right of Appeal

If you are dissatisfied with this determination, you are entitled to exercise your right of review and appeal as outlined in the attached documentation Making a Freedom of Information Application | State Records of South Australia (archives.sa.gov.au), by completing the "FOI Application Form for Internal Review of a Determination" and returning the completed form to:

Freedom of Information Principal Officer
Department of Primary Industries and Regions
GPO Box 1671
ADELAIDE SA 5001

or via email PIRSA.FOI@sa.gov.au

FOI Disclosure Log

In accordance with the requirements of Premier and Cabinet Circular PC045, details of your application, and the documents to which you are given access, will be published in PIRSA's disclosure log. A copy of PC045 can be found at http://dpc.sa.gov.au/__data/assets/pdf_file/0019/20818/PC045-Disclosure-Log-Policy.pdf

If you disagree with publication, please advise the undersigned in writing within fourteen calendar days from the date of this determination.

Should you require further information or clarification with respect to this matter, please contact Ms Lisa Farley, Senior Freedom of Information Advisor on 8429 0422 or email PIRSA.FOI@sa.gov.au.

Yours sincerely

Michelle Griffiths
Accredited Freedom of Information Officer
DEPARTMENT OF PRIMARY INDUSTRIES AND REGIONS

id	CallRefNo	InsertDate	ReportType	LicenceNumber	ExemptionNumber	QuotaHolder	LicenceHolderName	RegisteredMasterName	FirstName	Surname	BoatName	PortFrom	PortReturn	RegionName	SantuaryZone	Location	DirectionFromLocation	DistanceFromLocation	LatitudeDegrees	LatitudeMinutes	LongitudeDegrees	LongitudeMinutes	GearLatitudeDegrees	GearLatitudeMinutes	GearLongitudeDegrees	GearLongitudeMinutes	FisheryBlock	AreaFromSZ	AreALandingSZ	TelNumber	MobileTelNumber	PostCode
Clause 6(1)	Clause 6(1)	4/02/2025 13:20	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)							Seaford Beach - To The Left Of The Service Memorial																Clause 6(1)	
Clause 6(1)	Clause 6(1)	7/02/2025 23:59	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)							West Beach																Clause 6(1)	
Clause 6(1)	Clause 6(1)	8/02/2025 1:45	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)							Goolwa Beach A Few 100m Down The Beach Heading Towards The Mouth																Clause 6(1)	
Clause 6(1)	Clause 6(1)	8/02/2025 2:02	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)							Goolwa Beach																Clause 6(1)	
Clause 6(1)	Clause 6(1)	8/02/2025 5:44	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)							Goolwa Beach																Clause 6(1)	
Clause 6(1)	Clause 6(1)	8/02/2025 7:11	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)							West Beach, Adeliade																Clause 6(1)	
Clause 6(1)	Clause 6(1)	8/02/2025 8:08	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)							West Beach																Clause 6(1)	
Clause 6(1)	Clause 6(1)	8/02/2025 8:14	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)							West Beach																Clause 6(1)	
Clause 6(1)	Clause 6(1)	8/02/2025 8:26	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)							West Beach																Clause 6(1)	
Clause 6(1)	Clause 6(1)	8/02/2025 8:27	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)							Goolwa Beach																Clause 6(1)	
Clause 6(1)	Clause 6(1)	8/02/2025 9:00	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)							Ocean Ave And Surf Ave West Beach																Clause 6(1)	

Clause 6(1)	Clause 6(1)	8/02/2025 9:08	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)						In Front Of Harold And Cynthia Anderson Reserve, West Beach															Clause 6(1)		
Clause 6(1)	Clause 6(1)	8/02/2025 9:13	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)	Notprovided					West Beach															Clause 6(1)		
Clause 6(1)	Clause 6(1)	17/02/2025 14:54	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)						161 Esplanade Lrgs Bay															Clause 6(1)		
Clause 6(1)	Clause 6(1)	25/02/2025 11:17	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)						Aldinga Beach															Clause 6(1)		
Clause 6(1)	Clause 6(1)	10/03/2025 9:08	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)						Seacliff Beach															Clause 6(1)		
Clause 6(1)	Clause 6(1)	13/03/2025 9:35	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)						Goolwa Beach															Clause 6(1)		
Clause 6(1)	Clause 6(1)	15/03/2025 8:32	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)						Opposite The Snowdens Beach Area															Clause 6(1)		
Clause 6(1)	Clause 6(1)	18/03/2025 9:28	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)						Middleton Beach Around Skye Avenue															Clause 6(1)		
Clause 6(1)	Clause 6(1)	26/03/2025 16:01	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)						Encounter Bay															Clause 6(1)		
Clause 6(1)	Clause 6(1)	31/03/2025 12:14	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)						Breakwater At Semaphore South Point Malcolm															Clause 6(1)		
Clause 6(1)	Clause 6(1)	31/03/2025 16:34	Dolphins, Seals, Whales, Turtles and Marine Birds						Clause 6(1)						Semaphore South Breakwater, Point Marshall															Clause 6(1)		

Address1	Address2	Suburb	State	VesselNumber	OtherVesselName	TypeOfSecondDiver	AdditionalDiverFirstName	AdditionalDiverSurname	TripStartDate	TripEndDate	TripEndTime	DateSighted	DateOfOffence	DateOfWeighing	DateUnloading	FishingDate	DatesOfTrawling	TotalDays	NightsFishing	DaysLeft	AdditionalLicence	FisherLicence	WeighingOvernight	TotalWeight	ProcessorName1	Weight	ProcessorName2	Weight2	ProcessorName3	Weight3	VehicleRego	BaitSpecies	NetShots	NumberOfPeople	LandingAllCatch	NumberOfBins	TagNumbers	WeightLeft	MoreThan10kgTaken	RegistrationNumbers	CDRNumber	NumberOfLobster	AnyGiantCrab	NumberOfGiantCrab
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SettingPotsAgain	NumberOfPerch	NumberOfWelschGrunter	NumberOfBarcooGrunter	CompanyContactDetails	ReportPageNumber	FreshOrMarine	PestType	NumberSeen	NumberCaught	CatfishSizes	NumberOfRods	BaitedHooksOrLures	ReturnCallRequired	EquipmentType	UnitsOfGear	AnyTEPSMortalities	TEPSSpecies	TEPSQuantity	SharkSpecies	CallBackAgreed	TimeToCall	Message	ReplacementTagNumbers	NumberOfPotsPulled	Depth	NumberLanded	NumberUndersizeReturned	NumberDead	NumberSpawningReturned	NumberOfOctopus	NumberStored	StoringCatch	NumberTakeHome
	0	0	0					0	0		0				0			0				Caller Called In Regards To A Dolphin Stuck In A Rockpool		0	0	0	0	0	0	0	0		0
	0	0	0					0	0		0				0			0				Caller Is Reporting A Small Dead Whale (2m Approx.) On The Beach, Caller Thinks The Tide Will Soon Wash The Carcass Out To Sea But Not Certain		0	0	0	0	0	0	0	0		0
	0	0	0					0	0		0				0			0				Caller Is Reporting A Beached Dolphin, Possibly Injured.		0	0	0	0	0	0	0	0		0
	0	0	0					0	0		0				0			0				They Have A Dolphin On The Beach They Will Stay Until Someone Comes As They Believe The Dolphin Is Injured And The Current Can Not Get It Back Into The Ocean At The Moment. Please Call Them Asap And Come Out		0	0	0	0	0	0	0	0		0
	0	0	0					0	0		0				0			0				Drive Onto The Beach And Turn Left - Few Meters Up From Surf Club		0	0	0	0	0	0	0	0		0
	0	0	0					0	0		0				0			0				Caller Called To Report That There Is A Dead Whale Or Dolphin On The Foreshore Area Of The West Beach Right Across The Henley Sailing Club. Caller Requested For Some One To Have A Look Onto That Asap.		0	0	0	0	0	0	0	0		0
	0	0	0					0	0		0				0			0				Is Calling To Report A Dead Dolphin On West Beach That Has Washed Up On The Beach Overnight. Looks As If It Has Been Attacked And Looks A Little Bloated As Well. Directly West Of Ocean Avenue. Please Have A Look As Soon As Possible.		0	0	0	0	0	0	0	0		0
	0	0	0					0	0		0				0			0				Evan Is Calling From City Of Charles Sturt To Report A Dead Whale 150 Metres North From The Access Ramp At Holdfast Shores Sailing Club At West Beach		0	0	0	0	0	0	0	0		0
	0	0	0					0	0		0				0			0				Evan Calling Back From City Of Charles Sturt With An Updated Address For The Dead Whale Reported. 200 Metres South Of The Beach Access Ramp At Henley Sailing Club West Beach		0	0	0	0	0	0	0	0		0
	0	0	0					0	0		0				0			0				Calling From The Wildlife Welfare Organization To Inform That They Have Received A Report From The Public About A Dolphin Trapped On Goolwa Beach, Approximately 5 Km From The Beach Entrance		0	0	0	0	0	0	0	0		0
	0	0	0					0	0		0				0			0				The Caller Reported A Dead Whale Located Between The Specified Locations And Requested An Investigation, As This Is Not The First Occurrence. The Caller Emphasized The Need For Immediate Removal Due To A Large Event Taking Place In The Area		0	0	0	0	0	0	0	0		0

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StoredVesselLocation	StoredVesselName	GiantCrabWeight	EntireMSFCatch	TakingRoeiToday	ProcessDate	TransferDate	ReceivedDate	ReceiverName	ReceiverLocation	NumberOfReceptacles	LiveWeight	CookedWeight	TailsWeight	OtherWeight	LobsterWeight	SZRockLobsterValuePerKilo	SZGiantCrabValuePerKilo	NZRockLobsterValuePerKilo	NZGiantCrabValuePerKilo	MultipleCatch	ContainersBeingLanded	TagNumbersOfContainersBeingLanded	ContainersRemainingInWater	TagNumbersOfContainersRemainingInWater	ContainersCurrentlyInWater	ContainersToBeStoredInWater	TagNumbersOfContainersToBeStoredInWat	StoringCatchInWater	LandingStoredCatch	NumberOfSchoolAndGummyShark	PermitNumber	MediaOutlet	TransferOutcome1	ReportID	Cancelled	is_read	FactId	NumberOfRLPotsToBeSet	NameOfClientsOfPotsSet
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BreakDownTime	Shark1GummyQuantity	Shark2SchoolQuantity	Shark3GummyQuantity	ConcessionType	ConcessionNumber	LicenceNumberOfCatch	DeliveryDate	DeliveryTime	CallForMeetingOrTraining	HadTroubleUsingApp	AppIssue	StateFishing	NumberOfDays	TEPSEntanglements	SickDeadAbalone	NumberOfAbalone	Zone	NumberTagsUsed	SnapperWeight	KingGeorgeWhitingWeight	GarfishWeight	SquidWeight	CatchRecordOption	NewLicenceNumber	CurrentLicenceNumber	TimeDepartingPointofLanding	HaveAMaterialRisk	DamageStillOccurring	EntangledConfined	Description	Description2_ActionTaken	NumberOfPots	PotsInInnerRegion	DetailsSentTo	SurveyNumber
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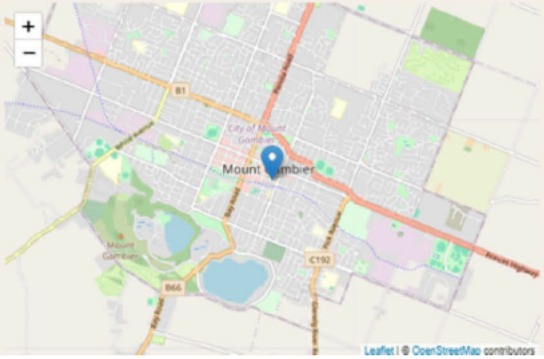
Government of South Australia
Department of Primary Industries and Regions

FACT Interaction

Fishwatch Call ID *	Clause 6(1)
Report ID *	FACT Clause 6(1)
Interaction Date/Time *	08-02-2025 03:36
Reporting Officer *	Barry Tarr
Corroborating Officer	--- None Selected ---
Fishery *	Miscellaneous
Sector *	Recreational
Interactions (People) *	1
Initiative *	Fishwatch Call
Risk *	All other risks
Offence	☐
Outcome *	Caller advise they have found a dolphin on the beach they will stay until someone comes as they believe the dolphin is injured and the current cannot get it back into the ocean at the moment in Goolwa beach. Call sent through to DO as a text message. Return call fail to reach and went through to messagebank. Advice given in voice message to seek organisation responsible for responding to injured wildlife and suggest try Dept of Environment website.
GPS Latitude	-37.832035
GPS Longitude	140.784958 Get Current Location

Show Map



Farley, Lisa (PIRSA)

Out of scope

From: Clause 6(1) (PIRSA) <Clause 6(1) @sa.gov.au>
Sent: Monday, 24 March 2025 9:59 AM
To: Bamhare, Cleopas (PIRSA) <Cleopas.Bamhare@sa.gov.au>; Clause 6(1) (PIRSA) <Clause 6(1) @sa.gov.au>; Poulos, Con (PIRSA) <Con.Poulos@sa.gov.au>; Van-Dissel, Chris (PIRSA) <Chris.Van-Dissel@sa.gov.au>; Buck, Kate (PIRSA) <Kate.Buck@sa.gov.au>
Cc: Dickason, Celia (PIRSA) <Celia.Dickason@sa.gov.au>
Subject: RE: EAD hotline call - Dead and staggering Kangaroos near Deep Creek

OFFICIAL: Sensitive

As directed by the CVO, I plan to visit the property this afternoon and have arranged to meet Clause 6(1) at 1400 at Clause 6(1) and investigate. I have suggested that Clause 6(1) may well investigate as well on wed , to develop field experience and build relationships with DEW. Report pending on this case.
Regards

Clause 6(1) | Senior Veterinary Officer
BiosecuritySA | **Department of Primary Industries and Regions**
Government of South Australia | Bremer Rd, Murray Bridge ,SA 5253
PO Box 469 Murray Bridge SA 5253
M: Clause 6(1) | **E:** Jeremy.rogers@sa.gov.au
pir.sa.gov.au

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From: Bamhare, Cleopas (PIRSA) <Cleopas.Bamhare@sa.gov.au>
Sent: Monday, 24 March 2025 9:24 AM
To: Clause 6(1) (PIRSA) <Clause 6(1) @sa.gov.au>; Clause 6(1) (PIRSA) <Clause 6(1) @sa.gov.au>; Poulos, Con (PIRSA) <Con.Poulos@sa.gov.au>; Van-Dissel, Chris (PIRSA) <Chris.Van-Dissel@sa.gov.au>; Buck, Kate (PIRSA) <Kate.Buck@sa.gov.au>
Cc: Dickason, Celia (PIRSA) <Celia.Dickason@sa.gov.au>
Subject: RE: EAD hotline call - Dead and staggering Kangaroos near Deep Creek

OFFICIAL: Sensitive

Hi All,
I suggest that the visit to Clause 6(1) property which was arranged on Saturday proceed as planned. Depending on the findings we can decided whether another visit to the neighbouring property will be necessary. Cleopas.

Dr Cleopas Bamhare | Advisor to the Chief Veterinary Officer
Animal Biosecurity | Department of Primary Industries and Regions
Government of South Australia | 33 Flemington Street, Glenside 5065
GPO Box 1671 Adelaide SA 5001

T: +61 8 8429 0885 | **M:** Clause 6(1) | **E:** cleopas.bamhare@sa.gov.au
pir.sa.gov.au

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From: Clause 6(1) (PIRSA) <Clause 6(1) @sa.gov.au>
Sent: Monday, 24 March 2025 9:03 AM
To: Clause 6(1) (PIRSA) <Clause 6(1) @sa.gov.au>; Poulos, Con (PIRSA) <Con.Poulos@sa.gov.au>; Van-Dissel, Chris (PIRSA) <Chris.Van-Dissel@sa.gov.au>; Buck, Kate (PIRSA) <Kate.Buck@sa.gov.au>; Bamhare, Cleopas (PIRSA) <Cleopas.Bamhare@sa.gov.au>
Cc: Dickason, Celia (PIRSA) <Celia.Dickason@sa.gov.au>
Subject: RE: EAD hotline call - Dead and staggering Kangaroos near Deep Creek

OFFICIAL: Sensitive

Dear Clause 6(1),
So sorry for the confusion around this. Clause 9(1)
Clause 9(1)
If you are able to get access to the kangaroos from Clause 6(1) property then I think it would be great if we can act on this more swiftly (ie today). We can still go to the other neighbour's (with more sensitivity issues) property on Wednesday (with DEW staff- Clause 6(1) if required.
I'll wait for any further guidance from Celopas but that is my humble opinion 😊.
I'll give you a call Clause 6(1).
Warmest regards,
Clause 6(1)

Please note I finish at 3.10 p.m. on Tuesdays and Wednesdays

Clause 6(1) | Senior Veterinary Officer Disease Surveillance
Biosecurity | **Department of Primary Industries and Regions**
Government of South Australia | 33 Flemington St Glenside SA 5065
GPO Box 1671 Adelaide SA 5001
T: Clause 6(1) | **M:** Clause 6(1) | **E:** Clause 6(1) @sa.gov.au
pir.sa.gov.au

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From: Clause 6(1) (PIRSA) <Clause 6(1) @sa.gov.au>
Sent: Monday, 24 March 2025 8:55 AM
To: Clause 6(1) (PIRSA) <Clause 6(1) @sa.gov.au>; Poulos, Con (PIRSA) <Con.Poulos@sa.gov.au>; Van-Dissel, Chris (PIRSA) <Chris.Van-Dissel@sa.gov.au>; Buck, Kate (PIRSA) <Kate.Buck@sa.gov.au>; Bamhare, Cleopas (PIRSA) <Cleopas.Bamhare@sa.gov.au>
Cc: Dickason, Celia (PIRSA) <Celia.Dickason@sa.gov.au>
Subject: RE: EAD hotline call - Dead and staggering Kangaroos near Deep Creek

OFFICIAL: Sensitive

Hi everyone,
I had a phone call from both Kate, and Cleopas on Saturday, who asked me to investigate. I rang Clause 6(1) (the reporter) and discussed the case with him and we agreed to meet this afternoon to investigate, after 2pm. Clause Clause 9(1) So what is the plan? Do I go ahead , as I arranged , today- or wait for some other day? I already have an appointment on wed afternoon that I cannot shift, so for me it would have to be early wed am.

I look forward to clarity on this.
Thanks

Clause 6(1) | Senior Veterinary Officer
BiosecuritySA | **Department of Primary Industries and Regions**
Government of South Australia | Bremer Rd, Murray Bridge ,SA 5253
PO Box 469 Murray Bridge SA 5253
M: Clause 6(1) | **E:** Clause 6(1) @sa.gov.au
pir.sa.gov.au

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From: Clause 6(1) (PIRSA) <Clause 6(1) @sa.gov.au>
Sent: Monday, 24 March 2025 8:43 AM
To: Poulos, Con (PIRSA) <Con.Poulos@sa.gov.au>; Van-Dissel, Chris (PIRSA) <Chris.Van-Dissel@sa.gov.au>; Buck, Kate (PIRSA) <Kate.Buck@sa.gov.au>; Clause 6(1) (PIRSA) <Clause 6(1) @sa.gov.au>; Bamhare, Cleopas (PIRSA) <Cleopas.Bamhare@sa.gov.au>
Cc: Dickason, Celia (PIRSA) <Celia.Dickason@sa.gov.au>
Subject: RE: EAD hotline call - Dead and staggering Kangaroos near Deep Creek

OFFICIAL: Sensitive

Dear All,

Many thanks for passing on this information.

I became aware of these cases on Friday afternoon, 21st March when I was contacted by colleagues at DEW and also discussed this with Celia. Chris and I tried to organise going Friday but due to:

1.) Sensitivity with the property owners
2.) Safety for PIRSA staff
3.) Availability of DEW staff to accompany us,

we decided to wait until Monday. However, the DEW Ranger, Clause 6(1) who has an good relationship with the property owners (and needs to accompany us due to the sensitivity issues) is on her rostered days off on Monday and Tuesday so we are looking to go Wednesday when she is back on. Damien will likely go and we will probably need a vet (Jeremy or possibly myself) to accompany him.

PIRSA will need to euthenase 1-2 of the worst affected kangaroos and then bring them back to Glenside for necropsy.

It may just be Phalaris staggers (there is a lot around and it is heavily grazed according to the DEW ranger- and not uncommon in this area) but the neurological signs may also be associated with the microalgal bloom (or something else).

Clause 6(1) would like us to please advise a time to meet her down there on Wednesday, so please let me know and I can coordinate with Clause 6(1) I think late morning or early afternoon will be best given Clause 6(1) is on days off now and will need to speak to the property owners first.

Warmest regards,

Clause 6(1)

Please note I finish at 3.10 p.m. on Tuesdays and Wednesdays

Clause 6(1) | Senior Veterinary Officer Disease Surveillance
Biosecurity | **Department of Primary Industries and Regions**
Government of South Australia | 33 Flemington St Glenside SA 5065
GPO Box 1671 Adelaide SA 5001
T: Clause 6(1) | **M:** Clause 6(1) | **E:** lynley.johnson@sa.gov.au
pir.sa.gov.au

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Disclaimer: The information in this email may be confidential and/or legally privileged. Use or disclosure of the information by anyone other than the intended recipient is prohibited and may be unlawful.

From: Poulos, Con (PIRSA) <Con.Poulos@sa.gov.au>
Sent: Saturday, 22 March 2025 2:45 PM
To: Van-Dissel, Chris (PIRSA) <Chris.Van-Dissel@sa.gov.au>; Buck, Kate (PIRSA) <Kate.Buck@sa.gov.au>; Clause 6(1) (PIRSA) <Clause 6(1)@sa.gov.au>; Bamhare, Cleopas (PIRSA) <Cleopas.Bamhare@sa.gov.au>; Clause 6(1) (PIRSA) <Clause 6(1)@sa.gov.au>
Subject: Re: EAD hotline call - Dead and staggering Kangaroos near Deep Creek

OFFICIAL: Sensitive

Thanks everyone

Con

From: Van-Dissel, Chris (PIRSA) <Chris.Van-Dissel@sa.gov.au>
Sent: Saturday, March 22, 2025 2:11 pm
To: Buck, Kate (PIRSA) <Kate.Buck@sa.gov.au>; Clause 6(1) (PIRSA) <Clause 6(1)@sa.gov.au>;

Bamhare, Cleopas (PIRSA) <Cleopas.Bamhare@sa.gov.au>; Clause 6(1) (PIRSA) <Clause 6(1) @sa.gov.au>
Cc: Poulos, Con (PIRSA) <Con.Poulos@sa.gov.au>
Subject: Re: EAD hotline call - Dead and staggering Kangaroos near Deep Creek

OFFICIAL: Sensitive

Hi all,

Just FYI, Clause 6(1) had similar reports yesterday and has arranged a joint investigation with DEW next week.

Ta

C

Get Outlook for iOS

From: Buck, Kate (PIRSA) <Kate.Buck@sa.gov.au>
Sent: Saturday, March 22, 2025 2:07 pm
To: Clause 6(1) (PIRSA); Bamhare, Cleopas (PIRSA)
Cc: Poulos, Con (PIRSA); Van-Dissel, Chris (PIRSA)
Subject: EAD hotline call - Dead and staggering Kangaroos near Deep Creek

OFFICIAL: Sensitive

Hi All,
Clause 6(1) since our conversation today about the dead Kangaroos. I have received calls from Con and Cleopas.

EAD call details (I will put on piims when back home):
Original call from Brad Page, PIRSA who first spoke to the guy reporting sick Kangaroos, and concerned.

Name: Clause 6(1) Clause 6(1)
Incident location: Tunkalilla creek/beach near Deep creek on Fleurieu Peninsula. On Clause 6(1) neighbours property.
On private property.

Dead and staggering Kangaroos.

6-8 dead in the last day or so.
10 more unwell. Out of around 60 in the area. All ages affected.

Symptoms: staggering, loosing balance, from the waist down paralysed or weak & stiff back legs. Some dead, some not. Body condition good, eyes look good, good colour in mouth not anaemic and alert.

Area had 11mls of rain on Thursday.

Byron was concerned about water quality due to algae bloom and dead fish.

Kangaroos not on the beach, difficult for them to get to it.

DEW, Clause 6(1) (not sure of spelling sorry) knows about it.

Regards,
Kate

Get Outlook for iOS

Test Submission Event - Test Submission

Registration

Remove	Details	Type	Registration Id	Trading Name	Status	Expiry Date	Key Party(s)	
☐	✎	Sheep	Clause 6(1)	Clause 6(1)	Active	15/06/2028	Clause 6(1)	Clause 6(1)

Incident

Event Date: 25/03/2025 *

Officer: Clause 6(1) *

Project(s):

Select From...

Administration
Ag. Product
Apiaries
Aquaculture
BJD
Dairy ManaJD
Diagnostic - endemic
EAD

Selected

Disease Surveillance *

Other Parties

Position Details

GPS Point: *Degrees Minutes Seconds*

Latitude

Longitude

Laboratory: Clause 7(1)(c) *

Submission No.: Clause 7(1)(c)

Lab Request No.: Clause 7(1)(c)

Clinic: Primary Industries & Resources SA - SA

Clinic Id: Clause 7(1)(c)

Submitter: Clause 6(1)

Submitter Id: Clause 6(1)

Owner Name: Clause 6(1)

Farm Location

Location Address: Clause 6(1)

Suburb/Town: Clause 6(1) **Postcode:** Clause 6(1)

State: SA **Country:** AUSTRALIA

Date Collected: 24/03/2025 **Reason for Submission:** Disease Surveillance

Species: Kangaroo or Wallaby * **Age:**

Syndrome: Weakness, Depression * **Outbreak Start Date:** dd/mm/yyyy

History / Observations:

affected kangaroos not on this property , but found near the beach sth of here. Tunkalilla South Australia 5203
-35.638595, 138.310652. a significant algal bloom is observed in th eocean and beach at this point and appears to be affecting humans (aerosol) and probably animals

Test(s)

Remove	Add Result	Test Name	Test Code	No. Samples
☐		Case Management	CMA	5
☐		Endoparasites faecal - small animal [VFA]	VPA	5
☐		General Biochem. - small animal & poultry [VBM]	VBI	5
☐		Haematology [VHA]	VBC	5
☐		Necropsy (histo)	NEC	5
☐		Supplementary Histology Report	SUP	5
☐		Zoo Profile - Biochem & Haem Upgraded Profile	ZPM	1

⊕ **Test Code:** **No. Samples:**

Result(s)

Remove	Test Name	No. Samples	Date Out
☐	Case Management	5	dd/mm/yyyy

Remove	Test Name	No. Samples	Date Out
☐	Endoparasites faecal - small animal [VFA]	5	25/03/2025

	Number	Animal / Batch Ids	Comments
Detected:	5		
Not detected:			
Inconclusive:			
Sample problem:			
Laboratory problem:			
Not analysed:			

Remove	Test Name	No. Samples	Date Out
☐	General Biochem. - small animal & poultry [VBM]	5	25/03/2025

	Number	Animal / Batch Ids	Comments
Normal:			
Mild changes:			
Moderate changes:	5		
Severe changes:			
Sample problem:			
Laboratory problem:			

Remove	Test Name	No. Samples	Date Out
☐	Haematology [VHA]	5	28/03/2025

	Number	Animal / Batch Ids	Comments
Normal:			
Mild changes:			
Moderate changes:	5		
Severe changes:			
Sample problem:			
Laboratory problem:			

Remove	Test Name	No. Samples	Date Out
☐	Necropsy (histo)	5	29/03/2025

	Number	Animal / Batch Ids	Comments
No abnormalities detected:	5		
Morphologic abnormality:			
Definitive change:			
Sample problem:			
Laboratory Problem:			

Remove	Test Name	No. Samples	Date Out
☐	Supplementary Histology Report	5	dd/mm/yyyy

	Number	Animal / Batch Ids	Comments
No abnormalities detected:			
Morphologic abnormality:			
Definitive change:			
Sample problem:			

Laboratory Problem:			

Remove	Test Name	No. Samples	Date Out
☐	Zoo Profile - Biochem & Haem Upgraded Profile	1	25/03/2025

	Number	Animal / Batch Ids	Comments
Normal:			
Mild changes:			
Moderate changes:	1		
Severe changes:			
Sample problem:			
Laboratory problem:			

Result Details

Result Details

suspect algal loom involvement but phalaris staggers may be a complicating factor.

Diagnosis

Remove	Disease	Status
☐	Poisoning - Blue Green Algae	Suspect

⊕

Payment Details

Bill to

PIRSA

Do you authorise payment of this submission by PIRSA?

Yes

Comments

Diary

Remove	Copy	Seq No.	Task	Responsible Officer	Due Date	Start Date	Completion Date	Not Req
☐			Summary of lab. results is due	Clause 6(1)	24/04/2025	25/03/2025	23/04/2025	☑
		Notification Basis:	Due Date	Days Before: 0	Sent:			
		Comments:						
⊕		1		Clause 6(1)	dd/mm/yyyy	dd/mm/yyyy		
		Notification Basis:		Days Before:				
		Comments:						

Target Animal(s)

Record specific details of the animals affected by this Event.

Remove	Copy	Animal Id	Species	Breed	Gender	Age Category	Exact Age	Affected	Dead	Inspected	At Risk
☐			Kangaroo or Wallaby		Mixed	Mixed		50	30	100	200

Animal Id:

Species: Sheep **Breed:**

Gender: **Age Category:** **Exact Age:**

No. Affected: **No. Dead:** **No. Inspected:**

No. at Risk:

Whole Herd

Record a summary of all stock.

Species: Sheep **Breed:**

Gender: **Age Category:** **Total No.:**

Comments

Comments

Registration Id? Clause 6(1) Species? Kangaroo or Wallaby

Affected Registration(s)

Algal bloom wildlife post-mortem report

Government of South Australia
Department for Environment and Water

Doc 5

Species – Western Grey Kangaroos

Date collected – 24 and 26 March 2025

Location – Tunkalilla Beach

History relating to the animals

Approximately 70 western grey kangaroos (*Macropus fuliginosus*) were affected on a private property at Tunkalilla Beach from a mob of approximately 200 animals. Seven animals in total were necropsied (post-mortem examination of the whole body) across two days, 24 March 2025 (5 animals) and 26 March 2025 (2 animals).

Clinical examination

Affected animals were all close to the beach. Initial reports from National Parks and Wildlife Services reported Phalaris toxicity as being common in kangaroos in this area. There were more females and joeys affected than males. However, there were also more females and joeys present in the mob than males.

Clinical signs of the affected kangaroos included ataxia (wobbliness), progressing through to recumbency (laying down) with paresis (weakness and not full range of movement) of the forelimbs (arms) and complete paralysis (unable to move) of the hindlimbs (legs). The animals were in lean body condition, appeared distressed and were licking forearms. On 24 March 2025, approximately 15 animals were euthanised on welfare grounds (the recumbent animals) and 5 were necropsied at the site.

Further investigation on 26 March 2025 found a further 30 recumbent animals that were unable to stand, which were euthanised on welfare grounds. Two animals were anaesthetised, had blood collected and then were euthanised, with the whole bodies brought back to the laboratory for investigation.

It was confirmed that there was some dried Phalaris grass present in the area but very little new shooting grass and this did not show any indication of being heavily grazed.

Water samples were collected for analysis from the creek, lagoon and ocean at this site. There were dead fish on the beach. People in the area were experiencing symptoms consistent with the irritant effects of *Karenia* spp.

Necropsy

The necropsy (looking at the whole body) of the five animals euthanised on the 24 March 2025, conducted at the site, showed that the animals were in lean body condition with parasites present in the stomach. Blood and tissue samples including brain were collected.

The necropsies of the two animals euthanised on the 26 March 2025, conducted at the laboratory, showed the animals were in good body condition with low numbers of parasites

Algal bloom wildlife post-mortem report

present in the stomach. Plant material was present in the stomachs of both animals, but the type of plant could not be determined. Stomach worms (nematodes) were found in both animals. These worms were normal findings in wild kangaroos. In one of the kangaroos (kangaroo 1) there was a small volume of fluid (approximately 100 ml) in the abdominal cavity. In the other kangaroo (kangaroo 2), the lungs were mottled red. Tissues were collected to test for botulism and for histopathology (looking at tissues under the microscope for more detailed information). Testing for brevetoxins and other algal biotoxins, a possibility due to the algal bloom, was requested.

Histopathology

Histopathological findings from the 5 kangaroos euthanised on 24 March 2025 revealed no abnormalities in any of the tissue examined. There were a limited number of tissues collected and for this reason disease processes/diseases could not be excluded.

Histopathological findings for the kangaroos euthanised on 26 March 2025 were as follows:

There was hyperaemia in the lungs (increased red colouring due to increased blood flow) and oedema (accumulation of fluid between cells). There were stomach worms. In the kidney there was very mild chronic (long-term) inflammation.

Each section of the spinal cord was examined and moderate numbers of nerve cells had dark brown-black granules in the perikaryon (the cell body). This microscopic finding was consistent with Phalaris toxicity. In the brain, similar black granules were found in nerve cell bodies (sites included midbrain and medulla). There were no other remarkable microscopic (histological) findings.

In addition, in kangaroo 1, the muscle cells showed atrophy (decrease in cell size) and degeneration with very mild inflammation.

Blood results

For the animals euthanised on 24 March 2025, the blood samples collected after euthanasia were haemolysed (red blood cells ruptured), meaning the white and red blood cell counts could not be completed.

On 26 March 2025, the two anaesthetised kangaroos had bloods collected prior to euthanasia. The blood count and parameters appeared normal, but the biochemistry showed elevated creatinine kinase (CK – a muscle enzyme) and aspartate aminotransferase (AST – an enzyme found in the muscle but also the liver and heart and some other tissues). This indicated some muscle damage in the kangaroos, likely due to recumbency (laying down).

Botulinum toxins

The bacteria *Clostridium botulinum* produces toxins (botulinum toxins B and C) that, if ingested, can cause botulism. The stomach contents of the two kangaroos examined on

Algal bloom wildlife post-mortem report

26 March 2025 were tested for botulism using a polymerase chain reaction test (PCR – molecular biology test) that detects the nucleic acid (genes) found in *Cl. botulinum* that produces these toxins. The tests were negative, which does not rule out botulism, as these toxins are often hard to detect.

Algology; Algal counts in water samples

- Creek: *Karenia mikimotoi* 20,460 cells/L (not consistent with death in marine life)
- Lagoon: no toxic species present
- Ocean: *Karenia mikimotoi* 608,000 cells/L (consistent with death in marine life)

Microalgae biotoxin (including brevetoxin) testing

Brevetoxins

Kangaroo 1 - Brevetoxin 3 was found in heart (0.03 mg/kg), kidney (0.01 mg/kg), spleen (0.01 mg/kg) and liver (0.03 mg/kg) samples.

Kangaroo 2 - Brevetoxin 3 was found in the liver at 0.04 mg/kg.

Other algal biotoxins

Kangaroo 1 - Results were below reporting limits.

Kangaroo 2 - Paralytic shellfish toxin (PST, dcGTX4) was found in liver (0.07 mg/kg) and brain (0.05 mg/kg) sample.

Summary

Large numbers (approximately 70 out of 200) of western grey kangaroos were found with difficulty standing at Tunkalilla Beach. The sick kangaroos were all found close to the beach, which was affected by the algal bloom at the time. This was confirmed by detections of *Karenia spp*. in the ocean and adjacent creek.

Several kangaroos were euthanised on welfare grounds, and 7 underwent further examination (necropsy and histopathology). Findings in 5 of the kangaroos were inconclusive, and findings in the other 2 kangaroos were consistent with Phalaris toxicity, which is considered to be the most likely cause of the symptoms. Phalaris toxicity is a well-known disease that affects livestock and wild animals (including kangaroos) and is caused by eating a type of pasture grass (*Phalaris aquatica*) that contains neurotoxins. The risk of Phalaris toxicity is highest with new grass growth, but it can occur at any time of year. Phalaris grass grows throughout South Australia.

Brevetoxin was detected in both kangaroos tested and another algal biotoxin (PST) was also detected in one of the kangaroos. The low levels of brevetoxin and PST detected in this case are considered unlikely to have materially impacted on the health of the kangaroos.

PIIMS Laboratory Results Viewer

Result Details Page

Submission No: [redacted]
Animal/Batch Id:
Owner:

Lab No. - Test: [redacted]
Submitter:

PIC:
Species: Kangaroo or Wallaby
Age:

Submitter Id: [redacted]
Clinic Phone:
Submitted: 25/03/2025

Test: NEC - NECROPSY
Reported: 29/03/2025 15:56

HISTOPATHOLOGY FROM NECROPSY

REF: [redacted]

CLINICAL HISTORY
Please refer to the clinical history on the request form and the emails from [redacted] and [redacted]. A brief summary of the clinical history;
24/3/25
On the property , near Deep Creek, [redacted] there were about 40 unwell/ staggering / weak eastern grey kangaroos in a small area near the beach. The kangaroos appear to be weak and did not have neurological signs.
The syndrome appeared after the algal bloom event reported a week or so ago, and the only drinking water available to these kangaroos(a freshwater creek emptying into a small lagoon on the beach) was clearly contaminated at some point (evidence of staining and dead sea-life on sand around the lagoon).
The available pasture was predominantly kikuyu.
On necropsy one animal had abundant ascarid-like worms. 2/5 roos had heavy worm burdens, 3/5 did not appear to have heavy worm burdens.

MACROSCOPY
K1
A-E: Liver, kidney, heart, stomach, brain (cerebrum, thalamus, hippocampus, basal ganglia), spleen

K2
F-H: Brain (cerebrum, thalamus, hippocampus), liver, stomach

K3
I-K brain (cerebrum, thalamus, hippocampus, basal ganglia), liver, kidney

K4
L-N brain (cerebrum, thalamus, hippocampus, basal ganglia and medulla) liver, heart, stomach

MICROSCOPY
K1
The liver, kidney, heart, stomach, and brain appear normal.

K2
The brain, liver, and stomach appear normal.

K3
The brain, liver, and kidney appear normal.

K4
The brain liver, heart, and stomach appear normal.

DIAGNOSIS
K1-4
All the tissues appear histologically normal

COMMENTS
There are no histological findings to explain morbidity for these kangaroos.

Toxicity from the dinoflagellate Karenia mikitomoi blooms is a possible cause for their morbidity.

Water samples (both fresh and seawater) from the affected site have been sent to SASQAP for algal count testing. Karenia mikimotoi blooms have been reported to cause morbidity in a range of animal but predominantly marine animals. The causative toxin is not known.

Li X, Yan T, Yu R, Zhou M. A review of Karenia mikimotoi: Bloom events, physiology, toxicity and toxic mechanism. Harmful Algae. 2019 Dec 1;90:101702.

[redacted]
Specialist Veterinary Anatomic Pathologist
[redacted]

Validated by [redacted].

This request has other tests in progress at the time of reporting

Test: NEC - NECROPSY Reported: 29/03/2025 15:56

Validated by [redacted].

Test: NEC - NECROPSY Reported: 29/03/2025 15:56

HISTOPATHOLOGY FROM NECROPSY

REF: [redacted]

CLINICAL HISTORY
Please refer to the clinical history on the request form and the emails from [redacted] and [redacted]. A brief summary of the clinical history;
24/3/25
On the property , near Deep Creek, [redacted] there were about 40 unwell/ staggering / weak eastern grey kangaroos in a small area near the beach. The kangaroos appear to be weak and did not have neurological signs.
The syndrome appeared after the algal bloom event reported a week or so ago, and the only drinking water available to these kangaroos(a freshwater creek emptying into a small lagoon on the beach) was clearly contaminated at some point (evidence of staining and dead sea-life on sand around the lagoon).
The available pasture was predominantly kikuyu.
On necropsy one animal had abundant ascarid-like worms. 2/5 roos had heavy worm burdens, 3/5 did not appear to have heavy worm burdens.

MACROSCOPY
K1
A-E: Liver, kidney, heart, stomach, brain (cerebrum, thalamus, hippocampus, basal ganglia), spleen

K2
F-H: Brain (cerebrum, thalamus, hippocampus), liver, stomach

K3
I-K brain (cerebrum, thalamus, hippocampus, basal ganglia), liver, kidney

[redacted]

K4
L-N brain (cerebrum, thalamus, hippocampus, basal ganglia and medulla)
liver, heart, stomach

MICROSCOPY
K1
The liver, kidney, heart, stomach, and brain appear normal.

K2
The brain, liver, and stomach appear normal.

K3
The brain, liver, and kidney appear normal.

K4
The brain liver, heart, and stomach appear normal.

DIAGNOSIS
K1-4
All the tissues appear histologically normal

COMMENTS
There are no histological findings to explain morbidity for these kangaroos.

Toxicity from the dinoflagellate Karenia mikitomoi blooms is a possible cause for their morbidity.

Water samples (both fresh and seawater) from the affected site have been sent to SASQAP for algal count testing. Karenia mikimotoi blooms have been reported to cause morbidity in a range of animal but predominantly marine animals. The causative toxin is not known.

Li X, Yan T, Yu R, Zhou M. A review of Karenia mikimotoi: Bloom events, physiology, toxicity and toxic mechanism. Harmful Algae. 2019 Dec 1;90:101702.

[redacted]
Specialist Veterinary Anatomic Pathologist
[redacted]

Validated by [redacted].

This request has other tests in progress at the time of reporting

Test: NEC - NECROPSY Reported: 29/03/2025 15:56

Validated by [redacted].

[redacted]

PIIMS Laboratory Results Viewer

Result Details Page

Submission No: [redacted]
Animal/Batch Id:
Owner:

Lab No. - Test: [redacted]
Submitter:

PIC:
Species: Kangaroo or Wallaby
Age:

Submitter Id: [redacted]
Clinic Phone:
Submitted: 25/03/2025

Test: VBM - VETERINARY BIOCHEM MASTER Reported: 25/03/2025 17:27

```
GENERAL BIOCHEMISTRY                    SPECIMEN : SERUM
 Sodium      137 mmol/L                   Protein    64    g/L
 Potassium  16.5 mmol/L                   Albumin    41    g/L
 Na/K        8.3
 Chloride     86 mmol/L                   Globulin   23    g/L
 Bicarb.      53 mmol/L                   T. Bil.   < 1 umol/L
 Anion Gap    14 mmol/L                   Alk Phos  306    U/L
 Urea       17.5 mmol/L                   ALT       243    U/L
                                          GGT        17    U/L
 Creat.      216 umol/L                   AST       750    U/L
 Calcium    2.29 mmol/L
 Phosphate  3.44 mmol/L                   CK       27310   U/L
 Magnesium   1.0 mmol/L                   Chol.     1.9 mmol/L


 SERUM INDICES (Clear/+/++/+++/++++)
 Icterus index      Clear
 Lipaemia index     Clear
 Haemolysis index   ++++

 The sample is severely haemolysed and biochemistry results may be
 significantly affected.




 INTERIM REPORT- Further results and pathologist interpretation to
 follow.

This request has other tests in progress at the time of reporting
```

Test: VBM - VETERINARY BIOCHEM MASTER Reported: 25/03/2025 17:27

```
GENERAL BIOCHEMISTRY                    SPECIMEN : SERUM
 Sodium      137 mmol/L                   Protein    64    g/L
 Potassium  16.5 mmol/L                   Albumin    41    g/L
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 Chloride     86 mmol/L                   Globulin   23    g/L
 Bicarb.      53 mmol/L                   T. Bil.   < 1 umol/L
 Anion Gap    14 mmol/L                   Alk Phos  306    U/L
 Urea       17.5 mmol/L                   ALT       243    U/L
                                          GGT        17    U/L
 Creat.      216 umol/L                   AST       750    U/L
 Calcium    2.29 mmol/L
 Phosphate  3.44 mmol/L                   CK       27310   U/L
 Magnesium   1.0 mmol/L                   Chol.     1.9 mmol/L


 SERUM INDICES (Clear/+/++/+++/++++)
```

```
   Icterus index      Clear
   Lipaemia index     Clear
   Haemolysis index   ++++

   The sample is severely haemolysed and biochemistry results may be
   significantly affected.




  INTERIM REPORT- Further results and pathologist interpretation to
  follow.

This request has other tests in progress at the time of reporting
```

Test: VBM - VETERINARY BIOCHEM MASTER Reported: 25/03/2025 17:27

```
  GENERAL BIOCHEMISTRY                    SPECIMEN : SERUM
   Sodium      137 mmol/L                   Protein    64    g/L
   Potassium  16.5 mmol/L                   Albumin    41    g/L
   Na/K        8.3
   Chloride     86 mmol/L                   Globulin   23    g/L
   Bicarb.      53 mmol/L                   T. Bil.   < 1 umol/L
   Anion Gap    14 mmol/L                   Alk Phos  306    U/L
   Urea       17.5 mmol/L                   ALT       243    U/L
                                            GGT        17    U/L
   Creat.      216 umol/L                   AST       750    U/L
   Calcium    2.29 mmol/L
   Phosphate  3.44 mmol/L                   CK       27310   U/L
   Magnesium   1.0 mmol/L                   Chol.     1.9 mmol/L


   SERUM INDICES (Clear/+/++/+++/++++)
   Icterus index      Clear
   Lipaemia index     Clear
   Haemolysis index   ++++

   The sample is severely haemolysed and biochemistry results may be
   significantly affected.




  INTERIM REPORT- Further results and pathologist interpretation to
  follow.

This request has other tests in progress at the time of reporting
```

Test: VBM - VETERINARY BIOCHEM MASTER Reported: 25/03/2025 17:27

```
  GENERAL BIOCHEMISTRY                    SPECIMEN : SERUM
   Sodium      137 mmol/L                   Protein    64    g/L
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   Na/K        8.3
   Chloride     86 mmol/L                   Globulin   23    g/L
   Bicarb.      53 mmol/L                   T. Bil.   < 1 umol/L
   Anion Gap    14 mmol/L                   Alk Phos  306    U/L
   Urea       17.5 mmol/L                   ALT       243    U/L
                                            GGT        17    U/L
   Creat.      216 umol/L                   AST       750    U/L
   Calcium    2.29 mmol/L
   Phosphate  3.44 mmol/L                   CK       27310   U/L
   Magnesium   1.0 mmol/L                   Chol.     1.9 mmol/L


   SERUM INDICES (Clear/+/++/+++/++++)
   Icterus index      Clear
```

```
Lipaemia index     Clear
Haemolysis index   ++++

The sample is severely haemolysed and biochemistry results may be
significantly affected.
```

INTERIM REPORT- Further results and pathologist interpretation to follow.

This request has other tests in progress at the time of reporting

PIIMS Laboratory Results Viewer

Result Details Page

Submission No: [redacted]
Animal/Batch Id:
Owner:

Lab No. - Test: [redacted]
Submitter:

PIC:
Species: Kangaroo or Wallaby
Age:

Submitter Id: [redacted]
Clinic Phone:
Submitted: 25/03/2025

Test: ZPM - ZOO PROFILE - BIOCHEMISTRY & HAEMATOLOGY Reported: 26/03/2025 08:21

STANDARD PROFILE ZOO **SPECIMEN : BLOOD**

Date: **24/03/25**
Coll. Time: NS
Lab Number: [redacted]

HAEMATOLOGY

GENERAL BIOCHEMISTRY **SPECIMEN : SERUM**

Alk.Phosph.	1638	U/L
Inorg.Phosph.	4.18	mmol/L
Calcium	2.61	mmol/L
Magnesium	1.2	mmol/L
Total Bili.	< 1	umol/L
ALT	167	U/L
AST (SGOT)	578	U/L
GGT	18	U/L
CK	34554	U/L
Total Protein	70	g/L
Albumin	35	g/L
Globulins	35	g/L
Sodium	139	mmol/L
Potassium	17.3	mmol/L
Chloride	98	mmol/L
Bicarbonate	43	mmol/L
Anion Gap	15	mmol/L
Urea	19.7	mmol/L
Creatinine	158	umol/L
Cholesterol	1.7	mmol/L
Glucose	1	mmol/L

SERUM INDICES (Clear/+/++/+++/++++)

Icterus index	Clear
Lipaemia index	Clear
Haemolysis index	+

Laboratory note: Glucose will decrease over time in non-preserved samples and may result in false low values

Validated by [redacted], Veterinary Pathology Resident.

All tests on this request have now been completed

Test: ZPM - ZOO PROFILE - BIOCHEMISTRY & HAEMATOLOGY Reported: 26/03/2025 08:21

Validated by [redacted], Veterinary Pathology Resident.

Test: ZPM - ZOO PROFILE - BIOCHEMISTRY & HAEMATOLOGY Reported: 26/03/2025 08:21

STANDARD PROFILE ZOO **SPECIMEN : BLOOD**

Date: **24/03/25**
Coll. Time: NS
Lab Number: [redacted]

HAEMATOLOGY

GENERAL BIOCHEMISTRY **SPECIMEN : SERUM**

Alk.Phosph.	1638	U/L
Inorg.Phosph.	4.18	mmol/L
Calcium	2.61	mmol/L
Magnesium	1.2	mmol/L
Total Bili.	< 1	umol/L
ALT	167	U/L
AST (SGOT)	578	U/L
GGT	18	U/L
CK	34554	U/L
Total Protein	70	g/L
Albumin	35	g/L
Globulins	35	g/L
Sodium	139	mmol/L
Potassium	17.3	mmol/L
Chloride	98	mmol/L
Bicarbonate	43	mmol/L
Anion Gap	15	mmol/L
Urea	19.7	mmol/L
Creatinine	158	umol/L
Cholesterol	1.7	mmol/L
Glucose	1	mmol/L

SERUM INDICES (Clear/+/++/+++/++++)

Icterus index	Clear
Lipaemia index	Clear
Haemolysis index	+

Laboratory note: Glucose will decrease over time in non-preserved samples and may result in false low values

Validated by [redacted], Veterinary Pathology Resident.

All tests on this request have now been completed

Test: ZPM - ZOO PROFILE - BIOCHEMISTRY & HAEMATOLOGY Reported: 26/03/2025 08:21

Validated by [redacted], Veterinary Pathology Resident.

PIIMS Laboratory Results Viewer

Result Details Page

Submission No: [redacted]
Animal/Batch Id:
Owner:

Lab No. - Test: [redacted]
Submitter:

PIC:
Species: Kangaroo or Wallaby
Age:

Submitter Id: [redacted]
Clinic Phone:
Submitted: 25/03/2025

Test: VFA - VET. FAECES STUDIES Reported: 27/03/2025 12:14

FAECAL ENDOPARASITES

MICROSCOPY

Leucocytes not detected. Erythrocytes detected.
Giardia Antigen Test: NEGATIVE

Cryptosporidium Antigen Test: NEGATIVE

Modified ZN stain for Cryptosporidium: NEGATIVE

Strongyle eggs seen in floatation.

_____Final Report_____
27/03/25
Validated by [redacted], Laboratory Scientist.

This request has other tests in progress at the time of reporting

Test: VFA - VET. FAECES STUDIES Reported: 27/03/2025 12:14

_____Final Report_____
27/03/25
Validated by [redacted], Laboratory Scientist.

Test: VFA - VET. FAECES STUDIES Reported: 27/03/2025 12:14

FAECAL ENDOPARASITES

MICROSCOPY

Leucocytes not detected. Erythrocytes detected.
Giardia Antigen Test: NEGATIVE

Cryptosporidium Antigen Test: NEGATIVE

Modified ZN stain for Cryptosporidium: NEGATIVE

Strongyle eggs seen in floatation.

[redacted]

_____Final Report_____
27/03/25
Validated by [redacted], Laboratory Scientist.

This request has other tests in progress at the time of reporting

Test: VFA - VET. FAECES STUDIES Reported: 27/03/2025 12:14

_____Final Report_____
27/03/25
Validated by [redacted], Laboratory Scientist.

Test: VFA - VET. FAECES STUDIES Reported: 26/03/2025 13:20

FAECAL ENDOPARASITES

MICROSCOPY
Leucocytes not detected. Erythrocytes detected.
Giardia Antigen Test: NEGATIVE

Cryptosporidium Antigen Test: NEGATIVE

Modified ZN stain for Cryptosporidium: to follow

Strongyle eggs seen in floatation.

Validated by [redacted], Laboratory Scientist.

This request has other tests in progress at the time of reporting

Test: VFA - VET. FAECES STUDIES Reported: 26/03/2025 13:20

FAECAL ENDOPARASITES

MICROSCOPY
Leucocytes not detected. Erythrocytes detected.
Giardia Antigen Test: NEGATIVE

Cryptosporidium Antigen Test: NEGATIVE

Modified ZN stain for Cryptosporidium: to follow

Strongyle eggs seen in floatation.

Validated by [redacted], Laboratory Scientist.

This request has other tests in progress at the time of reporting

Test: VFA - VET. FAECES STUDIES Reported: 26/03/2025 13:20

Validated by [redacted], Laboratory Scientist.

Test: VFA - VET. FAECES STUDIES Reported: 26/03/2025 13:20

Validated by [redacted], Laboratory Scientist.

PIIMS Laboratory Results Viewer

Result Details Page

Submission No: [redacted]
Animal/Batch Id: KANGAROO MORTALITY

Lab No. - Test: [redacted]

Owner:

Submitter:

PIC:

Submitter Id: [redacted]

Species: Kangaroo or Wallaby

Clinic Phone:

Age:

Submitted: 26/03/2025

Test: GP - GROSS PATHOLOGY

Reported: 29/03/2025 18:08

NECROPSY REPORT

FINAL REPORT

CLINICAL HISTORY
Please refer to the clinical history on the request form and the emails from [redacted] and [redacted]. A brief summary of the clinical history;
24/3/25
On the property , near Deep Creek, [redacted] there were about 40 unwell/ staggering / weak eastern grey kangaroos in a small area near the beach. The kangaroos appear to be weak and did not have neurological signs.
The syndrome appeared after the algal bloom event reported a week or so ago, and the only drinking water available to these kangaroos(a freshwater creek emptying into a small lagoon on the beach) was clearly contaminated at some point (evidence of staining and dead sea-life on sand around the lagoon).
The available pasture was predominantly kikuyu.
On necropsy one animal had abundant ascarid-like worms. 2/5 roos had heavy worm burdens, 3/5 did not appear to have heavy worm burdens.

26/5/25
70 (mainly juveniles) of 200 kangaroos were affected. The affected animals were weak or recumbent. Two animals were euthanized and submitted to [redacted].
SAMPLES SUBMITTED
Two adult female eastern grey kangaroos (Macropus giganteus)

NECROPSY FINDINGS
The animals are allocated numbers 1 and 2 at the laboratory. The descriptions refer to both animals except where noted.

There animals are in good body condition. There are minimal post mortem autolytic changes. There are low numbers of strongyle-like nematodes (10 to 35mm long, pale white) in the stomach. The stomach contains abundant moist green ingesta. No particular leaf type can be determined.

Kangaroo 1
The animal weighs 24.3kg. There is 100ml of translucent red tinged fluid in the abdomen. The total protein of the fluid is 20g/L.

Kangaroo 2
The animal weighs 33kg. The lungs are widespread mottled red.

The spinal cords will be removed from each animal tomorrow.

GROSS SUMMARY
Kangaroo 1
Mild ascites
Gastric nematodiasis

Kangaroo 2
Gastric nematodiasis

SAMPLES COLLECTED & TESTING
Formalin fixed tissues are being processed for histopathology.

Freshwater (labelled creek) will be sent for blue-green algae testing.

We are in the progress of identifying the laboratory in South Australia which can test algal counts and identify algal species in Seawater (for the samples labelled ocean and lagoon).

As requested liver, kidney, spleen, heart, lung, brain, stomach contents and faeces are stored in case additional testing is required.

COMMENTS
There are no remarkable gross findings to explain the weakness and recumbency for the kangaroos. The mottled red pattern in the lungs of kangaroo 2 may be mild vascular hyperaemia / congestion, which may be agonal processes. The spinal cords will be removed tomorrow and a further report will be issued.

We will prioritized algal testing of the water and complete histopathology. Haematology and biochemistry are also underway.

NECROPSY FINDINGS 29/3/2025
The vertebral canals and spinal cords from both animals appear grossly normal.

[redacted]
Specialist Veterinary Anatomic Pathologist
[redacted]

Validated by [redacted].

This request has other tests in progress at the time of reporting

Test: GP - GROSS PATHOLOGY Reported: 29/03/2025 18:08

Validated by [redacted].

Test: GP - GROSS PATHOLOGY Reported: 29/03/2025 18:08

NECROPSY REPORT

FINAL REPORT

CLINICAL HISTORY
Please refer to the clinical history on the request form and the emails from [redacted] and [redacted]. A brief summary of the clinical history;
24/3/25
On the property , near Deep Creek, [redacted] there were about 40 unwell/ staggering / weak eastern grey kangaroos in a small area near the beach. The kangaroos appear to be weak and did not have neurological signs.
The syndrome appeared after the algal bloom event reported a week or so ago, and the only drinking water available to these kangaroos(a freshwater creek emptying into a small lagoon on the beach) was clearly contaminated at some point (evidence of staining and dead sea-life on sand around the lagoon).
The available pasture was predominantly kikuyu.
On necropsy one animal had abundant ascarid-like worms. 2/5 roos had

heavy worm burdens, 3/5 did not appear to have heavy worm burdens.

26/5/25
70 (mainly juveniles) of 200 kangaroos were affected. The affected animals were weak or recumbent. Two animals were euthanized and submitted to [redacted].
SAMPLES SUBMITTED
Two adult female eastern grey kangaroos (Macropus giganteus)

NECROPSY FINDINGS
The animals are allocated numbers 1 and 2 at the laboratory. The descriptions refer to both animals except where noted.

There animals are in good body condition. There are minimal post mortem autolytic changes. There are low numbers of strongyle-like nematodes (10 to 35mm long, pale white) in the stomach. The stomach contains abundant moist green ingesta. No particular leaf type can be determined.

Kangaroo 1
The animal weighs 24.3kg. There is 100ml of translucent red tinged fluid in the abdomen. The total protein of the fluid is 20g/L.

Kangaroo 2
The animal weighs 33kg. The lungs are widespread mottled red.

The spinal cords will be removed from each animal tomorrow.

GROSS SUMMARY
Kangaroo 1
Mild ascites
Gastric nematodiasis

Kangaroo 2
Gastric nematodiasis

SAMPLES COLLECTED & TESTING
Formalin fixed tissues are being processed for histopathology.

Freshwater (labelled creek) will be sent for blue-green algae testing.

We are in the progress of identifying the laboratory in South Australia which can test algal counts and identify algal species in Seawater (for the samples labelled ocean and lagoon).

As requested liver, kidney, spleen, heart, lung, brain, stomach contents and faeces are stored in case additional testing is required.

COMMENTS
There are no remarkable gross findings to explain the weakness and recumbency for the kangaroos. The mottled red pattern in the lungs of kangaroo 2 may be mild vascular hyperaemia / congestion, which may be agonal processes. The spinal cords will be removed tomorrow and a further report will be issued.

We will prioritized algal testing of the water and complete histopathology. Haematology and biochemistry are also underway.

NECROPSY FINDINGS 29/3/2025
The vertebral canals and spinal cords from both animals appear grossly normal.

[redacted]
Specialist Veterinary Anatomic Pathologist
[redacted]

Validated by [redacted].

This request has other tests in progress at the time of reporting

Test: GP - GROSS PATHOLOGY Reported: 29/03/2025 18:08

Validated by [redacted].

Test: GP - GROSS PATHOLOGY Reported: 27/03/2025 13:34

NECROPSY REPORT

Interim report
CLINICAL HISTORY
Please refer to the clinical history on the request form and the emails from [redacted] and [redacted]. A brief summary of the clinical history;
24/3/25
On the property , near Deep Creek, [redacted] there were about 40 unwell/ staggering / weak eastern grey kangaroos in a small area near the beach. The kangaroos appear to be weak and did not have neurological signs.
The syndrome appeared after the algal bloom event reported a week or so ago, and the only drinking water available to these kangaroos(a freshwater creek emptying into a small lagoon on the beach) was clearly contaminated at some point (evidence of staining and dead sea-life on sand around the lagoon).
The available pasture was predominantly kikuyu.
On necropsy one animal had abundant ascarid-like worms. 2/5 roos had heavy worm burdens, 3/5 did not appear to have heavy worm burdens.

26/5/25
70 (mainly juveniles) of 200 kangaroos were affected. The affected animals were weak or recumbent. Two animals were euthanized and submitted to [redacted].
SAMPLES SUBMITTED
Two adult female eastern grey kangaroos (Macropus giganteus)

NECROPSY FINDINGS
The animals are allocated numbers 1 and 2 at the laboratory. The descriptions refer to both animals except where noted.

There animals are in good body condition. There are minimal post mortem autolytic changes. There are low numbers of strongyle-like nematodes (10 to 35mm long, pale white) in the stomach. The stomach contains abundant moist green ingesta. No particular leaf type can be determined.

Kangaroo 1
The animal weighs 24.3kg. There is 100ml of translucent red tinged fluid in the abdomen. The total protein of the fluid is 20g/L.

Kangaroo 2
The animal weighs 33kg.

The spinal cords will be removed from each animal tomorrow.

GROSS SUMMARY
Kangaroo 1
Mild ascites
Gastric nematodiasis

Kangaroo 2
Gastric nematodiasis

SAMPLES COLLECTED & TESTING
Formalin fixed tissues are being processed for histopathology.

Freshwater (labelled creek) will be sent for blue-green algae testing.

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As requested liver, kidney, spleen, heart, lung, brain, stomach contents and faeces are stored in case additional testing is required.

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There are no remarkable gross findings to explain the weakness and recumbency for the kangaroos. The spinal cords will be removed tomorrow and a further report will be issued.

We will prioritized algal testing of the water and complete histopathology. Haematology and biochemistry are also underway.

[redacted]
Specialist Veterinary Anatomic Pathologist
[redacted]

Validated by [redacted].

This request has other tests in progress at the time of reporting

Test: GP - GROSS PATHOLOGY Reported: 27/03/2025 13:34

Validated by [redacted].

Test: GP - GROSS PATHOLOGY Reported: 27/03/2025 13:34

NECROPSY REPORT

Interim report
CLINICAL HISTORY
Please refer to the clinical history on the request form and the emails from [redacted] and [redacted]. A brief summary of the clinical history;
24/3/25
On the property , near Deep Creek, [redacted] there were about 40 unwell/ staggering / weak eastern grey kangaroos in a small area near the beach. The kangaroos appear to be weak and did not have neurological signs.
The syndrome appeared after the algal bloom event reported a week or so ago, and the only drinking water available to these kangaroos(a freshwater creek emptying into a small lagoon on the beach) was clearly contaminated at some point (evidence of staining and dead sea-life on sand around the lagoon).
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On necropsy one animal had abundant ascarid-like worms. 2/5 roos had heavy worm burdens, 3/5 did not appear to have heavy worm burdens.

26/5/25
70 (mainly juveniles) of 200 kangaroos were affected. The affected animals were weak or recumbent. Two animals were euthanized and submitted to [redacted].
SAMPLES SUBMITTED
Two adult female eastern grey kangaroos (Macropus giganteus)

NECROPSY FINDINGS
The animals are allocated numbers 1 and 2 at the laboratory. The descriptions refer to both animals except where noted.

There animals are in good body condition. There are minimal post mortem autolytic changes. There are low numbers of strongyle-like nematodes (10 to 35mm long, pale white) in the stomach. The stomach contains abundant

moist green ingesta. No particular leaf type can be determined.

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COMMENTS
There are no remarkable gross findings to explain the weakness and recumbency for the kangaroos. The spinal cords will be removed tomorrow and a further report will be issued.

We will prioritized algal testing of the water and complete histopathology. Haematology and biochemistry are also underway.

[redacted]
Specialist Veterinary Anatomic Pathologist
[redacted]

Validated by [redacted].

This request has other tests in progress at the time of reporting

Test: GP - GROSS PATHOLOGY Reported: 27/03/2025 13:34

Validated by [redacted].

PIIMS Laboratory Results Viewer

Result Details Page

Submission No: [redacted]
Animal/Batch Id: KANGAROO MORTALITY

Lab No. - Test: [redacted]

Owner:

Submitter:

PIC:

Submitter Id: [redacted]

Species: Kangaroo or Wallaby

Clinic Phone:

Age:

Submitted: 26/03/2025

Test: NEC - NECROPSY

Reported: 03/04/2025 19:27

HISTOPATHOLOGY FROM NECROPSY

REF: [redacted]

CLINICAL HISTORY
Please refer to the clinical history on the request form and the emails from [redacted] and [redacted]. A brief summary of the clinical history;
24/3/25
On the property , near Deep Creek, [redacted] there were about 40 unwell/ staggering / weak eastern grey kangaroos in a small area near the beach. The kangaroos appear to be weak and did not have neurological signs.
The syndrome appeared after the algal bloom event reported a week or so ago, and the only drinking water available to these kangaroos(a freshwater creek emptying into a small lagoon on the beach) was clearly contaminated at some point (evidence of staining and dead sea-life on sand around the lagoon).
The available pasture was predominantly kikuyu.
On necropsy one animal had abundant ascarid-like worms. 2/5 roos had heavy worm burdens, 3/5 did not appear to have heavy worm burdens.

26/5/25
70 (mainly juveniles) of 200 kangaroos were affected. The affected animals were weak or recumbent. Two animals were euthanized and submitted to [redacted].

MACROSCOPY
Slides 1A-O contain liver, spleen, heart, lung, kidney, adrenal gland, stomach, duodenum, pancreas, jejunum, ileum colon, skeletal muscle (semimembranosus) and multiple sections of brain (including medulla, cerebellum, midbrain, thalamus, hippocampus, parietal and occipital cerebral cortices) from kangaroo 1

Slides 2A-O contain liver, spleen, heart, lung, kidney, adrenal gland, stomach, duodenum, pancreas, jejunum, ileum colon, skeletal muscle (semimembranosus) and multiple sections of brain (including medulla, cerebellum, midbrain, thalamus, hippocampus, parietal and occipital cerebral cortices) from kangaroo 2

MICROSCOPY
Kangaroo 1
Lung: The alveolar interstitium is expanded by hyperaemia/congestion. There is mild oedema multifocally expanding alveolar spaces. (Pulmonary oedema, congestion / hyperaemia)

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

There is mild autolysis of elementary sections. Aside from this artefact the following changes are seen.

Stomach: Within the lumen of the stomach there are multiple cross sections of nematode's. The nematode is approximately 40 to 60 m in diameter with smooth cuticle, coelomyarian -platymyarian musculature, lateral cords, pseudocoelom, alimentary tract lined by columnar epithelium and gravid uteri. (Gastric nematodiasis)

Skeletal muscle: Multifocally there is atrophy of myocytes and the interstitium surrounding the cells is mildly expanded by oedema. There are rare individualized degenerate myocytes with fragmented sarcoplasm. (Muscle, oedema, mild, multifocal subacute with rare myocyte degeneration)

Cervical, thoracic and lumbar spinal cord: Within the gray matter of the spinal cord moderate numbers of neurons contain fine dark brown to black granules with in the perikaryon.

Midbrain and medulla: Within the gray matter rare neurons contain fine dark brown to black granules with in the perikaryon.

The other organs including liver, spleen, heart, lung, adrenal gland,, duodenum, pancreas, jejunum, ileum colon, and multiple sections of brain appear unremarkable.

Kangaroo 2
Lung: There is mild pulmonary oedema, congestion / hyperaemia.

There is mild autolysis of elementary sections. Aside from this artefact the following changes are seen.

Cervical, thoracic and lumbar spinal cord: Within the gray matter of the spinal cord moderate numbers of neurons contain fine dark brown to black granules with in the perikaryon.

Midbrain, medulla, cerebellum: Within the gray matter of the midbrain and medulla moderate numbers of neurons contain fine dark brown to black granules with in the perikaryon. Within the cerebellum moderate numbers of purkinje cells contain dark brown granules within the perikaryon.

The other organs including liver, spleen, heart, adrenal gland,, duodenum, pancreas, jejunum, ileum colon, and multiple sections of brain appear unremarkable.

DIAGNOSIS
Kangaroos 1 and 2
Brain and spinal cord: Intraneuronal pigment consistent with Phalaris toxicosis.

Lung: Pulmonary oedema, congestion / hyperaemia

Stomach: Gastric nematodiasis

Additional findings
Kangaroo 1
Kidney: Nephritis, interstitial, lymphocytic, plasmacytic, mild, multifocal, chronic

Skeletal muscle: Muscle, oedema, mild, multifocal subacute with rare myocyte degeneration

COMMENTS
The histological findings, particularly the spinal cord of both animals and the cerebellum / midbrain/ brain stem of kangaroo 2, are consistent

with Phalaris toxicosis. Schmorls stains are pending to simply highlight the granules within the neurons.

The gastric nematodiasis in both animals (please refer to the necropsy report) is a normal finding.

The mild interstitial nephritis in kangaroo 1 is an incidental finding, suggestive of history bacteraemia e.g. Leptosira sp.

The mild oedema of the skeletal muscle in Kangaroo 1 may have been due to acute adrenalin release / stress and abrupt muscle contraction.

[redacted]

Specialist Veterinary Anatomic Pathologist
[redacted]

Validated by [redacted].

This request has other tests in progress at the time of reporting

Test: NEC - NECROPSY Reported: 03/04/2025 19:27

Validated by [redacted].

Test: NEC - NECROPSY Reported: 03/04/2025 19:27

HISTOPATHOLOGY FROM NECROPSY

REF: [redacted]

CLINICAL HISTORY
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The available pasture was predominantly kikuyu.
On necropsy one animal had abundant ascarid-like worms. 2/5 roos had heavy worm burdens, 3/5 did not appear to have heavy worm burdens.

26/5/25
70 (mainly juveniles) of 200 kangaroos were affected. The affected animals were weak or recumbent. Two animals were euthanized and submitted to [redacted].

MACROSCOPY
Slides 1A-O contain liver, spleen, heart, lung, kidney, adrenal gland, stomach, duodenum, pancreas, jejunum, ileum colon, skeletal muscle (semimembranosus) and multiple sections of brain (including medulla, cerebellum, midbrain, thalamus, hippocampus, parietal and occipital cerebral cortices) from kangaroo 1

Slides 2A-O contain liver, spleen, heart, lung, kidney, adrenal gland, stomach, duodenum, pancreas, jejunum, ileum colon, skeletal muscle (semimembranosus) and multiple sections of brain (including medulla, cerebellum, midbrain, thalamus, hippocampus, parietal and occipital cerebral cortices) from kangaroo 2

MICROSCOPY
Kangaroo 1
Lung: The alveolar interstitium is expanded by hyperaemia/congestion. There is mild oedema multifocally expanding alveolar spaces. (Pulmonary oedema, congestion / hyperaemia)

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

There is mild autolysis of elementary sections. Aside from this artefact the following changes are seen.

Stomach: Within the lumen of the stomach there are multiple cross sections of nematode's. The nematode is approximately 40 to 60 m in diameter with smooth cuticle, coelomyarian -platymyarian musculature, lateral cords, pseudocoelom, alimentary tract lined by columnar epithelium and gravid uteri. (Gastric nematodiasis)

Skeletal muscle: Multifocally there is atrophy of myocytes and the interstitium surrounding the cells is mildly expanded by oedema. There are rare individualized degenerate myocytes with fragmented sarcoplasm. (Muscle, oedema, mild, multifocal subacute with rare myocyte degeneration)

Cervical, thoracic and lumbar spinal cord: Within the gray matter of the spinal cord moderate numbers of neurons contain fine dark brown to black granules with in the perikaryon.

Midbrain and medulla: Within the gray matter rare neurons contain fine dark brown to black granules with in the perikaryon.

The other organs including liver, spleen, heart, lung, adrenal gland,, duodenum, pancreas, jejunum, ileum colon, and multiple sections of brain appear unremarkable.

Kangaroo 2
Lung: There is mild pulmonary oedema, congestion / hyperaemia.

There is mild autolysis of elementary sections. Aside from this artefact the following changes are seen.

Cervical, thoracic and lumbar spinal cord: Within the gray matter of the spinal cord moderate numbers of neurons contain fine dark brown to black granules with in the perikaryon.

Midbrain, medulla, cerebellum: Within the gray matter of the midbrain and medulla moderate numbers of neurons contain fine dark brown to black granules with in the perikaryon. Within the cerebellum moderate numbers of purkinje cells contain dark brown granules within the perikaryon.

The other organs including liver, spleen, heart, adrenal gland,, duodenum, pancreas, jejunum, ileum colon, and multiple sections of brain appear unremarkable.

DIAGNOSIS
Kangaroos 1 and 2
Brain and spinal cord: Intraneuronal pigment consistent with Phalaris toxicosis.

Lung: Pulmonary oedema, congestion / hyperaemia

Stomach: Gastric nematodiasis

Additional findings

Kangaroo 1
Kidney: Nephritis, interstitial, lymphocytic, plasmacytic, mild, multifocal, chronic

Skeletal muscle: Muscle, oedema, mild, multifocal subacute with rare myocyte degeneration

COMMENTS
The histological findings, particularly the spinal cord of both animals and the cerebellum / midbrain/ brain stem of kangaroo 2, are consistent with Phalaris toxicosis. Schmorls stains are pending to simply highlight the granules within the neurons.

The gastric nematodiasis in both animals (please refer to the necropsy report) is a normal finding.

The mild interstitial nephritis in kangaroo 1 is an incidental finding, suggestive of history bacteraemia e.g. Leptosira sp.

The mild oedema of the skeletal muscle in Kangaroo 1 may have been due to acute adrenalin release / stress and abrupt muscle contraction.

[redacted]
Specialist Veterinary Anatomic Pathologist
[redacted]

Validated by [redacted].

This request has other tests in progress at the time of reporting

Test: NEC - NECROPSY Reported: 03/04/2025 19:27

Validated by [redacted].

PIIMS Laboratory Results Viewer

Result Details Page

Submission No: [redacted]
Animal/Batch Id: KANGAROO MORTALITY

Lab No. - Test: [redacted]

Owner:

Submitter:

PIC:

Submitter Id: [redacted]

Species: Kangaroo or Wallaby

Clinic Phone:

Age:

Submitted: 26/03/2025

Test: NEC - NECROPSY

Reported: 17/04/2025 11:43

HISTOPATHOLOGY FROM NECROPSY

REF: [redacted]
ADDITIONAL FINDINGS 17/4/2025

CLINICAL HISTORY
Please refer to the clinical history on the request form and the emails from [redacted] and [redacted]. A brief summary of the clinical history;
24/3/25
On the property , near Deep Creek, [redacted] there were about 40 unwell/ staggering / weak eastern grey kangaroos in a small area near the beach. The kangaroos appear to be weak and did not have neurological signs.
The syndrome appeared after the algal bloom event reported a week or so ago, and the only drinking water available to these kangaroos(a freshwater creek emptying into a small lagoon on the beach) was clearly contaminated at some point (evidence of staining and dead sea-life on sand around the lagoon).
The available pasture was predominantly kikuyu.
On necropsy one animal had abundant ascarid-like worms. 2/5 roos had heavy worm burdens, 3/5 did not appear to have heavy worm burdens.

26/5/25
70 (mainly juveniles) of 200 kangaroos were affected. The affected animals were weak or recumbent. Two animals were euthanized and submitted to [redacted].

MACROSCOPY
Slides 1A-O contain liver, spleen, heart, lung, kidney, adrenal gland, stomach, duodenum, pancreas, jejunum, ileum colon, skeletal muscle (semimembranosus) and multiple sections of brain (including medulla, cerebellum, midbrain, thalamus, hippocampus, parietal and occipital cerebral cortices) from kangaroo 1

Slides 2A-O contain liver, spleen, heart, lung, kidney, adrenal gland, stomach, duodenum, pancreas, jejunum, ileum colon, skeletal muscle (semimembranosus) and multiple sections of brain (including medulla, cerebellum, midbrain, thalamus, hippocampus, parietal and occipital cerebral cortices) from kangaroo 2

MICROSCOPY
Kangaroo 1
Lung: The alveolar interstitium is expanded by hyperaemia/congestion. There is mild oedema multifocally expanding alveolar spaces. (Pulmonary oedema, congestion / hyperaemia)

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

There is mild autolysis of elementary sections. Aside from this artefact the following changes are seen.

Stomach: Within the lumen of the stomach there are multiple cross sections of nematode's. The nematode is approximately 40 to 60 in diameter with smooth cuticle, coelomyarian -platymyarian musculature, lateral cords, pseudocoelom, alimentary tract lined by columnar epithelium and gravid uteri. (Gastric nematodiasis)

Skeletal muscle: Multifocally there is atrophy of myocytes and the interstitium surrounding the cells is mildly expanded by oedema. There are rare individualized degenerate myocytes with fragmented sarcoplasm. (Muscle, oedema, mild, multifocal subacute with rare myocyte degeneration)

Cervical, thoracic and lumbar spinal cord: Within the gray matter of the spinal cord moderate numbers of neurons contain fine dark brown to black granules with in the perikaryon.

Midbrain and medulla: Within the gray matter rare neurons contain fine dark brown to black granules with in the perikaryon.

The other organs including liver, spleen, heart, lung, adrenal gland,, duodenum, pancreas, jejunum, ileum colon, and multiple sections of brain appear unremarkable.

Kangaroo 2
Lung: There is mild pulmonary oedema, congestion / hyperaemia.

There is mild autolysis of elementary sections. Aside from this artefact the following changes are seen.

Cervical, thoracic and lumbar spinal cord: Within the gray matter of the spinal cord moderate numbers of neurons contain fine dark brown to black granules with in the perikaryon.

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DIAGNOSIS
Kangaroos 1 and 2
Brain and spinal cord: Intraneuronal pigment consistent with Phalaris toxicosis.

Lung: Pulmonary oedema, congestion / hyperaemia

Stomach: Gastric nematodiasis

Additional findings
Kangaroo 1
Kidney: Nephritis, interstitial, lymphocytic, plasmacytic, mild, multifocal, chronic

Skeletal muscle: Muscle, oedema, mild, multifocal subacute with rare myocyte degeneration

COMMENTS
The histological findings, particularly the spinal cord of both animals

and the cerebellum / midbrain/ brain stem of kangaroo 2, are consistent with Phalaris toxicosis. Schmorl's stains are pending to simply highlight the granules within the neurons.

The gastric nematodiasis in both animals (please refer to the necropsy report) is a normal finding.

The mild interstitial nephritis in kangaroo 1 is an incidental finding, suggestive of history bacteraemia e.g. Leptosira sp.

The mild oedema of the skeletal muscle in Kangaroo 1 may have been due to acute adrenalin release / stress and abrupt muscle contraction.

MICROSCOPY 17/4/2025
Kangaroo 2
Brain (Cerebellum) and cervical spinal cord: Rare melanin deposits are seen within neurons on Schmorl's stain.

COMMENTS
Phalaris toxicosis contributed to morbidity in the mob of kangaroos. However, given the high prevalence of morbidity in the mob and lack of evidence of recovery from clinical signs, intercurrent or multiple disease processes (not evident histologically) cannot be excluded.

Background
In a survey of Phalaris staggers in macropods, risk factors for outbreaks included a) low average rainfall in early autumn (March and April) , leading to outbreaks in winter and b) low forage abundance with dominant Phalaris pasture. This outbreak occurred in March - April (not winter). Phalaris was not dominant in the paddocks where the affected kangaroos were found in this outbreak. For sheep risk factors for Phalaris staggers include low soil cobalt caused by limestone and sandstone substrate, high soil manganese, pH, and nitrogen (Chen et al 2024).

Chen, T., Hufschmid, J., Whiteley, P., ElHage, C., Davis, N. and Skerratt, L.F., 2024. Chronic phalaris toxicity in macropods is widespread and peaks in July in Victoria, Australia. Australian Veterinary Journal, 102(7), pp.331-338.

[redacted]
Specialist Veterinary Anatomic Pathologist
[redacted]

Validated by [redacted]

All tests on this request have now been completed

Test: NEC - NECROPSY Reported: 17/04/2025 11:43

Validated by [redacted]

Test: NEC - NECROPSY Reported: 03/04/2025 19:27

HISTOPATHOLOGY FROM NECROPSY

REF: [redacted]

CLINICAL HISTORY
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24/3/25
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The syndrome appeared after the algal bloom event reported a week or so ago, and the only drinking water available to these kangaroos(a freshwater creek emptying into a small lagoon on the beach) was clearly contaminated at some point (evidence of staining and dead sea-life on sand around the lagoon).
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Slides 1A-O contain liver, spleen, heart, lung, kidney, adrenal gland, stomach, duodenum, pancreas, jejunum, ileum colon, skeletal muscle (semimembranosus) and multiple sections of brain (including medulla, cerebellum, midbrain, thalamus, hippocampus, parietal and occipital cerebral cortices) from kangaroo 1

Slides 2A-O contain liver, spleen, heart, lung, kidney, adrenal gland, stomach, duodenum, pancreas, jejunum, ileum colon, skeletal muscle (semimembranosus) and multiple sections of brain (including medulla, cerebellum, midbrain, thalamus, hippocampus, parietal and occipital cerebral cortices) from kangaroo 2

MICROSCOPY
Kangaroo 1
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Kangaroo 2
Lung: There is mild pulmonary oedema, congestion / hyperaemia.

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DIAGNOSIS
Kangaroos 1 and 2
Brain and spinal cord: Intraneuronal pigment consistent with Phalaris toxicosis.

Lung: Pulmonary oedema, congestion / hyperaemia

Stomach: Gastric nematodiasis

Additional findings
Kangaroo 1
Kidney: Nephritis, interstitial, lymphocytic, plasmacytic, mild, multifocal, chronic

Skeletal muscle: Muscle, oedema, mild, multifocal subacute with rare myocyte degeneration

COMMENTS
The histological findings, particularly the spinal cord of both animals and the cerebellum / midbrain/ brain stem of kangaroo 2, are consistent with Phalaris toxicosis. Schmorls stains are pending to simply highlight the granules within the neurons.

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[redacted]
Specialist Veterinary Anatomic Pathologist
[redacted]

Validated by [redacted].

This request has other tests in progress at the time of reporting

Test: NEC - NECROPSY Reported: 03/04/2025 19:27

Validated by [redacted].

Test: NEC - NECROPSY Reported: 03/04/2025 19:27

HISTOPATHOLOGY FROM NECROPSY

REF: [redacted]

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Kangaroo 2
Lung: There is mild pulmonary oedema, congestion / hyperaemia.

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DIAGNOSIS
Kangaroos 1 and 2
Brain and spinal cord: Intraneuronal pigment consistent with Phalaris toxicosis.

Lung: Pulmonary oedema, congestion / hyperaemia

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Kangaroo 1
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The mild oedema of the skeletal muscle in Kangaroo 1 may have been due to acute adrenalin release / stress and abrupt muscle contraction.

[redacted]
Specialist Veterinary Anatomic Pathologist
[redacted]

Validated by [redacted].

This request has other tests in progress at the time of reporting

Test:	NEC - NECROPSY	Reported:	03/04/2025 19:27

Validated by [redacted].

PIIMS Laboratory Results Viewer

Result Details Page

Submission No: [redacted]
Animal/Batch Id: KANGAROO MORTALITY

Lab No. - Test: [redacted]

Owner:

Submitter:

PIC:

Submitter Id: [redacted]

Species: Kangaroo or Wallaby

Clinic Phone:

Age:

Submitted: 26/03/2025

Test: ZPM - ZOO PROFILE - BIOCHEMISTRY & HAEMATOLOGY Reported: 27/03/2025 08:13

STANDARD PROFILE ZOO **SPECIMEN : BLOOD**

Date:	**26/03/25**		26/03/25		
Coll. Time:	10:30		10:30		
Lab Number:	[redacted]		[redacted]		

HAEMATOLOGY

Red Cell Count		4.50		5.33	x10 \S\12 /L
Haemoglobin		135		176	g/L
Hct		0.38		0.47	L/L
MCV		84		88	fL
MCH		30.0		33.0	pg
MCHC		356		374	g/L
W.C.C.		6.0		16.7	x10 \S\9 /L
Neutro	65	3.9	81	13.5	x10 \S\9 /L
Lymph	35	2.1	19	3.2	x10 \S\9 /L
Mono	0	0.0	0	0.0	x10 \S\9 /L
Eosin	0	0.0	0	0.0	x10 \S\9 /L
Baso	0	0.0	0	0.0	x10 \S\9 /L
Platelets		174			x10 \S\9 /L (100-500)

[redacted] FILM MORPHOLOGY: RBC: Normal WBC: Leucocyte morphology normal PLATELETS: Adequate.

GENERAL BIOCHEMISTRY **SPECIMEN : SERUM**

Alk.Phosph.	253	786	U/L
Inorg.Phosph.	1.16	1.44	mmol/L
Calcium	2.57	2.49	mmol/L
Magnesium	0.9	1.0	mmol/L
Total Bili.	< 1	< 1	umol/L
ALT	323	141	U/L
AST (SGOT)	529	705	U/L
GGT	14	21	U/L
CK	18037	38355	U/L
Total Protein	63	63	g/L
Albumin	37	37	g/L
Globulins	26	26	g/L
Sodium	142	148	mmol/L
Potassium	4.0	4.1	mmol/L
Chloride	96	99	mmol/L
Bicarbonate	35	38	mmol/L
Anion Gap	15	15	mmol/L
Urea	11.1	19.2	mmol/L
Creatinine	157	138	umol/L
Cholesterol	1.7	1.4	mmol/L
Glucose	9	2	mmol/L

SERUM INDICES (Clear/+/++/+++/++++)

Icterus index Clear
Lipaemia index Clear
Haemolysis index Clear

This methodology (including reference ranges) has not been validated for this species.

Laboratory note: Glucose will decrease over time in non-preserved samples and may result in false low values

Validated by [redacted], Veterinary Pathologist.

All tests on this request have now been completed

Test: ZPM - ZOO PROFILE - BIOCHEMISTRY & HAEMATOLOGY Reported: 27/03/2025 08:13

Validated by [redacted], Veterinary Pathologist.

Test: ZPM - ZOO PROFILE - BIOCHEMISTRY & HAEMATOLOGY Reported: 27/03/2025 08:13

STANDARD PROFILE ZOO **SPECIMEN : BLOOD**

Date:	**26/03/25**		26/03/25	
Coll. Time:	10:30		10:30	
Lab Number:	[redacted]		[redacted]	

HAEMATOLOGY

Red Cell Count	4.50		5.33	x10 \S\12 /L
Haemoglobin	135		176	g/L
Hct	0.38		0.47	L/L
MCV	84		88	fL
MCH	30.0		33.0	pg
MCHC	356		374	g/L
W.C.C.	6.0		16.7	x10 \S\9 /L
Neutro	65	3.9	81	13.5 x10 \S\9 /L
Lymph	35	2.1	19	3.2 x10 \S\9 /L
Mono	0	0.0	0	0.0 x10 \S\9 /L
Eosin	0	0.0	0	0.0 x10 \S\9 /L
Baso	0	0.0	0	0.0 x10 \S\9 /L
Platelets	174			x10 \S\9 /L (100-500)

[redacted] FILM MORPHOLOGY: RBC: Normal WBC: Leucocyte morphology normal PLATELETS: Adequate.

GENERAL BIOCHEMISTRY **SPECIMEN : SERUM**

Alk.Phosph.	253	786	U/L
Inorg.Phosph.	1.16	1.44	mmol/L
Calcium	2.57	2.49	mmol/L
Magnesium	0.9	1.0	mmol/L
Total Bili.	< 1	< 1	umol/L
ALT	323	141	U/L
AST (SGOT)	529	705	U/L
GGT	14	21	U/L
CK	18037	38355	U/L
Total Protein	63	63	g/L
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Globulins	26	26	g/L
Sodium	142	148	mmol/L
Potassium	4.0	4.1	mmol/L
Chloride	96	99	mmol/L
Bicarbonate	35	38	mmol/L
Anion Gap	15	15	mmol/L

[redacted]

Urea	11.1	19.2	mmol/L
Creatinine	157	138	umol/L
Cholesterol	1.7	1.4	mmol/L
Glucose	9	2	mmol/L

SERUM INDICES (Clear/+/++/+++/++++)

Icterus index	Clear
Lipaemia index	Clear
Haemolysis index	Clear

This methodology (including reference ranges) has not been validated for this species.

Laboratory note: Glucose will decrease over time in non-preserved samples and may result in false low values

Validated by [redacted], Veterinary Pathologist.

All tests on this request have now been completed

Test: ZPM - ZOO PROFILE - BIOCHEMISTRY & HAEMATOLOGY Reported: 27/03/2025 08:13

Validated by [redacted] Veterinary Pathologist.

PIIMS Laboratory Results Viewer

Result Details Page

Submission No: [redacted]
Animal/Batch Id: KANGAROO MORTALITY

Lab No. - Test: [redacted]

Owner:

Submitter:

PIC:

Submitter Id: [redacted]

Species: Kangaroo or Wallaby

Clinic Phone:

Age:

Submitted: 26/03/2025

Test: SRF - PRODUCTION ANIMAL REFERRED TEST Reported: 08/04/2025 12:54

REFERRED TEST

Disease/Test : Botulinum C & D toxin PCR
Specimen Type: Stomach contents

RESULT : C toxin gene - Negative
D toxin gene - Negative

This test was performed by: [redacted]

Validated by [redacted] Laboratory Scientist.

All tests on this request have now been completed

Test: SRF - PRODUCTION ANIMAL REFERRED TEST Reported: 08/04/2025 12:54

Validated by [redacted], Laboratory Scientist.

Government of South Australia
Department of Primary Industries and Regions

Phytoplankton Report

S.A. Shellfish Quality Assurance Program - Certificate of Analysis

Lincoln Marine Science Centre. PO Box 5 Pt Lincoln SA 5606 phone (08) 8688 3409

[redacted]

Toxic Phytoplankton Scan Report - Single Species

Location	Creek	**Sample Date**	26-Mar-2025
		Sample Time	
Site	[redacted]	**Count Date**	02-Apr-2025
		Sample Type	

Comments for Report

Toxic Dinoflagellates	Count (cells/l)	Action Level
Karenia mikimotoi	20,460	

Results Summary:

Est. Total Phytoplankton (cells/litre)	
Est. Total Diatoms (cells/litre)	
Dominant Diatom spp.	
Estimated percentage of Total Diatoms	

Report Status: **Finalised**

Date of Report: 02-Apr-2025

Test Method P-050

SASQAP

Signature: [redacted]

Program Leader

Government of South Australia
Department of Primary Industries and Regions

Phytoplankton Report

S.A. Shellfish Quality Assurance Program - Certificate of Analysis

Lincoln Marine Science Centre. PO Box 5 Pt Lincoln SA 5606 phone (08) 8688 3409

[redacted]

Toxic Phytoplankton Scan Report - Single Species

Location	Lagoon	**Sample Date**	26-Mar-2025
		Sample Time	
Site	[redacted]	**Count Date**	02-Apr-2025
		Sample Type	
Comments for Report	No toxic species present		

Results Summary:

Est. Total Phytoplankton (cells/litre)	
Est. Total Diatoms (cells/litre)	
Dominant Diatom spp.	
Estimated percentage of Total Diatoms	

Report Status: **Finalised**

Date of Report: 02-Apr-2025

Test Method P-050

SASQAP

Signature: [redacted]

Program Leader

Government of South Australia
Department of Primary Industries and Regions

Phytoplankton Report

S.A. Shellfish Quality Assurance Program - Certificate of Analysis

Lincoln Marine Science Centre. PO Box 5 Pt Lincoln SA 5606 phone (08) 8688 3409

[redacted]

Toxic Phytoplankton Scan Report - Single Species

Location	Beach	**Sample Date**	26-Mar-2025
		Sample Time	
Site	[redacted]	**Count Date**	01-Apr-2025
		Sample Type	

Comments for Report

Toxic Dinoflagellates	Count (cells/l)	Action Level
Karenia mikimotoi	608,000	

Results Summary:

Est. Total Phytoplankton (cells/litre)	
Est. Total Diatoms (cells/litre)	
Dominant Diatom spp.	
Estimated percentage of Total Diatoms	

Report Status: **Finalised**

Date of Report: 02-Apr-2025

Test Method P-050

SASQAP

Signature: [redacted]

Program Leader

[redacted]

[redacted]

Sent: Wednesday, 25 June 2025 3:30 PM
To: [redacted]
Su ALITY, (Ka) [redacted]

[redacted]

[redacted]

Tested on 17/06/25
Reported on 25/06/25 16:00
Referred on 26/03/25 **by:** [redacted]

[redacted] [redacted]

Owner:
KANGAROO MORTALITY

Animal/s:
Kangaroo or Wal

DOB: N/A

Collected: 26/03/25 10:30 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

REFERRED TEST

Disease/Test : PST in Biota
Specimen Type: 1 - Brain, Heart, Kidney, Spleen, Liver, Lung
2 - Liver, Kidney, Brain, Heart, Lung, Spleen

RESULT :

C1	- All samples <0.01 STX.2HCI eq. mg/kg
C2	- All samples <0.02 STX.2HCI eq. mg/kg
C3	- All samples <0.02 STX.2HCI eq. mg/kg
C4	- All samples <0.02 STX.2HCI eq. mg/kg
dcGTX1	- All samples <0.02 STX.2HCI eq. mg/kg
dcGTX2	- All samples <0.02 STX.2HCI eq. mg/kg
dcGTX3	- All samples <0.02 STX.2HCI eq. mg/kg
dcGTX4	- 2Liver - 0.07 STX.2HCI eq. mg/kg - 2Brain - 0.05 STX.2HCI eq. mg/kg - All other samples <0.02 STX.2HCI eq. mg/kg
dcNEO	- All samples <0.02 STX.2HCI eq. mg/kg
dcSTX	- All samples <0.01 STX.2HCI eq. mg/kg
doSTX	- All samples <0.01 STX.2HCI eq. mg/kg
GTX1	- All samples <0.01 STX.2HCI eq. mg/kg
GTX2	- All samples <0.01 STX.2HCI eq. mg/kg
GTX3	- All samples <0.01 STX.2HCI eq. mg/kg
GTX4	- All samples <0.01 STX.2HCI eq. mg/kg
GTX5	- All samples <0.02 STX.2HCI eq. mg/kg
GTX6	- All samples <0.02 STX.2HCI eq. mg/kg
NEO	- All samples <0.02 STX.2HCI eq. mg/kg
STX	- All samples <0.01 STX.2HCI eq. mg/kg
Total PST	- All samples <0.10 STX.2HCI eq. mg/kg

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

This test was performed by: [redacted]

Validated by [redacted], Veterinary Pathologist.

[redacted]

[redacted]

Tested on 17/06/25
Reported on 25/06/25 16:00
Referred on 26/03/25 **by:**
[redacted]

Owner:
KANGAROO MORTALITY

Animal/s:
Kangaroo or Wal

DOB: N/A

Collected: 26/03/25 10:30 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received All Tests Complete

REFERRED TEST

Disease/Test : Lipophilic Toxins in Shellfish
Specimen Type: 1 - Brain, Heart, Kidney, Spleen, Liver, Lung
2 - Liver, Kidney, Brain, Heart, Lung, Spleen

RESULT :

AZA1	- All samples <0.01 mg/kg WMB
AZA2	- All samples <0.01 mg/kg WMB
AZA3	- All samples <0.01 mg/kg WMB
Domoic Acid	- All samples <0.05 mg/kg WMB
DTX1 Free	- All samples <0.01 mg/kg WMB
DTX1 Total	- All samples <0.01 mg/kg WMB
DTX2 Free	- All samples <0.01 mg/kg WMB
DTX2 Total	- All samples <0.01 mg/kg WMB
GYM	- All samples <0.01 mg/kg WMB
Homo-YTX	- All samples <0.02 mg/kg WMB
OA Free	- All samples <0.01 mg/kg WMB
OA Total	- All samples <0.01 mg/kg WMB
PnTx-G	- All samples <0.01 mg/kg WMB
PTX2	- All samples <0.01 mg/kg WMB
SPX1	- All samples <0.01 mg/kg WMB
Total DST	- All samples <0.01 OA eq. mg/kg
YTX	- All samples <0.01 mg/kg WMB

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

This test was performed by: [redacted]

Validated by [redacted], Veterinary Pathologist.

[redacted]

[redacted]

To: [redacted]

Su TALITY, (Ka) [redacted]

[redacted]

Tested on 17/06/25

Reported on 25/06/25 14:00
Report Addressee: **Referred on** 26/03/25 **by:**

[redacted]

[redacted]

Owner:
KANGAROO MORTALITY

Animal/s:
Kangaroo or Wal

DOB: N/A

Collected: 26/03/25 10:30 **Subm.No:** [redacted] **Lab No.:** [redacted]

Samples tested as received

REFERRED TEST

Disease/Test : Biotoxins in Biota
Specimen Type: 1 - Brain, Heart, Kidney, Spleen, Liver, Lung
2 - Liver, Kidney, Brain, Heart, Lung, Spleen

RESULT : Brevetoxin 2 - All samples <0.01 mg/kg WMB
Brevetoxin 3 - 1Heart - 0.03 mg/kg WMB
1Kidney - 0.01 mg/kg WMB
1Spleen - 0.01 mg/kg WMB
1Liver - 0.03 mg/kg WMB
2Liver - 0.04 mg/kg WMB
All other sample <0.01 mg/kg WMB

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

This test was performed by: [redacted]

Validated by [redacted], Veterinary Pathologist.

Farley, Lisa (PIRSA)

Out of scope

From: Clause 6(1) (PIRSA) <Clause 6(1) @sa.gov.au>
Sent: Tuesday, 25 March 2025 10:23 AM
To: Clause 6(1) (PIRSA) <Clause 6(1) @sa.gov.au>; Bamhare, Cleopas (PIRSA) <Cleopas.Bamhare@sa.gov.au>; Clause 6(1) <Clause 6(1) >
Cc: Dickason, Celia (PIRSA) <Celia.Dickason@sa.gov.au>; Slade, Damian (PIRSA) <Damian.Slade@sa.gov.au>; Van-Dissel, Chris (PIRSA) <Chris.Van-Dissel@sa.gov.au>
Subject: Kangaroos at Deep Creek

Hi everyone, Damian and I met and travelled with Clause 6(1), owner of Clause 6(1) near Deep Ck. Clause 6(1) was the reporter of dead and sick kangaroos to Kate/ Cleopas on Saturday, where he observed some dead kangaroos and about 40 unwell/ staggery/ weak in a small area near the beach as shown. I shall find exact location for my report. There are about 200+ kangaroos in the vicinity, this location is pretty secluded.
The syndrome appeared after the algal bloom event reported a week or so ago, and the only drinking water available to these kangaroos(a freshwater creek emptying into a small lagoon on the beach) was clearly contaminated at some point (evidence of staining and dead sealife on sand around the lagoon).
I shot 15 roos of mixed ages as they were recumbent and could not stand. All of these had wet forelegs, exhibiting stress response.
Clause 9(1) - the entire area is kikuyu dominant- and very little of that. Stomach lining, Heart m, Damian and I PM'd 5 roos, collected brain (somewhat damaged), liver , kidney, some PM blood samples, and 1 stomach contents very full of ascarid looking worms. 2/5 roos had heavy worm burdens, 3/5 did not appear to be. I failed to collect skeletal muscle however, or spinal cord. Many PMs signs are unremarkable, except 0 body fat, pale, tough spleen (sampled) all major organs appeared normal. Leg muscles appeared normal, not striated, bt I did not examine closely.
Kangaroos appear weak, rather than affected CNS- I am wondering if the affected ones may be a kind of myopathy or weakness , possibly complicated by starvation, par, and parasites or Vit A deficiency? All PMd roos had full stomachs, but could not get up.

My firm recommendation is that Clause 6(1) go and have a look too and collect skeletal m, undamaged brain, fresh liver, Bloods etc, and use her experience and observations as well.
Clause 6(1) asked me whether I thought the healthy roos would be suitable for dog meat as he wants to get shooters in from Clause 7(1)(c) lo lower the population. I said that I thought it would be OK, and I know there is an OPV there who would judge if the meat was unsuitable as well. So Clause 6(1) should plan to visit this week if she can
Regards

Clause 6(1) | Senior Veterinary Officer
BiosecuritySA | **Department of Primary Industries and Regions**
Government of South Australia | Bremer Rd, Murray Bridge ,SA 5253
PO Box 469 Murray Bridge SA 5253
M: Clause 6(1) | **E:** Clause 6(1)@sa.gov.au
pir.sa.gov.au

Service I Professionalism I Trust I Respect I Collaboration & Engagement I Honesty & Integrity I Courage & Tenacity I Sustainability

Disclaimer: The information in this e-mail may be confidential and/or legally privileged. Use or disclosure of the information by anyone other than the intended recipient is prohibited and may be unlawful.

Doc 6a

Test Submission Event - Test Submission

Registration

Incident

Event Date: 26/03/2025 *

Officer: Clause 6(1) *

Project(s):

Select From...

Administration
Ag. Product
Apiaries
Aquaculture
BJD
Dairy ManaJD
EAD
Foetrat

Selected

Diagnostic - endemic
Disease Surveillance
Wildlife *

Other Parties

Position Details

GPS Point:	*Degrees*	*Minutes*	*Seconds*
Latitude			
Longitude			

Laboratory: Clause 7(1)(c) *

Submission No.: Clause 7(1)(c)

Lab Request No.: Clause 7(1)(c)

Clinic: Primary Industries & Resources SA - SA

Clinic Id: Clause 7(1)(c)

Submitter: Clause 6(1)

Submitter Id: Clause 6(1)

Owner Name: KANGAROO MORTALITY

Farm Location

Location Address:

Suburb/Town: **Postcode:**

State: **Country:**

Date Collected: 26/03/2025 **Reason for Submission:** Disease Surveillance

Species: Kangaroo or Wallaby * **Age:**

Syndrome: Weakness, Depression * **Outbreak Start Date:** dd/mm/yyyy

History / Observations:

24/3/25
On the property , near Deep Creek, PIC no Clause 6(1) there were about 40 unwell/ staggering / weak eastern grey kangaroos in a small area near

Test(s)

Remove	Add Result	Test Name	Test Code	No. Samples
☐		Case Management	CMA	0
☐		Gross pathology	GP	1
☐		Necropsy (histo)	NEC	1
☐		Production Animal Referred Test	SRF	0
☐		Supplementary Histology Report	SUP	0
☐		Zoo Profile - Biochem & Haem Std Profile	SPZ	1
☐		Zoo Profile - Biochem & Haem Upgraded Profile	ZPM	0
⊕	**Test Code:**			**No. Samples:**

Result(s)

Remove	Test Name	No. Samples	Date Out
☐	Case Management	0	dd/mm/yyyy
☐	Gross pathology	1	dd/mm/yyyy

	Number	Animal / Batch Ids	Comments
No abnormalities detected:			
Morphologic abnormality:			
Definitive change:			
Sample problem:			
Laboratory Problem:			

Remove	Test Name	No. Samples	Date Out
☐	Necropsy (histo)	1	17/04/2025

	Number	Animal / Batch Ids	Comments
No abnormalities detected:			
Morphologic abnormality:			
Definitive change:	1		Brain and spinal cord: Intraneuronal pigment consistent with Ph
Sample problem:			
Laboratory Problem:			

Remove	Test Name	No. Samples	Date Out
☐	Production Animal Referred Test	0	dd/mm/yyyy

	Number	Animal / Batch Ids	Comments
Delete Test, add correct Test:			
OR if no Test call James Smeda:			

Remove	Test Name	No. Samples	Date Out
☐	Supplementary Histology Report	0	dd/mm/yyyy

	Number	Animal / Batch Ids	Comments
No abnormalities detected:			
Morphologic abnormality:			
Definitive change:			
Sample problem:			
Laboratory Problem:			

Remove	Test Name	No. Samples	Date Out
☐	Zoo Profile - Biochem & Haem Std Profile	1	dd/mm/yyyy

	Number	Animal / Batch Ids	Comments
Normal:			
Mild changes:			
Moderate changes:			
Severe changes:			
Sample problem:			
Laboratory problem:			

Remove	Test Name	No. Samples	Date Out
☐	Zoo Profile - Biochem & Haem Upgraded Profile	0	dd/mm/yyyy

	Number	Animal / Batch Ids	Comments
Normal:			
Mild changes:			

Moderate changes:			
Severe changes:			
Sample problem:			
Laboratory problem:			

Result Details

Result Details

Phalaris toxicosis contributed to morbidity in the mob of kangaroos. However, it is unusual for Phalaris staggers alone to cause such high rates of morbidity in such a short period of time. For this reason, intercurrent or multiple disease processes (not evident histologically) cannot be excluded. Botulism, based on the

Diagnosis

Remove	Disease	Status
☐	Poisoning - Phalaris	Confirmed
☐	Toxin - Brevetoxin	Suspect

⊕

Payment Details

Bill to

PIRSA

Do you authorise payment of this submission by PIRSA?

Yes

Comments

Cl 5(1) approve

Diary

Remove	Copy	Seq No.	Task	Responsible Officer	Due Date	Start Date	Completion Date	Not Req
☐			Summary of lab. results is due	Clause 6(1)	25/04/2025	26/03/2025	17/06/2025	☑

Notification Basis: Due Date **Days Before:** 0 **Sent:** 25/04/2025 07:30AM

Comments:

⊕

1		Clause 6(1)	dd/mm/yyyy	dd/mm/yyyy	

Notification Basis: **Days Before:**

Comments:

Target Animal(s)

Record specific details of the animals affected by this Event.

Animal Id:

Species: **Breed:**

Gender: **Age Category:** **Exact Age:**

No. Affected: **No. Dead:** **No. Inspected:**

No. at Risk:

Whole Herd

Record a summary of all stock.

Species: **Breed:**

Gender: **Age Category:** **Total No.:**

Comments

Comments

eWHIS 21095
Brevetoxin 2 not detected. Brevetoxin 3 - Heart 0.03mg/kg WMB, kidney and spleen both 0.01 mg/kg WMB. Paralytic shellfish toxin not tested.

Affected Registration(s)