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**From:** Out of scope  
**Sent:** Friday, 7 May 2021 10:37 AM  
**To:** Out of scope  
**Subject:** Lead in ducks data and information  
**Attachments:** EPA06-180524-1.xlsx; EPA06-180605-7.xlsx; EPA06-180619.xlsx; Ducks info - composites-wetlands.xlsx; Lead in ducks - 2018 and 2020 results.xlsx; Lead in ducks .pptx

Hi Out of scope

I hope you are feeling better today after that community meeting this week 😊

Thanks for the chat yesterday and your support with this investigation. As agreed, I'm sending you attached to this email:

1. Laboratory reports for all studied wetlands: these are three excel files with pesticides and metals concentrations. Files **EPA06-180524-1** and **EPA06-180605-7** contain Heart Morass and Macleod Morass results and are highlighted in yellow. You'll see the first tab has all the data (including <LOR) and second tab only detects (easy to read and find the hits!)
2. A file called *Ducks info - composites-wetlands*: this file contains information about the composite samples, wetlands and ducks. You can refer to this file to check which composite sample correspond to which wetland and duck species
3. A file called *Lead in ducks - 2018 and 2020 results*: this file contains the lead results for the four wetlands where lead levels were found to be elevated. The file contains the results from composite samples analysed in 2018 and for the re-testing of individual samples in 2020.
4. A ppt file called *Lead in ducks*: this is a two-slide summary that I put together to summarise the background and current issues related to lead in ducks. Only if you need some context as can be messy with all things happening in this space!

Let me know if you need anything from my side. As I said in our meeting, happy to be involved in any conversation as I've been working on this for a year now....

And if we don't talk today, I hope you have a lovely weekend!

Cheers,

Out of scope

Out of scope

Water Sciences



Environment Protection Authority Victoria  
Centre for Applied Sciences, Macleod

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EPA acknowledges Aboriginal people as the first peoples and Traditional custodians of the land and water on which we live, work and depend. We pay respect to Aboriginal Elders past and present and recognise the continuing connection to, and aspirations for Country.



Number of samples 10

Sample information		Herbicides													Organochlorine (OC) Pesticides				
DATE SAMPLED	NMI LRN	SAMPLE REFERENCE	SAMPLE DESCRIPTION	REPORT NUMBER	Atrazine	Diuron	Hexazinone	Linuron	Metolachlor	Molinate	Oxyfluorfen	Pendimethalin	Simazine	Trifluralin	Prometryn	HCB	Heptachlor	Heptachlor epoxide	Aldrin
				Method	NR47	NR47	NR47	NR47	NR47	NR47	NR47	NR47	NR47	NR47	NR47	NR_19	NR_19	NR_19	NR_19
				Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				Limit of Reporting Guidelines	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01
22-May-18	N18/016059	PD1_1.2(B)	BREAST 22/05/2018 12:05	RN1204281	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01
22-May-18	N18/016060	PD1_1.2(L)	LIVER 22/05/2018 12:05	RN1204281	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01
22-May-18	N18/016061	PD2_1.2(B)	BREAST 22/05/2018 12:05	RN1204281	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01
22-May-18	N18/016062	PD2_1.2(L)	LIVER 22/05/2018 12:05	RN1204281	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01
22-May-18	N18/017846/B	CT_1.2 COMP (B)	BREAST COMPOSITE OF CT1.2 BREAST	RN1204281	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01
22-May-18	N18/017846/L	CT_1.2 COMP (L)	LIVER COMPOSITE OF CT1.2 LIVER	RN1204281	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01
22-May-18	N18/017847/B	GT_1.2 COMP (B)	BREAST COMPOSITE OF GT1.2 BREAST	RN1204281	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01
22-May-18	N18/017847/L	GT_1.2 COMP (L)	LIVER COMPOSITE OF GT1.2 LIVER	RN1204281	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01
22-May-18	N18/017848/B	PD_1.1 COMP (B)	BREAST COMPOSITE OF PD1.1 BREAST	RN1204281	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01
22-May-18	N18/017848/L	PD_1.1 COMP (L)	LIVER COMPOSITE OF PD1.1 LIVER	RN1204281	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01

Highlighted in yellow: Heart Morass

gamma-BHC (Lindane) NR_19 mg/kg	alpha-BHC NR_19 mg/kg	beta-BHC NR_19 mg/kg	delta-BHC NR_19 mg/kg	trans-Chlordane NR_19 mg/kg	cis-Chlordane NR_19 mg/kg	Oxychlordane NR_19 mg/kg	Dieldrin NR_19 mg/kg	pp-DDE NR_19 mg/kg	pp-DDD NR_19 mg/kg	pp-DDT NR_19 mg/kg	Endrin NR_19 mg/kg	Endrin Aldehyde NR_19 mg/kg	Endrin Ketone NR_19 mg/kg	alpha-Endosulfan NR_19 mg/kg	beta-Endosulfan NR_19 mg/kg	Endosulfan Sulfate NR_19 mg/kg	Methoxychlor NR_19 mg/kg	Surrogate: DF-DDE NR_19 %REC	Triazine Herbicides Atrazine NR_19 mg/kg	Hexazinone NR_19 mg/kg	Metribuzin NR_19 mg/kg
<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		94 <0.1	<0.1	<0.1
<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		115 <0.1	<0.1	<0.1
<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		51 <0.1	<0.1	<0.1
<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		103 <0.1	<0.1	<0.1
<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		99 <0.1	<0.1	<0.1
<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		101 <0.1	<0.1	<0.1
<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		94 <0.1	<0.1	<0.1
<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		96 <0.1	<0.1	<0.1
<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		96 <0.1	<0.1	<0.1
<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		103 <0.1	<0.1	<0.1













Total Recoverable Trace Elements by ICP												
Date analysed	Arsenic	Cadmium		Chromium		Copper		Lead		Mercury	Selenium	Zinc
	NT2_46	NT2_46	NT2_46	NT2_46	NT2_46	NT2_46	NT2_46	NT2_46	NT2_46	NT2_46	NT2_46	NT2_46
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	<0.05	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01
26/07/2018 0:00	<0.05	<0.01	<0.05		5.4	<0.01	<0.01			0.41	9.9	
5/07/2018 0:00	<0.05		0.1	<0.05	18	0.04	0.02			0.71	42	
26/07/2018 0:00	<0.05	<0.01	<0.05		5.4	<0.01	<0.01			0.41	9.4	
5/07/2018 0:00	<0.05		0.1	<0.05	19	0.05	0.02			0.62	40	
26/07/2018 0:00	<0.05	<0.01	<0.05		7.5	<0.01	0.06			0.55	11	
5/07/2018 0:00		0.19	0.13	1.3	17	0.05	0.26			1.6	54	
26/07/2018 0:00	<0.05	<0.01	<0.05		6.3	0.01	0.06			0.35	9.7	
5/07/2018 0:00		0.11	0.17	<0.05	17	0.09	0.27			1.6	58	
26/07/2018 0:00	<0.05	<0.01	<0.05		4.5	0.02	0.03			0.43	9.8	
5/07/2018 0:00	<0.05		0.11	<0.05	24	1.1	0.1			1.2	46	

















Methoprene NR47 mg/kg	Piperonyl Butoxide NR47 mg/kg	Propargite NR47 mg/kg	Tebufenpyrad NR47 mg/kg	Tetradifon NR47 mg/kg	Dates		Total Recoverable Trace Elements by ICP Arsenic NT2_46 mg/kg <0.05	Cadmium NT2_46 mg/kg <0.01	Chromium NT2_46 mg/kg <0.05	Copper NT2_46 mg/kg <0.01	Lead NT2_46 mg/kg <0.01	Mercury NT2_46 mg/kg <0.01	Selenium NT2_46 mg/kg <0.05	Zinc NT2_46 mg/kg <0.01	
					Date extracted	Date analysed									
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	8.3	<0.01	0.07	0.49	12	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	0.06	0.32	<0.05	32	0.08	0.47	2	65	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	6.5	0.08	0.04	0.42	11	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	0.11	0.44	<0.05	29	0.09	0.23	1.8	55	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	5.2	<0.01	0.01	0.41	11	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	<0.05	0.46	<0.05	36	0.07	0.1	1.4	58	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	0.06	<0.01	<0.05	6.1	<0.01	0.02	0.43	11
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	0.19	0.07	<0.05	11	0.15	0.04	1.2	50	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	7.3	<0.01	0.01	0.36	10	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	0.14	0.19	<0.05	10	0.17	0.03	1	44	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	5	<0.01	0.12	0.42	11	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	0.07	0.62	<0.05	8.6	0.03	0.4	1.4	40	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	6.8	<0.01	0.06	0.46	10	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	0.1	0.23	0.11	24	0.13	0.18	1.5	56	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	6.2	<0.01	0.05	0.38	9.2	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	0.19	0.25	<0.05	22	0.07	0.18	1.2	62	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	6.4	<0.01	0.03	0.44	9.3	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	0.12	0.13	<0.05	12	0.31	0.06	1	51	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	4.2	<0.01	<0.01	0.35	10	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	<0.05	0.24	<0.05	2.9	0.01	0.02	1.1	39	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	5.1	<0.01	0.09	0.46	9.6	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	<0.05	0.62	<0.05	9.1	0.01	0.45	1.3	39	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	5.9	<0.01	0.02	0.3	9.6	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	0.06	0.18	<0.05	20	0.08	0.08	1.2	50	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	5.1	0.02	0.05	0.31	9.8	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	0.14	0.21	<0.05	8.4	1.3	0.17	1.7	51	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	0.06	<0.01	<0.05	4.9	<0.01	0.04	0.33	9.2	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	0.27	0.08	0.14	13	0.32	0.16	1.6	56	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	6	0.28	<0.01	0.47	9.9	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	0.22	0.2	<0.05	31	0.23	0.05	2	59	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	5	0.06	0.054	0.37	11	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	<0.05	0.35	<0.05	33	0.08	0.3	1.7	53	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	<0.05	0.12	<0.05	38	0.06	0.02	0.94	39	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	6.2	<0.01	<0.01	0.39	11	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	6.4	<0.01	<0.01	0.48	10	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	<0.05	0.15	<0.05	16	0.08	0.02	0.91	30	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	6.3	0.02	0.04	0.75	10	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	<0.05	0.18	<0.05	24	0.1	0.11	1.8	43	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	<0.05	0.13	<0.05	24	0.06	0.16	1.8	37	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	5.8	<0.01	0.02	0.6	11	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	0.22	<0.01	<0.05	6.1	<0.01	<0.01	0.65	11	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	0.61	0.31	<0.05	35	0.24	0.06	2	66	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	0.38	0.59	<0.05	19	0.16	0.49	2.3	44	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	0.1	<0.01	<0.05	5.8	<0.01	0.19	0.52	8.4	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	<0.05	0.18	<0.05	50	0.03	0.06	2	74	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	7.6	<0.01	<0.01	0.62	12	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	0.07	<0.01	<0.05	5.6	<0.01	0.07	0.35	12	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	0.51	0.27	<0.05	28	0.06	0.58	2.1	94	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	7.3	<0.01	<0.01	0.34	10	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	0.09	0.12	<0.05	14	0.27	<0.01	1.4	42	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	5.6	<0.01	0.03	0.48	11	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	<0.05	0.12	<0.05	20	0.08	0.13	0.94	37	
<0.1	<0.1	<0.1	<0.1	<0.1	9/07/2018 0:00	10/07/2018 0:00	0.08	0.21	<0.05	29	0.09	0.07	1	47	
<0.1	<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05	<0.01	<0.05	6	<0.01	0.02	0.37	11	

















Piperonyl Butoxide NR47 mg/kg	Propargite NR47 mg/kg	Tebufenpyrad NR47 mg/kg	Tetradifon NR47 mg/kg	Dates		Total Recoverable Trace Elements by ICP										
				Date extracted	Date analysed	Arsenic NT2_46 mg/kg <0.05	Cadmium NT2_46 mg/kg <0.01	Chromium NT2_46 mg/kg <0.05	Copper NT2_46 mg/kg <0.01	Lead NT2_46 mg/kg <0.01	Mercury NT2_46 mg/kg <0.01	Selenium NT2_46 mg/kg <0.05	Zinc NT2_46 mg/kg <0.01			
<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00		0.05	<0.01	<0.05		5.6	<0.01	0.01	0.49	9.1	
<0.1	<0.1	<0.1	<0.1	00:00.0	00:00.0		0.23	0.4	<0.05		8.2	0.08	0.08	1.6	49	
<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05		<0.01	<0.05		6.8	0.35	0.01	0.47	11	
<0.1	<0.1	<0.1	<0.1	00:00.0	00:00.0	<0.05			0.42	<0.05		23	0.18	0.03	1.2	44
<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05		<0.01	<0.05		6.3	0.01	0.01	0.55	11	
<0.1	<0.1	<0.1	<0.1	00:00.0	00:00.0	<0.05		0.06	0.09	<0.05		33	0.34	0.03	1.3	42
<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05		<0.01	<0.05		5.1	<0.01	0.17	0.43	9.1	
<0.1	<0.1	<0.1	<0.1	00:00.0	00:00.0	<0.05			0.41	<0.05		9.8	0.05	0.73	1.3	40
<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05		<0.01	<0.05		6.8	0.01	<0.01	0.42	11	
<0.1	<0.1	<0.1	<0.1	00:00.0	00:00.0	<0.05			0.1	<0.05		36	0.35	0.03	1	53
<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00		0.07	<0.01	<0.05		4.3	<0.01	0.37	0.41	8.9	
<0.1	<0.1	<0.1	<0.1	00:00.0	00:00.0		0.19	0.6	<0.05		5.4	0.09	0.88	1.1	34	
<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05		<0.01	<0.05		7.5	0.03	0.03	0.44	11	
<0.1	<0.1	<0.1	<0.1	00:00.0	00:00.0	<0.05			0.23	<0.05		30	0.28	0.11	1.2	50
<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00	<0.05		<0.01	<0.05		7.1	0.01	0.02	0.5	11	
<0.1	<0.1	<0.1	<0.1	00:00.0	00:00.0	<0.05		0.09	0.3	<0.05		32	0.16	0.08	1.3	56
<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00		0.11	<0.01	<0.05		8.6	0.01	0.04	0.42	11	
<0.1	<0.1	<0.1	<0.1	00:00.0	00:00.0		0.15	0.09	<0.05		22	0.13	0.13	1.2	51	
<0.1	<0.1	<0.1	<0.1	25/07/2018 0:00	26/07/2018 0:00		0.06	<0.01	<0.05		7.1	<0.01	0.03	0.42	11	
<0.1	<0.1	<0.1	<0.1	00:00.0	00:00.0		0.27	0.24	<0.05		14	0.11	0.14	1.4	56	

Wetland Name	Longitude	Latitude	Wetland Number	Specimen Number	Wetland ID	Composite Group ID	Species	Collection Date	Sex	Age	Weight (g)	Number of Liver Samples	Number of Breast Samples	Number of Gonad Samples	Number of Swab Samples	Number of skin Samples	Number of body feather samples	Number of wing samples	Number of tailfeather samples	Number of histology samples	Number of gut samples	Sampling Session	
Lake Wellington	147.41025	-38.106639	1.2	1	1	3	Pacific Black Duck	19-May-18	Male	Adult	1200	3	3	1	1	1	1	0	0	1	1	May-June 2018	
Lake Wellington	147.41025	-38.106639	1.2	2	1	3	Pacific Black Duck	19-May-18	Male	Adult	1100	3	3	1	1	1	1	0	0	1	1	May-June 2018	
Lake Wellington	147.41025	-38.106639	1.2	3	1	2	Chestnut Teal	19-May-18	Female	Adult	500	3	3	1	1	1	1	0	0	1	1	May-June 2018	
Lake Wellington	147.41025	-38.106639	1.2	4	1	2	Chestnut Teal	19-May-18	Female	Adult	525	3	3	1	1	1	1	0	0	1	1	May-June 2018	
Lake Wellington	147.41025	-38.106639	1.2	5	1	2	Chestnut Teal	19-May-18	Male	Adult	500	3	3	1	1	1	1	0	0	1	1	May-June 2018	
Lake Wellington	147.41025	-38.106639	1.2	6	1	2	Chestnut Teal	19-May-18	Female	Adult	460	3	3	0	1	1	1	0	0	1	1	May-June 2018	
Lake Wellington	147.41025	-38.106639	1.2	7	1	2	Chestnut Teal	19-May-18	Male	Adult	550	3	3	0	1	1	1	0	0	1	1	May-June 2018	
Lake Wellington	147.41025	-38.106639	1.2	8	1	1	Grey Teal	19-May-18	Male	Adult	475	3	3	0	1	1	1	0	0	1	1	May-June 2018	
Lake Wellington	147.41025	-38.106639	1.2	9	1	2	Chestnut Teal	19-May-18	Male	Adult	580	3	3	0	1	1	1	0	0	1	1	May-June 2018	
Lake Wellington	147.41025	-38.106639	1.2	10	1	2	Chestnut Teal	19-May-18	Female	Adult	500	3	3	0	1	1	1	0	0	1	1	May-June 2018	
Lake Wellington	147.41025	-38.106639	1.2	11	1	1	Grey Teal	19-May-18	Female	Adult	420	3	3	0	1	1	1	0	0	0	0	1	May-June 2018
Lake Wellington	147.41025	-38.106639	1.2	12	1	2	Chestnut Teal	19-May-18	Female	Adult	500	3	3	0	1	1	1	0	0	0	0	1	May-June 2018
Lake Wellington	147.41025	-38.106639	1.2	13	1	1	Grey Teal	19-May-18	Male	Adult	520	3	3	0	1	1	1	0	0	0	0	1	May-June 2018
Lake Wellington	147.41025	-38.106639	1.2	14	1	1	Grey Teal	19-May-18	Male	Adult	530	3	3	0	1	1	1	0	0	0	0	1	May-June 2018
Lake Wellington	147.41025	-38.106639	1.2	15	1	1	Grey Teal	19-May-18	Female	Adult	400	3	3	0	1	1	1	0	0	0	0	0	May-June 2018
Lake Wellington	147.41025	-38.106639	1.2	16	1	1	Grey Teal	19-May-18	Male	Juvenile?	400	3	3	0	1	1	1	0	0	0	0	0	May-June 2018
Lake Wellington	147.41025	-38.106639	1.2	17	1	1	Grey Teal	19-May-18	Male	Juvenile?	420	3	3	0	1	1	1	0	0	0	0	0	May-June 2018
Lake Wellington	147.41025	-38.106639	1.2	18	1	1	Grey Teal	19-May-18	Female	Juvenile	400	3	3	0	1	1	1	0	0	0	0	0	May-June 2018
Heart Morass	147.10821	-38.134553	1.1	19	2	0	Pacific Black Duck	20-May-18	Male	unsure	1100	3	3	0	1	1	1	0	0	0	0	0	May-June 2018
Heart Morass	147.10821	-38.134553	1.1	20	2	0	Pacific Black Duck	20-May-18	Male	unsure	1200	3	3	0	1	1	1	0	0	0	0	1	May-June 2018
Heart Morass	147.10821	-38.134553	1.1	21	2	0	Pacific Black Duck	20-May-18	Female	Adult	960	3	3	0	1	1	1	0	0	0	0	0	May-June 2018
Heart Morass	147.10821	-38.134553	1.1	22	2	0	Pacific Black Duck	20-May-18	Female	Adult	950	3	3	0	1	1	1	0	0	1	1	1	May-June 2018
Heart Morass	147.10821	-38.134553	1.1	23	2	0	Pacific Black Duck	20-May-18	Male	Adult	1150	3	3	0	1	1	1	0	0	0	0	0	May-June 2018
Heart Morass	147.10821	-38.134553	1.1	24	2	0	Pacific Black Duck	20-May-18	Female	Adult	950	3	3	0	1	1	1	0	0	0	0	0	May-June 2018
Aire River	143.46508	-38.773849	9.1	25	3	4	Chestnut Teal	25-May-18	Female	Adult	570	2	2	0	0	1	0	0	1	0	0	0	May-June 2018
Aire River	143.46508	-38.773849	9.1	26	3	4	Chestnut Teal	25-May-18	Female	Juvenile	545	2	2	0	0	1	0	0	1	0	0	0	May-June 2018
Reedy Lake	144.42726	-38.202846	3.1	27	4	24	Chestnut Teal	28-May-18	Male	Adult	568	2	2	0	0	1	0	0	1	0	0	0	May-June 2018
Reedy Lake	144.42726	-38.202846	3.1	28	4	24	Chestnut Teal	28-May-18	Female	Adult	575	2	2	0	0	1	0	0	1	0	0	0	May-June 2018
Aire River	143.46508	-38.773849	9.1	29	3	4	Chestnut Teal	25-May-18	Male	Adult	568	2	2	0	0	1	0	0	1	0	0	0	May-June 2018
Aire River	143.46508	-38.773849	9.1	30	3	5	Grey Teal	25-May-18	Male	Adult	551	2	2	0	0	1	0	0	1	0	0	0	May-June 2018
Aire River	143.46508	-38.773849	9.1	31	3	5	Grey Teal	25-May-18	Female	Adult	513	2	2	0	0	1	0	0	1	0	0	0	May-June 2018
Aire River	143.46508	-38.773849	9.1	32	3	5	Grey Teal	25-May-18	Female	Adult	510	2	2	0	0	1	0	0	1	0	0	0	May-June 2018
Lake Nagambie	145.13052	-36.748548	17.1	33	5	23	Grey Teal	26-May-18	Female	Juvenile	519	2	2	0	0	0	1	0	1	0	0	0	May-June 2018
Aire River	143.46508	-38.773849	9.1	34	3	5	Grey Teal	26-May-18	Female	Juvenile	550	2	2	0	0	1	0	0	1	0	0	0	May-June 2018
Aire River	143.46508	-38.773849	9.1	35	3	5	Grey Teal	26-May-18	Female	Adult	519	2	2	0	0	1	0	0	1	0	0	0	May-June 2018

Reedy Lake	144.42726	-38.202846	3.1	36	4	25	Pink-eared Duck	28-May-18	Female	Adult	193	2	2	0	0	1	0	0	1	0	0	May-June 2018
Jones Bay	147.6516	-37.842901	8.1	37	6	17	Chestnut Teal	25-May-18	Female	unsure	450	2	2	0	0	1	0	0	1	1	1	May-June 2018
McLeods Morass	147.62025	-37.84622	8.2	39	7	13	Pacific Black Duck	26-May-18	Female	Adult	900	2	2	0	0	1	0	0	1	0	1	May-June 2018
McLeods Morass	147.62025	-37.84622	8.2	40	7	14	Pink-eared Duck	26-May-18	Male	unsure	450	2	2	0	0	1	0	0	1	0	1	May-June 2018
McLeods Morass	147.62025	-37.84622	8.2	41	7	14	Pink-eared Duck	26-May-18	Female	unsure	340	2	2	0	0	1	0	0	1	0	1	May-June 2018
McLeods Morass	147.62025	-37.84622	8.2	42	7	15	Chestnut Teal	26-May-18	Female	Adult	510	2	2	0	0	1	0	0	1	0	1	May-June 2018
McLeods Morass	147.62025	-37.84622	8.2	43	7	16	Grey Teal	26-May-18	Male	Adult	510	2	2	0	0	1	0	0	1	0	1	May-June 2018
McLeods Morass	147.62025	-37.84622	8.2	44	7	15	Chestnut Teal	26-May-18	Female	Adult	400	2	2	0	0	1	0	0	1	0	1	May-June 2018
McLeods Morass	147.62025	-37.84622	8.2	45	7	13	Pacific Black Duck	26-May-18	Male	Adult	1050	2	2	0	1	1	0	0	1	0	0	May-June 2018
McLeods Morass	147.62025	-37.84622	8.2	46	7	15	Chestnut Teal	26-May-18	Female	Adult	450	2	2	0	0	1	0	0	1	0	1	May-June 2018
McLeods Morass	147.62025	-37.84622	8.2	47	7	16	Grey Teal	26-May-18	Female	Adult	430	2	2	0	1	1	0	0	1	0	1	May-June 2018
McLeods Morass	147.62025	-37.84622	8.2	48	7	16	Grey Teal	26-May-18	Male	Adult	470	2	2	0	1	1	0	0	1	0	1	May-June 2018
McLeods Morass	147.62025	-37.84622	8.2	49	7	13	Pacific Black Duck	26-May-18	Female	Adult	1055	2	2	0	1	1	0	0	1	0	0	May-June 2018
Jones Bay	147.6516	-37.842901	8.1	55	6	17	Chestnut Teal	27-May-18	Male	unsure	600	2	2	0	1	1	0	0	1	1	1	May-June 2018
Jones Bay	147.6516	-37.842901	8.1	60	6	17	Chestnut Teal	28-May-18	Female	unsure	445	2	2	0	1	1	0	0	1	1	1	May-June 2018
Jones Bay	147.6516	-37.842901	8.1	61	6	17	Chestnut Teal	27-May-18	Male	unsure	0	2	2	0	1	1	0	0	1	1	0	May-June 2018
Lake Curlip	148.5596	-37.745449	25.1	62	8	6	Pacific Black Duck	26-May-18	Male	Adult	0	2	2	0	1	1	0	0	1	0	0	May-June 2018
Lake Curlip	148.5596	-37.745449	25.1	63	8	6	Pacific Black Duck	26-May-18	Female	Adult	1050	2	2	0	1	1	0	0	1	0	0	May-June 2018
Lake Curlip	148.5596	-37.745449	25.1	64	8	6	Pacific Black Duck	26-May-18	Female	Adult	975	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Curlip	148.5596	-37.745449	25.1	65	8	7	Chestnut Teal	27-May-18	Female	Adult	545	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Curlip	148.5596	-37.745449	25.1	66	8	7	Chestnut Teal	27-May-18	Male	Adult	575	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Curlip	148.5596	-37.745449	25.1	67	8	7	Chestnut Teal	26-May-18	Female	Adult	430	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Curlip	148.5596	-37.745449	25.1	68	8	8	Grey Teal	27-May-18	Female	Adult	540	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Curlip	148.5596	-37.745449	25.1	69	8	8	Grey Teal	27-May-18	Male	Adult	542	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Curlip	148.5596	-37.745449	25.1	70	8	8	Grey Teal	27-May-18	Male	Adult	550	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Curlip	148.5596	-37.745449	25.1	71	8	8	Grey Teal	27-May-18	Male	Adult	500	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Curlip	148.5596	-37.745449	25.1	72	8	9	Pink-eared Duck	27-May-18	Female	unsure	378	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Curlip	148.5596	-37.745449	25.1	73	8	9	Pink-eared Duck	27-May-18	Male	Adult	400	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Wat Wat	148.52423	-37.762467	25.2	74	9	10	Chestnut Teal	28-May-18	Male	Adult	650	2	2	0	0	1	0	0	1	0	1	May-June 2018
Lake Wat Wat	148.52423	-37.762467	25.2	75	9	10	Chestnut Teal	28-May-18	Male	unsure	640	2	2	0	0	1	0	0	1	0	1	May-June 2018
Lake Wat Wat	148.52423	-37.762467	25.2	76	9	10	Chestnut Teal	28-May-18	Male	Adult	610	2	2	0	0	1	0	0	1	0	1	May-June 2018
Lake Wat Wat	148.52423	-37.762467	25.2	77	9	10	Chestnut Teal	28-May-18	Male	Adult	530	2	2	0	0	1	0	0	1	0	1	May-June 2018
Lake Wat Wat	148.52423	-37.762467	25.2	78	9	10	Chestnut Teal	28-May-18	Male	Adult	640	2	2	0	0	1	0	0	1	0	1	May-June 2018
Lake Wat Wat	148.52423	-37.762467	25.2	79	9	11	Chestnut Teal	28-May-18	Male	Adult	650	2	2	0	1	1	0	0	1	0	0	May-June 2018
Lake Wat Wat	148.52423	-37.762467	25.2	80	9	11	Chestnut Teal	28-May-18	Female	Adult	510	2	2	0	0	1	0	0	1	0	1	May-June 2018
Lake Wat Wat	148.52423	-37.762467	25.2	81	9	11	Chestnut Teal	28-May-18	Female	Adult	590	2	2	0	0	1	0	0	1	0	1	May-June 2018
Lake Wat Wat	148.52423	-37.762467	25.2	82	9	11	Chestnut Teal	28-May-18	Male	Adult	435	2	2	0	0	1	0	0	1	0	1	May-June 2018

Lake Wat Wat	148.52423	-37.762467	25.2	83	9	12	Grey Teal	28-May-18	Male	Adult	518	2	2	0	0	1	0	0	1	0	1	May-June 2018
Lake Wat Wat	148.52423	-37.762467	25.2	84	9	12	Grey Teal	28-May-18	Female	unsure	430	2	2	0	0	1	0	0	1	0	1	May-June 2018
Lake Wat Wat	148.52423	-37.762467	25.2	85	9	12	Grey Teal	28-May-18	Male	unsure	500	2	2	0	0	1	0	0	1	0	1	May-June 2018
Richardsons Lagoon	144.55833	-36.034444	11.1	86	10	18	Grey Teal	27-May-18	Female	Adult	430	2	2	0	0	1	0	0	1	1	0	May-June 2018
Richardsons Lagoon	144.55833	-36.034444	11.1	87	10	18	Pacific Black Duck	27-May-18	Female	Adult	1175	2	2	0	0	1	0	0	1	0	0	May-June 2018
Aire River	143.46508	-38.773849	9.1	88	3	19	Pacific Black Duck	25-May-18	Female	Adult	1200	2	2	0	0	1	0	0	1	1	1	May-June 2018
Aire River	143.46508	-38.773849	9.1	89	3	19	Chestnut Teal	25-May-18	Female	Adult	550	2	2	0	0	1	0	0	1	0	0	May-June 2018
Aire River	143.46508	-38.773849	9.1	90	3	19	Pacific Black Duck	25-May-18	Female	Adult	1300	2	2	0	1	1	0	0	1	0	0	May-June 2018
Aire River	143.46508	-38.773849	9.1	91	3	19	Pacific Black Duck	25-May-18	Male	Adult	1080	2	2	0	0	1	0	0	1	0	0	May-June 2018
Aire River	143.46508	-38.773849	9.1	92	3	19	Pacific Black Duck	25-May-18	Male	unsure	1200	2	2	0	0	1	0	0	1	0	0	May-June 2018
Aire River	143.46508	-38.773849	9.1	93	3	19	Pacific Black Duck	25-May-18	Male	Adult	1270	2	2	0	0	1	0	0	1	0	0	May-June 2018
Richardsons Lagoon	144.55833	-36.034444	11.1	94	10	18	Grey Teal	27-May-18	Male	Adult	450	2	2	0	0	1	0	0	1	1	0	May-June 2018
Green Lake	144.82972	-36.43889	4.1	95	11	20	Pacific Black Duck	28-May-18	Male	Adult	1200	2	2	0	0	1	0	0	1	1	0	May-June 2018
Green Lake	144.82972	-36.43889	4.1	96	11	20	Pacific Black Duck	27-May-18	Female	Adult	975	2	2	0	0	1	0	0	1	0	0	May-June 2018
Green Lake	144.82972	-36.43889	4.1	97	11	20	Pacific Black Duck	28-May-18	Female	Adult	950	2	2	0	0	1	0	0	1	1	0	May-June 2018
Green Lake	144.82972	-36.43889	4.1	98	11	20	Pacific Black Duck	28-May-18	Female	Adult	1150	2	2	0	0	1	0	0	1	0	0	May-June 2018
Green Lake	144.82972	-36.43889	4.1	99	11	20	Pacific Black Duck	25-May-18	Female	Adult	1250	2	2	0	0	1	0	0	1	0	0	May-June 2018
Green Lake	144.82972	-36.43889	4.1	100	11	20	Pacific Black Duck	25-May-18	Male	Adult	1140	2	2	0	0	1	0	0	1	0	0	May-June 2018
Hospital Swamp	144.41519	-38.236741	3.2	101	12	21	Pacific Black Duck	18-May-18	Male	unsure	1100	2	2	0	0	1	0	0	1	0	0	May-June 2018
Hospital Swamp	144.41519	-38.236741	3.2	102	12	21	Pacific Black Duck	25-May-18	Male	Adult	1075	2	2	0	0	1	0	0	1	0	0	May-June 2018
Hospital Swamp	144.41519	-38.236741	3.2	103	12	21	Pacific Black Duck	25-May-18	Male	Adult	1200	2	2	0	0	1	0	0	1	0	0	May-June 2018
Hospital Swamp	144.41519	-38.236741	3.2	104	12	21	Pacific Black Duck	18-May-18	Female	Adult	1150	2	2	0	0	1	0	0	1	0	0	May-June 2018
Hospital Swamp	144.41519	-38.236741	3.2	105	12	21	Pacific Black Duck	18-May-18	Male	Adult	1250	2	2	0	0	1	0	0	1	0	0	May-June 2018
Hospital Swamp	144.41519	-38.236741	3.2	106	12	21	Pacific Black Duck	18-May-18	Female	Juvenile	900	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Nagambie	145.13052	-36.748548	17.1	107	5	22	Pacific Black Duck	26-May-18	Male	unsure	1000	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Nagambie	145.13052	-36.748548	17.1	108	5	22	Pacific Black Duck	26-May-18	Female	unsure	1020	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Nagambie	145.13052	-36.748548	17.1	109	5	22	Pacific Black Duck	26-May-18	Female	unsure	1050	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Nagambie	145.13052	-36.748548	17.1	110	5	22	Pacific Black Duck	26-May-18	Female	Adult	1100	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Nagambie	145.13052	-36.748548	17.1	111	5	22	Pacific Black Duck	26-May-18	Female	unsure	1060	2	2	0	0	1	0	0	1	0	0	May-June 2018
Jn Goulburn & Rubicon rivers	145.75034	-37.242984	24.1	112	13	26	Grey Teal	25-May-18	Female	Adult	420	2	2	0	1	1	0	0	1	0	0	May-June 2018
Jn Goulburn & Rubicon rivers	145.75034	-37.242984	24.1	113	13	26	Grey Teal	25-May-18	Male	Adult	470	2	2	0	1	1	0	0	1	0	0	May-June 2018
Jn Goulburn & Rubicon rivers	145.75034	-37.242984	24.1	114	13	27	Pacific Black Duck	25-May-18	Female	unsure	1050	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Bolac	142.86677	-37.69917	26.1	115	14	28	Pacific Black Duck	30-May-18	Female	Adult	1150	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Bolac	142.86677	-37.69917	26.1	116	14	28	Pacific Black Duck	30-May-18	Male	Adult	1180	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Bolac	142.86677	-37.69917	26.1	117	14	28	Pacific Black Duck	30-May-18	Female	Adult	950	2	2	0	1	1	0	0	1	0	0	May-June 2018
Lake Bolac	142.86677	-37.69917	26.1	118	14	28	Pacific Black Duck	30-May-18	Male	Adult	1150	2	2	0	1	1	0	0	1	0	0	May-June 2018
Lake Bolac	142.86677	-37.69917	26.1	119	14	29	Grey Teal	30-May-18	Male	unsure	565	2	2	0	0	1	0	0	1	0	0	May-June 2018

Lake Bolac	142.86677	-37.69917	26.1	120	14	29	Grey Teal	30-May-18	Female	unsure	420	2	2	0	0	1	0	0	1	1	1	May-June 2018
Lake Bolac	142.86677	-37.69917	26.1	121	14	29	Grey Teal	30-May-18	Male	unsure	460	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Bolac	142.86677	-37.69917	26.1	122	14	29	Grey Teal	30-May-18	Male	unsure	380	2	2	0	1	1	0	0	1	0	0	May-June 2018
Lake Bolac	142.86677	-37.69917	26.1	123	14	29	Grey Teal	30-May-18	Female	unsure	410	2	2	0	0	1	0	0	1	1	1	May-June 2018
Lake Bolac	142.86677	-37.69917	26.1	124	14	29	Grey Teal	30-May-18	Male	unsure	550	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Bolac	142.86677	-37.69917	26.1	125	14	30	Chestnut Teal	30-May-18	Male	unsure	500	2	2	0	0	1	0	0	1	1	1	May-June 2018
Lake Bolac	142.86677	-37.69917	26.1	126	14	29	Grey Teal	30-May-18	Female	unsure	470	2	2	0	0	1	0	0	1	0	0	May-June 2018
Lake Bolac	142.86677	-37.69917	26.1	127	14	30	Chestnut Teal	30-May-18	Male	Juvenile	485	2	2	0	0	1	0	0	1	1	1	May-June 2018
Lake Kennedy	142.18684	-37.769624	22.1	128	18	31	Grey Teal	6-Jun-18	Male	Adult	480	2	2	0	1	1	0	0	1	1	1	May-June 2018
Lake Kennedy	142.18684	-37.769624	22.1	129	18	31	Grey Teal	6-Jun-18	Male	Adult	440	2	2	0	1	1	0	0	1	1	1	May-June 2018
Lake Kennedy	142.18684	-37.769624	22.1	130	18	31	Grey Teal	7-Jun-18	Male	Adult	515	2	2	0	1	1	0	0	1	1	1	May-June 2018
Lake Kennedy	142.18684	-37.769624	22.1	131	18	31	Grey Teal	7-Jun-18	Female	Adult	430	2	2	0	1	1	0	0	1	1	1	May-June 2018
Lake Kennedy	142.18684	-37.769624	22.1	132	18	31	Grey Teal	7-Jun-18	Male	Juvenile	475	2	2	0	1	1	0	0	1	1	1	May-June 2018
Lake Kennedy	142.18684	-37.769624	22.1	133	18	31	Grey Teal	7-Jun-18	Male	Adult	470	2	2	0	1	1	0	0	1	1	1	May-June 2018
Serpentine Creek	143.93516	-36.240392	7.1	134	19	32	Grey Teal	8-Jun-18	Male	Adult	530	2	2	0	1	1	0	0	1	1	1	May-June 2018
Serpentine Creek	143.93516	-36.240392	7.1	135	19	32	Grey Teal	8-Jun-18	Male	Adult	530	2	2	0	1	1	0	0	1	1	1	May-June 2018
Serpentine Creek	143.93516	-36.240392	7.1	136	19	32	Grey Teal	8-Jun-18	Female	Adult	470	2	2	0	1	1	0	0	1	1	1	May-June 2018
Serpentine Creek	143.93516	-36.240392	7.1	137	19	32	Grey Teal	8-Jun-18	Male	Adult	500	2	2	0	1	1	0	0	1	1	1	May-June 2018
Loddon River, Jarklin	143.89672	-36.217318	7.2	138	23	33	Pacific Black Duck	8/06/2018	Female	Adult	1100	2	2	0	1	1	0	0	1	1	1	May-June 2018
Loddon River, Jarklin	143.89672	-36.217318	7.2	139	23	33	Pacific Black Duck	8/06/2018	Male	Adult	1350	2	2	0	1	1	0	0	1	1	1	May-June 2018
Loddon River, Jarklin	143.89672	-36.217318	7.2	140	23	33	Pacific Black Duck	8/06/2018	Male	Adult	1180	2	2	0	1	1	0	0	1	0	0	May-June 2018
Loddon River, Jarklin	143.89672	-36.217318	7.2	141	23	33	Pacific Black Duck	8/06/2018	Male	Adult	1250	2	2	0	1	1	0	0	1	0	0	May-June 2018
Loddon River, Jarklin	143.89672	-36.217318	7.2	142	23	33	Pacific Black Duck	8/06/2018	Male	Adult	1120	2	2	0	1	1	0	0	1	0	0	May-June 2018
Newlands	141.05248	-36.971783	27.1	143	21	34	Pink-eared Duck	8-Jun-18	Male	Adult	380	2	2	0	1	1	0	0	1	1	1	May-June 2018
Newlands	141.05248	-36.971783	27.1	144	21	34	Pink-eared Duck	8-Jun-18	Male	Adult	400	2	2	0	1	1	0	0	1	1	1	May-June 2018
Newlands	141.05248	-36.971783	27.1	145	21	34	Pink-eared Duck	8-Jun-18	Female	Adult	330	2	2	0	1	1	0	0	1	1	1	May-June 2018
Newlands	141.05248	-36.971783	27.1	146	21	34	Pink-eared Duck	8-Jun-18	Female	Juvenile	290	2	2	0	1	1	0	0	1	1	1	May-June 2018
Newlands	141.05248	-36.971783	27.1	147	21	34	Pink-eared Duck	8-Jun-18	Male	Adult	350	2	2	0	1	1	0	0	1	1	1	May-June 2018
Newlands	141.05248	-36.971783	27.1	148	21	34	Pink-eared Duck	8-Jun-18	Male	Adult	420	2	2	0	1	1	0	0	1	1	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	149	22	35	Pacific Black Duck	10-Jun-18	Male	unsure	1000	2	2	0	1	1	0	0	1	1	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	150	22	35	Pacific Black Duck	10-Jun-18	Male	Adult	1080	2	2	0	1	1	0	0	1	1	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	151	22	35	Pacific Black Duck	10-Jun-18	Male	Adult	1150	2	2	0	1	1	0	0	1	1	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	152	22	36	Pink-eared Duck	10-Jun-18	Female	Adult	350	2	2	0	1	1	0	0	1	1	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	153	22	36	Pink-eared Duck	10-Jun-18	Male	Adult	380	2	2	0	1	1	0	0	1	1	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	154	22	36	Pink-eared Duck	10-Jun-18	Male	Adult	435	2	2	0	1	1	0	0	1	1	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	155	22	36	Pink-eared Duck	10-Jun-18	Female	Adult	380	2	2	0	1	1	0	0	1	1	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	156	22	37	Chestnut Teal	10-Jun-18	Male	Adult	580	2	2	0	1	1	0	0	1	1	1	May-June 2018

Lake Cullen	143.76358	-35.647934	2.1	157	22	37	Chestnut Teal	10-Jun-18	Male	Juvenile	560	2	2	0	1	1	0	0	1	1	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	158	22	37	Chestnut Teal	10-Jun-18	Female	Adult	515	2	2	0	1	1	0	0	1	1	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	159	22	37	Chestnut Teal	10-Jun-18	Male	Juvenile	460	2	2	0	1	1	0	0	1	1	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	160	22	37	Chestnut Teal	10-Jun-18	Female	Adult	505	2	2	0	1	1	0	0	1	1	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	161	22	37	Chestnut Teal	10-Jun-18	Female	Adult	365	2	2	0	1	1	0	0	1	0	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	162	22	37	Chestnut Teal	10-Jun-18	Male	Adult	505	2	2	0	1	1	0	0	1	0	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	163	22	38	Grey Teal	10-Jun-18	Male	Adult	490	2	2	0	0	1	0	0	1	0	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	164	22	38	Grey Teal	10-Jun-18	Male	Adult	525	2	2	0	1	0	0	0	1	0	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	165	22	38	Grey Teal	10-Jun-18	Male	Adult	450	2	2	0	1	1	0	0	1	0	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	166	22	38	Grey Teal	10-Jun-18	Female	unsure	360	2	2	0	1	1	0	0	1	0	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	167	22	38	Grey Teal	10-Jun-18	Female	Adult	400	2	2	0	1	1	0	0	1	0	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	168	22	38	Grey Teal	10-Jun-18	Female	Adult	440	2	2	0	1	1	0	0	1	0	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	169	22	38	Grey Teal	10-Jun-18	Female	Adult	395	2	2	0	1	1	0	0	1	0	1	May-June 2018
Lake Cullen	143.76358	-35.647934	2.1	170	22	38	Grey Teal	10-Jun-18	Female	Adult	470	2	2	0	1	1	0	0	1	0	1	May-June 2018
Jones Bay	147.6516	-37.842901	8.1	171	6	39	Pacific Black Duck	27-May-18	Male	Adult	1200	2	2	0	0	1	0	0	1	0	0	May-June 2018
Jones Bay	147.6516	-37.842901	8.1	172	6	39	Pacific Black Duck	27-May-18	Male	Adult	950	2	2	0	0	0	0	0	1	0	1	May-June 2018
Jones Bay	147.6516	-37.842901	8.1	173	6	40	Grey Teal	27-May-18	Male	Adult	500	2	2	0	0	1	0	0	1	0	0	May-June 2018
Jones Bay	147.6516	-37.842901	8.1	174	6	40	Grey Teal	27-May-18	Female	unsure	455	2	2	0	0	1	0	0	1	0	0	May-June 2018
Jones Bay	147.6516	-37.842901	8.1	175	6	40	Grey Teal	27-May-18	Male	Adult	550	2	2	0	0	1	0	0	1	0	0	May-June 2018
Jones Bay	147.6516	-37.842901	8.1	176	6	40	Grey Teal	27-May-18	Female	Adult	450	2	2	0	0	1	0	0	1	0	0	May-June 2018

Wetland_Name	Longitude	Latitude	Wetland_Number	Specimen_Number	Wetland_ID	Composite_Group_ID	Species	Collection_Date	Sex	Age	Weight_(g)
Serpentine Creek	143.935162	-36.240392	7.1	134	19		32 Grey Teal	8/06/2018	Male	Adult	530
Serpentine Creek	143.935162	-36.240392	7.1	135	19		32 Grey Teal	8/06/2018	Male	Adult	530
Serpentine Creek	143.935162	-36.240392	7.1	136	19		32 Grey Teal	8/06/2018	Female	Adult	470
Serpentine Creek	143.935162	-36.240392	7.1	137	19		32 Grey Teal	8/06/2018	Male	Adult	500
Richardsons Lagoon	144.558333	-36.034444	11.1	86	10		18 Grey Teal	27/05/2018	Female	Adult	430
Richardsons Lagoon	144.558333	-36.034444	11.1	87	10		18 Pacific Black Duck	27/05/2018	Female	Adult	1175
Richardsons Lagoon	144.558333	-36.034444	11.1	94	10		18 Grey Teal	27/05/2018	Male	Adult	450
McLeods Morass	147.620251	-37.84622	8.2	43	7		16 Grey Teal	26/05/2018	Male	Adult	510
McLeods Morass	147.620251	-37.84622	8.2	47	7		16 Grey Teal	26/05/2018	Female	Adult	430
McLeods Morass	147.620251	-37.84622	8.2	48	7		16 Grey Teal	26/05/2018	Male	Adult	470
Heart Morass	147.108214	-38.134553	1.1	19	2		0 Pacific Black Duck	20/05/2018	Male	unsure	1100
Heart Morass	147.108214	-38.134553	1.1	20	2		0 Pacific Black Duck	20/05/2018	Male	unsure	1200
Heart Morass	147.108214	-38.134553	1.1	21	2		0 Pacific Black Duck	20/05/2018	Female	Adult	960
Heart Morass	147.108214	-38.134553	1.1	22	2		0 Pacific Black Duck	20/05/2018	Female	Adult	950
Heart Morass	147.108214	-38.134553	1.1	23	2		0 Pacific Black Duck	20/05/2018	Male	Adult	1150
Heart Morass	147.108214	-38.134553	1.1	24	2		0 Pacific Black Duck	20/05/2018	Female	Adult	950

Note: Composite samples for each breast and liver tissues were analysed at each wetland.



NMI LRN	SAMPLE REFERENCE	REPORT NUMBER	Wetland_Name	Lead concentration (mg/kg)		FSANZ maximum level (mg/kg)		Duck consumption advice already in place (based on PFAS)?
				Composite breast	Composite liver	Poultry meat	Poultry liver	
N18/018490/B and N18/018490/L	10717/1,3,5,7 (breast) and 10717	RN1206340	Serpentine Creek	0.35	0.18	0.1	0.5	No
N18/017328/B and N18/017328/L	09347/2,4,6 (composite breast)	RN1203966	Richardsons Lagoon	0.28	0.23	0.1	0.5	No
N18/017312/B and N18/017312/L	09345/1,3,5 (breast) and 09345	RN1203966	Macleod Morass	0.02	1.3	0.1	0.5	Yes
N18/017848/B and N18/017848/L	PD_1.1 COMP (B) and PD_1.1 C	RN1204281	Heart Morass	0.02	1.1	0.1	0.5	Yes

Note 1: lead concentrations are for composite samples

Note 2: concentrations in red exceed the FSANZ maximum level (Schedule 19 - Maximum levels of contaminants and natural toxicants)

Wetland	Species	Tissue	Lead concentration (mg/kg)	FSANZ ML
Richardsons Lagoon	Grey Teal or Pacific Black Duck	Breast	0.69	0.1
Richardsons Lagoon	Grey Teal or Pacific Black Duck	Breast	0.02	
Richardsons Lagoon	Grey Teal or Pacific Black Duck	Liver	0.11	
Richardsons Lagoon	Grey Teal or Pacific Black Duck	Breast	<0.01	
Serpentine Ck	Grey Teal	Liver	0.16	
Serpentine Ck	Grey Teal	Liver	1.5	0.5
Serpentine Ck	Grey Teal	Liver	0.11	
Serpentine Ck	Grey Teal	Liver	0.1	

No breast samples available for Serpentine Creek

FSANZ ML for poultry liver is 0.5. Note that composite results from 2018 did not exceed FSANZ

**These two wetlands already have advice:**

Pacific Black Duck	Heart Morass	DUCK LIVER	0.17
Pacific Black Duck	Heart Morass	DUCK LIVER	1.2
Grey Teal	Macleod Morass	DUCK BREAST	0.01
Grey Teal	Macleod Morass	DUCK LIVER	0.2
Grey Teal	Macleod Morass	DUCK BREAST	0.07
Grey Teal	Macleod Morass	DUCK BREAST	0.01

## Lead in ducks: background

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- All started with first request from Out of scope a year ago about the Preliminary lead in wetlands investigation (2017)
- In doing the request, I reviewed the ducks data from the Emerging Contaminants in Biota program (2018)
- Found high lead levels in ducks from four wetlands: Heart Morass, Macleod Morass, Richardsons Lagoon and Serpentine Ck
- Heart Morass and Macleod Morass already had advices, but related to PFAS
- An investigation was started on Richardsons Lagoon and Serpentine Ck in November 2020
  - Environmental samples collected in December 2020 and data analysed
  - Brief sent to CES in March 2021 to continue the investigation based on the environmental results
  - Continue investigation is for human health and involves the collection and analysis of ducks from the two wetlands.

## Lead in ducks: current issues

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### 1. Heart Morass and Macleod Morass requests

- Many inquiries from <sup>Out of scope</sup> [redacted] and other community members (apparently part of the same group)
- CES, advisory team and EPHU have been involved on these requests
- One request asking for lab reports related to these two wetlands (Ale working on this). Issues:
  - big reports (70 pp) with other wetlands, including the two under investigation currently. How do we send this information? Editing reports? What are the potential risks? EPA reputational risk?
  - Majority of chemicals <LORs. Many metals and some pesticides >LORs. How will this data be interpreted by the community? EPA reputational risk?
  - I have raised these concerns with Sophie and Tara. No further steps taken.

### 2. Richardsons Lagoon and Serpentine Creek investigation

- Community has not been advised on this investigation and the issues found
- CES approved investigation to continue with the collection of ducks
- I'm having meetings and conversations with ARI.
- F&G Australia not responding – not sure if they will be keen to cooperate.
- Issues:
  - We might not be able to obtain ducks during this hunting season. What's next?