



BRIEFING

Subject	Environmental lead concentrations in two wetlands in north-central Victoria: an investigation following high lead levels results in duck samples.
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Recommendation/s

That you:

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| <p>a) Review and approve the Sampling plan attached to this briefing and one of the two laboratory analysis options presented in the plan (preferred option is Option 2).</p> | <p><input type="checkbox"/> Approved
 <input type="checkbox"/> Not approved
 <input type="checkbox"/> Noted
 <input type="checkbox"/> Review required
 <input type="checkbox"/> Please Discuss</p> |
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<p>Out of scope Out of scope - Applied Sciences Date:</p>	<p>Comments:</p>
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Key information/issues

1. Elevated lead concentrations were recorded in ducks collected in Serpentine Creek and Richardsons Lagoon as part of EPA's 2018 Biota Emerging Contaminants program.
2. Concentrations were above Food Standards Australia New Zealand (FSANZ) guidelines for lead in poultry and warrant further investigation to evaluate potential risks to the environment and human health.
3. The collection and analysis of environmental samples is the first step in this investigation and is the simplest and least expensive way to continue this work. It is proposed that the sampling is conducted as soon as possible to allow sufficient time for analysis before the start of the hunting season in Autumn 2021.
4. The attached sampling plan (**Attachment 1**) aims at collecting environmental samples (waters, sediments, and soils) from Serpentine Creek and Richardsons Lagoon to understand potential ecological and/or human health risks, and the relationship with levels found in duck samples.
5. The sampling plan presents two options for the chemical analysis of the samples. Option 1 proposes to analyse samples only for lead. Option 2 proposes to analyse samples for a suite of metals, including lead, arsenic and copper. Option 1 is the minimum required to evaluate the risk from lead. Option 2 will provide further data to compare against the 2018 results, determine any inconsistencies in the 2018 data that could be linked to the high levels in the ducks, and, ultimately, determine the potential risk from recreational hunting using other metals information. Option 2 is the preferred option.
6. Environmental results will provide a clearer understanding of the environmental concentrations and any potential risks. The results will also determine if the collection of more ducks is warranted.
7. EPA's investigations in wetlands have been followed by the community. Depending on the results from this investigation, there may be a need to develop consumption advice in collaboration with CEG and engage with the community through our regional office in Bendigo.

Background context

8. Lead concentrations in ducks collected as part of EPA's 2018 Biota Emerging Contaminants program were revisited in September this year following a community member inquiry about our 2017 lead in wetlands study (EPA Publication 1681).
9. High concentrations were found in breast samples from ducks collected in Serpentine Creek and Richardsons Lagoon in north-central Victoria. The concentrations were above FSANZ maximum levels for lead in poultry. These findings triggered further investigations that included:
 - The re-analysis of duck samples. The laboratory NMI analysed the duck samples in 2018 and had a few samples stored from the two wetlands. The new results confirmed those from 2018 in some individual breast samples, with lead levels well above the FSANZ.
 - EPHU assessed the results. It was decided that, with the limited data available (three samples from Serpentine Creek and none for Richardsons Lagoon), it was not possible to make any conclusions about potential health risks from consumption of recreationally hunted ducks from the two wetlands.
10. The Arthur Rylah Institute (ARI) coordinated EPA's 2018 fieldwork for the collection of ducks, including the preparation and submission of Animal Ethics, permits, safety procedures, and other administration required.
11. ARI has already been engaged to evaluate the possibility of collecting ducks and provide some estimated costs.

Financial implications

12. The sampling plan attached to this briefing includes two sampling options and their associated costs.



13. The source of the budget needs to be identified. Out of scope will be consulted once the sampling plan is approved.

Consultation

14. Out of scope, EPHU, Out of scope and WSU staff were consulted in the development of this brief.

Attachments

No.	Attachment name
1	Sampling plan - Lead in wetlands investigation