W14 Deer: Assessment of deer control effectiveness at the Cardinia, Silvan and Upper Yarra water supply reservoirs

Objective(s)

To develop survey methods and models to predict deer density and impacts across the Melbourne Water region, identify ecological values at highest risk and determine appropriate actions to control or mitigate the risks posed by deer.

Why this research is important

Deer present a high risk of introducing pathogens to Melbourne's drinking water supply by faecal contamination, and cause significant impacts to native vegetation within catchments managed by Melbourne Water.

Melbourne Water aims to eradicate deer from the closed (fenced) Cardinia and Silvan catchments and reduce deer density within open (unfenced) catchments such as the Upper Yarra and Werribee catchments. These works, which are guided by the Healthy Waterways Strategy and Silvan System Deer Management Plan, will be implemented over the next 5–10 years. Strategies for deer impact mitigation more broadly are also being developed via collaborations with DEECA, Parks Victoria and others e.g. under the Victorian Deer Control Strategy and Peri-urban Deer Control plan.

However, deer control programs often do not meet their primary objective to reduce deer impacts because the method of control, location of control, or control frequency and intensity are lacking. This project aims to develop the knowledge and tools to inform effective deer management.

Contribution to Melb. Water research priorities

- MWRPP5 (RV7, RV9): Methods for the effective management of key invasive plants and animals to reduce their impact on instream and riparian vegetation communities.

Approach

This project will be delivered though 4 tasks:

1) Assessment of deer control effectiveness at Cardinia, Silvan and Upper Yarra water supply reservoirs. Fourth year of deer abundance and impact surveys.
2) Development of a deer management prioritisation tool.
3) Determine the distribution and movement of deer along the lower Birrarung. Conduct deer sign surveys (faecal pellets, pugging, wallows) around the perimeter of several billabong sites along the lower Birrarung (from Eltham to Kew) to determine deer presence and level of activity.
4) Assess the prevalence of sambar in the diet of dingo populations in the Upper Yarra. Collect predator scats observed while conducting other field work in the Upper Yarra catchment.

Key Outputs

- Robust assessment of the effectiveness of deer control at Cardinia, Silvan and Upper Yarra.
- Assessment of the accuracy of density estimates by comparison with known number of deer removed from fenced catchments during the control program.
- Spatial layers to support prioritisation of deer impact mitigation actions.
- Deer distribution maps and assessments of genetic connectedness of deer populations for the lower Birrarung.
- Improved understanding of the frequency with which sambar is contained in the diet of dingoes in the Upper Yarra catchment.

Expected benefits

- Inform adaptive management of deer control program as part of the Silvan System Deer Management Plan to a) reduce risk to water supplies, and b) reduce impacts to native vegetation.
- Validate appropriate deer density estimation methods to improve Melbourne Water's ability to manage the threat posed by deer more broadly.
- Improved effectiveness and risk-based approach to deer management.
- Improved knowledge of the extent and movement of deer along the lower Birrarung to inform mitigation strategies.

Project teams

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