Project Summary

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 from deer impacts 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 Key Research Areas

- Streamside vegetation and instream habitat *Understanding the impact and effective management of pest plants and animals on riparian vegetation*.

Achievements to date

- Comprehensive surveys of deer abundance and impacts across four years and three water supply reservoir catchments: Cardinia, Silvan and Upper Yarra.
- Report on deer population extent and impacts at lower Birrarung billabongs.
- Report on deer abundance and vegetation impact following control at Tarago Reservoir (2023).

Approach for year 3

This project will be delivered through 3 tasks:

1) Final Assessment of deer control effectiveness at Cardinia, Silvan and Upper Yarra water supply reservoirs. Includes faecal pellet counts, deer impact assessments, and camera traps.
2) Determine the long-term ecological impacts of sambar in the Upper Yarra catchment. Will compare the structure and plant diversity of forested sites with 0, ~10 years and ~20 years exclusion of deer.
3) Review of aerial control methods. Capture and summarise information from international programs, comparing effectiveness and cost.

Key outputs for year 3

- Final report on deer control program effectiveness and relationships between deer density, density estimates and indices of deer abundance and vegetation impacts
- Report on the long-term impacts of deer and the potential for forest recovery.
- Review published papers and reports on aerial control programs of large herbivore populations.
- Report on prevalence of sambar in the diet of dingo populations in the Upper Yarra.

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.

For more information

Contact Dr Joe Greet:
joe.greet@unimelb.edu.au