Detailed Ecological Risk Assessment factsheet

RAAF Base Point Cook

KEY POINTS

- **Defence has completed a Detailed Ecological Risk Assessment for RAAF Base Point Cook to address findings and recommendations from the Detailed Site Investigation completed in October 2022.**
- **The Detailed Ecological Risk Assessment considered potential risk at key areas on and around RAAF Base Point Cook, including RAAF Lake and Port Phillip Bay foreshore.**
- **Potentially elevated risks have been identified for some aquatic receptors, including birds, across Port Phillip Bay foreshore and RAAF Lake. Potentially elevated risks have also been identified for terrestrial mammals on-base.**
- **All plans and reports are published on the Defence website.**

Background

Since 2020, the Department of Defence (Defence) has undertaken investigations to better understand per- and poly-fluoroalkyl substances (PFAS) contamination on and around RAAF Base Point Cook (the base), resulting from historical use of firefighting foams on the base. The aim of the investigations has been to understand the source areas of PFAS contamination, how it is moving through the environment and the potential risks of PFAS exposure to people and the environment.

In October 2022, the Detailed Site Investigation for the base identified that most PFAS are found in areas where firefighting foams were previously used and stored. Ten source areas were identified across the base. PFAS moves from these source areas into surface water and groundwater and moves off the base into the wider environment.

The Detailed Site Investigation identified potential risks at certain locations (referred to as ecological receptors) on and around the base. A Detailed Ecological Risk Assessment was recommended to assess these risks.

This document has now been published for the base and is available at https://www.defence.gov.au/about/locations-property/pfas/pfas-management-sites/raaf-williams-laverton-raaf-base-point-cook

What are PFAS?

PFAS are manufactured chemicals that have been used in Australia and globally in many common household products and specialty applications.

Legacy firefighting foams containing PFAS have historically been used worldwide by both civilian and military authorities because they are effective in fighting liquid fuel fires. The movement of PFAS from source areas into the environment has become a concern because these chemicals can persist in humans, animals and the environment.

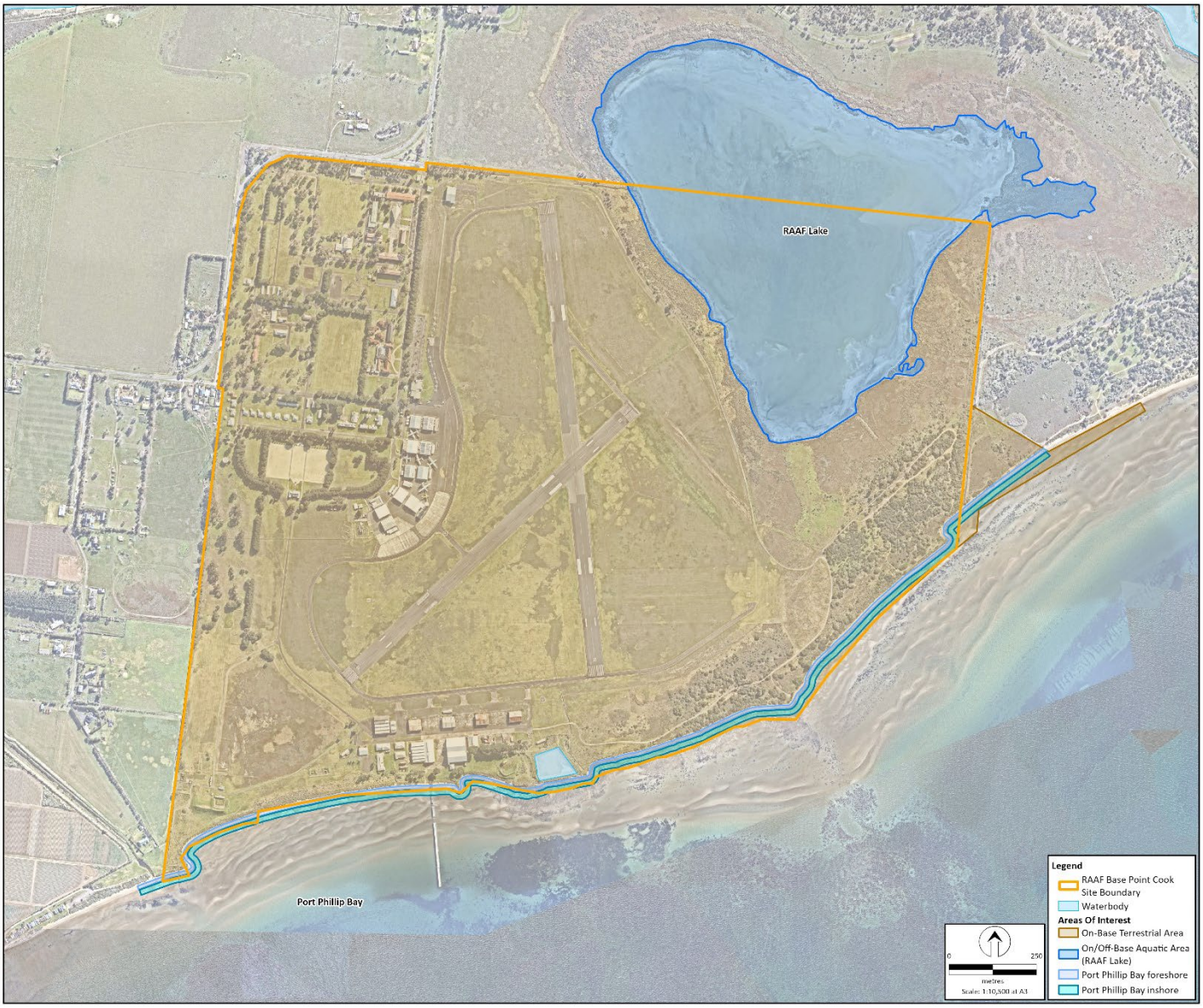
Detailed Ecological Risk Assessment

The Detailed Ecological Risk Assessment considered the potential for elevated exposure to PFAS for plants and animals within the base, and aquatic receiving environments around the base, specifically RAAF Lake and Port Phillip Bay foreshore. These are referred to as 'Areas of Interest' and are shown in Figure 1.

Environmental samples were collected from the base and surrounding areas. Results from these samples, along with historical data, were compared to published guideline values to determine if there was a potential for PFAS to impact local plants and animals. This assessment considered PFAS exposure from both direct contact (i.e., soil and water in the habitat) or through food intake (e.g. fish and insects that are the diet of certain birds).

Assumptions were made about amounts of food or water that might be consumed, and the time various animals are likely to inhabit these environments. Using these assumptions, and data from samples, an assessment of risk was completed.

Figure 1: RAAF Base Point Cook and 'areas of interest" including on-base terrestrial area, RAAF Lake and Port Phillip Bay.



Did you know?

PFAS is absorbed by plants at different rates and can accumulate in animals. Animals may ingest small amounts of PFAS from plants and other animals in the food chain, by consuming water containing PFAS, or through ingestion of soil and/or sediment.

Receptor Species and Risk Characterisation

A list of land and water-based plants and animals likely to be present within the 'Areas of Interest' was developed.

Certain species were then selected to represent a range of sizes and feeding behaviors within that type of species, and the risk assessment completed for the receptors. These are called 'Indicator Species'.

Broadly, the investigation considered the following receptors as part of the Detailed Ecological Risk Assessment:

- Aquatic environments: invertebrates, fish, birds, and aquatic flora.
- Terrestrial environments: birds, mammals, and terrestrial flora.

Conclusions

Terrestrial environments

Potential risks to lower order terrestrial species (plants and invertebrates) were estimated to be low and acceptable in all areas of the base, with the exception of the former fire station in the centre of the on base 'Area of Interest'. Potentially elevated risks were identified in this localised area due to elevated PFAS concentrations in soil.

In addition to above, risks to higher order terrestrial species were estimated to be low and acceptable across the base, with the exception of invertivorous (species which consume invertebrates such as insects, spiders and worms) mammals, which are non-conservation significant species.

Aquatic environments

RAAF Lake supports a number of ecological receptors, however, this is dependent on water being present within the lake (i.e. the lake is not a permanent water source). When water is present, potentially elevated risks were identified for amphibians and a range of invertebrate species. In addition to this, potentially elevated risks were identified for some birds which can be exposed to PFAS through sediment intake.

Port Phillip Bay is a permanent water source and supports a number of local and migratory species. Potential risks to aquatic species including flora and fish are considered low and acceptable. A potentially elevated risk was identified for some piscivorous avian species (i.e. a bird species that primarily eats fish) via dietary exposure to PFAS-impacted fish.

Next steps

PFAS Management Area Plan

The findings of this Detailed Ecological Risk Assessment, along with other investigation work completed at the base will be incorporated into the PFAS Management Area Plan (PMAP). The PMAP for RAAF Williams, which combines both the base at Laverton and Point Cook, was first published in August 2022 and updated in April 2025. The PMAP details activities Defence will undertake to manage the movement of and possible risk of exposure to PFAS from RAAF Base Point Cook.

Ongoing Monitoring Plan

Defence undertakes regular monitoring of surface water and groundwater on and surrounding the base as part of the Ongoing Monitoring Plan (OMP). This monitoring is intended to provide information on changes in the location and concentrations of PFAS originating from the base. This establishes an evidence base for targeted and effective risk management of PFAS contamination to protect human and environmental receptors. The next OMP monitoring round for RAAF Base Point Cook will be during early 2027.

Keeping the Community Informed

Defence is committed to regularly updating the community about ongoing monitoring. Updates will be provided through the project website as new information becomes available.

Contact Us

Phone: 1800 333 362

Email: pfas.enquiry@defence.gov.au

Scan the QR code to find out more about Defence's PFAS Investigation and Management Program.

All website links and contact details in this factsheet were correct at the time of publication but may change over time. For the most up-to-date information, please refer to www.defence.gov.au/pfas