



HMAS Albatross Environmental Investigation- Preliminary Site Investigation – key findings and next steps

Background to the investigation

The Department of Defence (Defence) has engaged an independent environmental consultant to undertake an environmental investigation into the presence of per- and poly-fluoroalkyl substances (PFAS) on, and in the vicinity of, HMAS Albatross (the base).

The investigation is part of Defence's review of a number of its sites around Australia that used legacy fire-fighting foams containing PFAS.

PFAS are a class of manufactured chemicals that were generally present in aqueous film forming foam (AFFF) used extensively worldwide from about the 1970s by both military and civilian authorities due to its effectiveness in extinguishing liquid fuel fires. From 2004, Defence commenced phasing out its use of legacy AFFF across the Defence Estate. The AFFF now used by Defence is a more environmentally safe product.

The PFAS of interest to the investigation include perfluorooctane sulfonate (PFOS), perfluorohexane sulfonate (PFHxS) and perfluorooctanoic acid (PFOA).

The environmental investigation is being undertaken in accordance with the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPM).

The NEPM process includes:

- Preliminary site investigation (PSI);
- Detailed site investigation (DSI) including a human health and ecological risk assessment (HHERA)

Objective of the investigation

The objective for the environmental investigation is to identify the nature and extent of PFAS in the environment and any risks to human health or the ecology. The understanding of these risks will assist in developing any mitigation strategies to minimise exposure.

Preliminary site investigation

The preliminary site investigation (PSI) commenced in May 2016 and was completed in August 2016.

Some of the objectives of the PSI included:

- Understanding site characteristics;
- Identifying possible PFAS **sources** both on and off base based on historical AFFF storage, use and disposal; and
- Understanding possible migration **pathways** of PFAS to on or off-base **receptors**.

These activities assist our understanding of potential impacts to people and the environment in the Nowra area, from the use of legacy AFFF fire-fighting foams.

This also informs the priorities for the next stage of the investigation.

Sources: Where and when legacy AFFF was used

Pathways: How PFAS moves in the environment and the possible exposure to people and the environment

Receptors: People and the environment that may possibly be exposed to PFAS



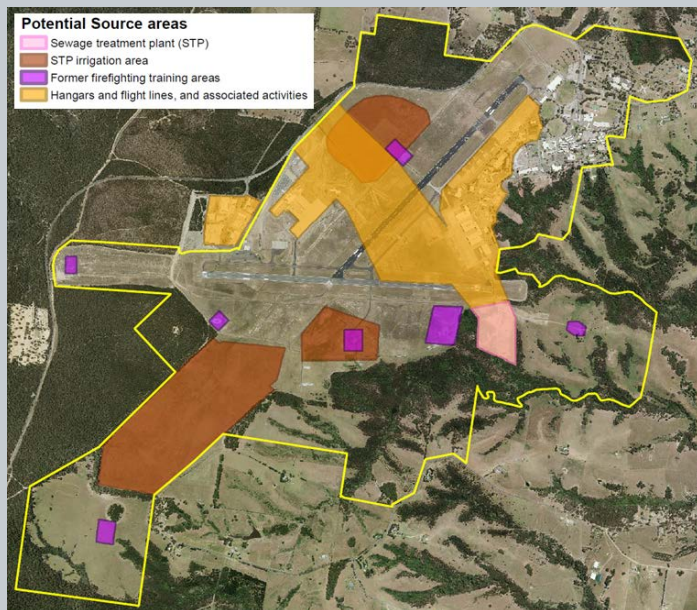


Sources

Based on a review of previous environmental assessments and the site history, four key areas have been identified as the primary potential source of PFAS resulting from the historical on-site storage, use and disposal of AFFFs.

The four key potential source areas identified on site are:

- Sewage treatment plant (STP)
- STP irrigation areas
- Former firefighting training areas
- Hangars and flight lines



Map of potential source areas identified at HMAS Albatross

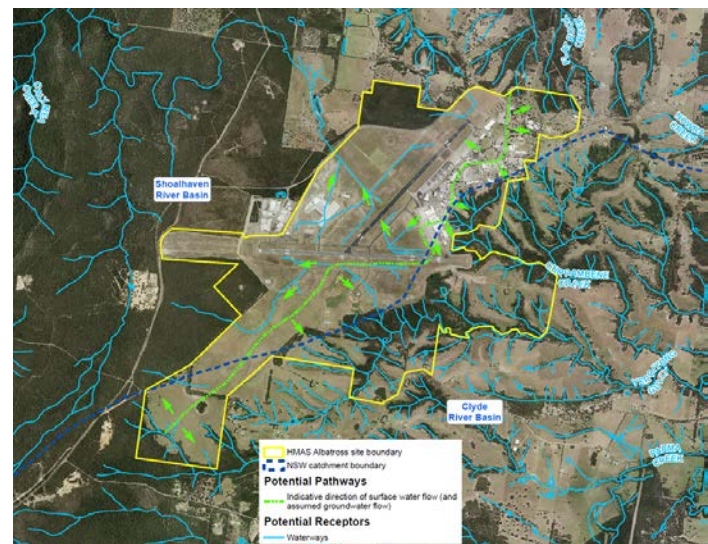
Pathways

Primary migration pathways of PFAS are surface water and groundwater. Based on the primary investigations of HMAS Albatross and the surroundings there are two river/ drainage catchments that may act as a pathway:

- Shoalhaven River Basin to the north-west including Calymea Creek and Flatrock Creek
- Clyde River Basin to the south-east, including Currambene Creek and Yerriyong Gully

There are also three groundwater bodies:

- Perched unconfined <5m, 10-20m shallow (shale), deeper 40-50m (sandstone)
- Perched and shallow groundwater is likely to intersect with surface water as springs



HMAS Albatross sources, pathways and receptors





Receptors

The main potential exposure pathway to people in general, is through consuming water. A water use survey was completed by 25 local residents, showing:

- Water for human consumption and domestic use came from the town water supply and tank (rain water)
- There are no groundwater bores on properties
- Stock water is sourced from dams and creeks
- There is limited irrigation from dams for pasture and fruit and vegetables

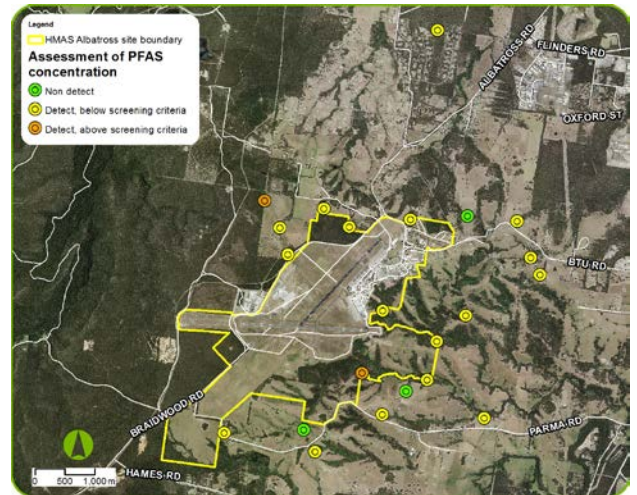
Preliminary site investigation - Key findings Sampling Results

Preliminary off-base sampling was undertaken as an initial assessment of potential PFAS that may be present in water. This included:

- Initial water sampling and comparison against adopted screening criteria
- Screening criteria adopted was the Defence Contamination Directive #8 Recreational Water Use interim screening criteria
- Information to date shows local residents are not drinking water from either dams, creeks or groundwater bores.

22 samples were taken from dams and waterways between June and July 2016. The off-base sampling results were as follows:

- Three (3) non detects (below the laboratory 'limit of reporting')
- Seventeen (17) detects of PFAS (less than screening criteria)
- Two (2) detects of PFAS in drainage lines, above screening criteria



Map of off-base water sample results

Next steps

Detailed site investigation

The detailed site investigation commenced in September 2016, and includes on and off-base sampling to further assess the nature and extent of PFAS on, and in the vicinity of the base. This will include:

- Soil samples on and off-base;
- Surface water and sediment testing on-base within drainage channels;
- Surface water and sediment testing off-base within drainage channels and waterways; and
- Installing additional groundwater monitoring bores on and off-base.

A detailed report will be prepared and shared with relevant government and regulatory bodies as well as the community. This will also be made available to the public.





Human health and ecological risk assessment

A more detailed assessment to better understand the risk to people and the environment will be undertaken.

- It will be undertaken in parallel with the DSI
- Informed by the results of the DSI, as the DSI is being undertaken
- The risk assessment is a detailed, scientific process that may involve further sampling
- The results of the risk assessment assist with planning for managing risks to human health and the environment.

Health

Due to their widespread use, most people living in developed nations will have some level of PFAS in their body.

Because these chemicals persist in humans and the environment, enHealth recommends that human exposure to these chemicals is minimised as a precaution.

For more information relating to PFAS and health guidance please refer to the enHealth Guidance Statements that may be found on the Commonwealth Department of Health's website www.health.gov.au, or the PFOS and PFOA environmental health fact sheet that may be found on the NSW Department of Health's website

www.health.nsw.gov.au/environment/factsheets.

Government guidelines

Defence investigations are informed by national guidelines.

enHealth have issued interim guidelines for the assessment and management of PFAS.

The interim values set by enHealth will remain in place until Food Standards Australia New Zealand completes an assessment and provides its advice on final human health reference values to the Commonwealth Department of Health.

Keeping the community informed

Defence is committed to regularly updating the community throughout the investigation. Updates will be provided through the project website, community information sessions, direct mail and information sheets as new information becomes available.

Contact the Project Team



Project 1800 856 491



www.defence.gov.au/id/albatross



HMAS.Albatross@arecongroup.com



HMAS Albatross Environmental
Investigations Project
C/O Aurecon
PO Box 538
Neutral Bay, Sydney NSW 2089

Media enquiries should be directed to Defence Media Operations on (02) 6127 1999 or media@defence.gov.au

