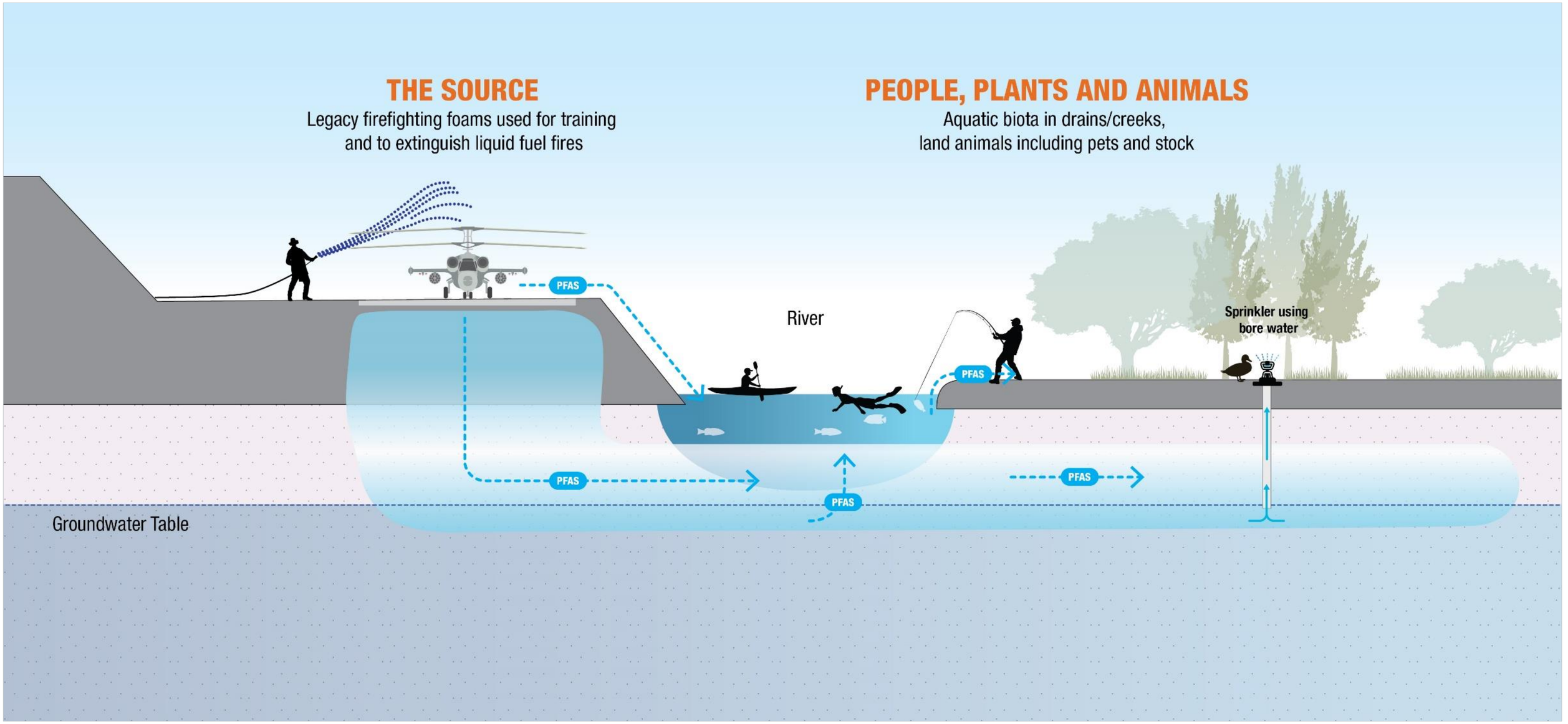
How PFAS moves in the environment



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PFAS INVESTIGATION AND MANAGEMENT PROGRAM

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Program timeline

2018 – 2020
Detailed site investigation, human health, and ecological risk assessment undertaken

September 2020
PFAS Management Area Plan published

From Sept 2020
Sewerage treatment plant, and stormwater and wastewater infrastructure upgrades

2020 - ongoing
Investigations to prepare remediation action plans for source areas

October 2023
PFAS movement assessment completed

From August 2024
WE ARE HERE

Update PFAS Management Area Plan. Continue ongoing monitoring and reporting, on base remediation work

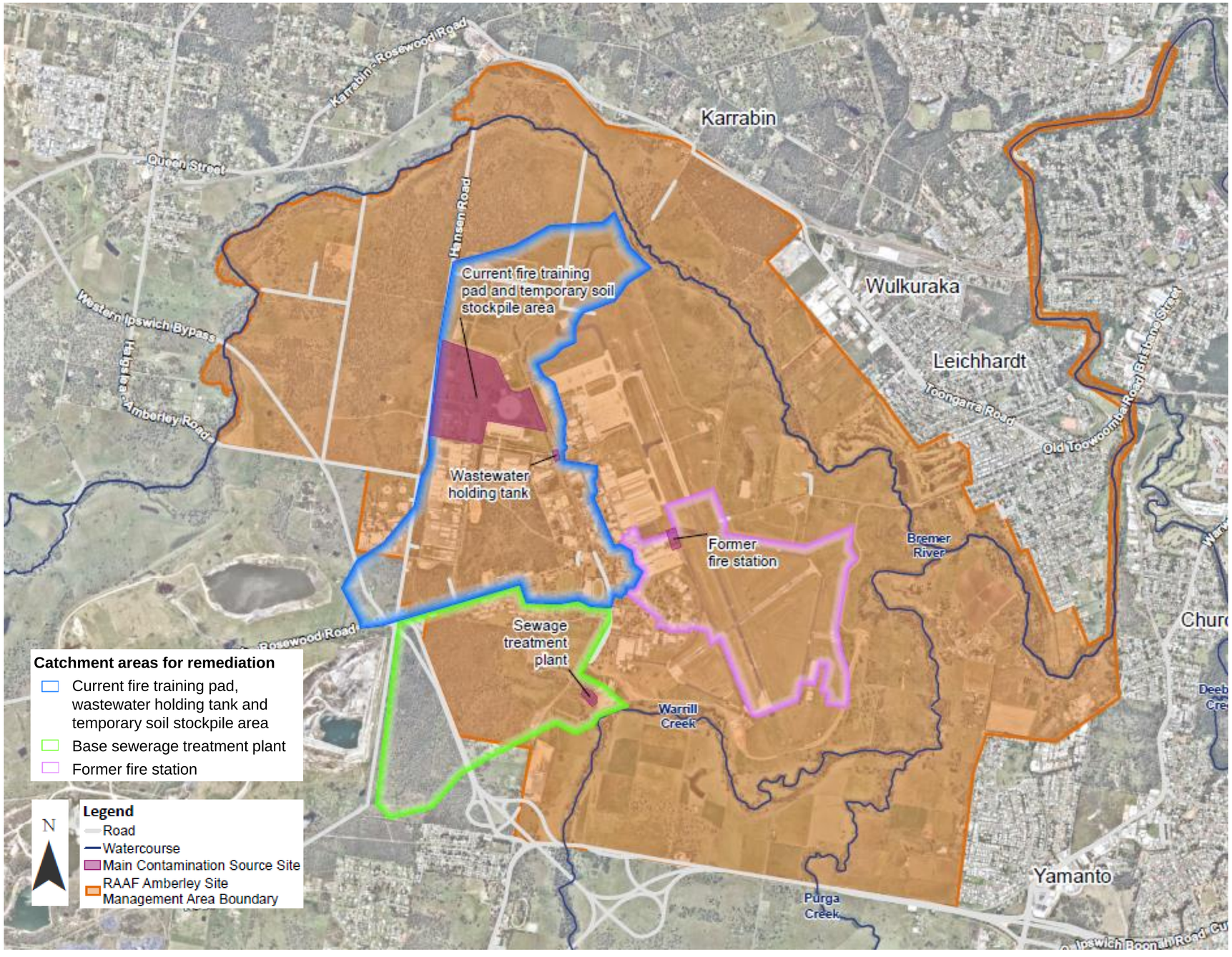
January 2025
Upgrade monitoring wells

March 2025
Remediation action plans finalised

2025 onwards
Commence remediation of key source areas

Ongoing
Ongoing monitoring and reporting

Management area and source areas



Source areas

- PFAS source areas at RAAF Base Amberley are found where firefighting foam was previously, used, stored or disposed of.
- Five key source areas include:
  - current fire training pad
  - wastewater holding tank (fire training area)
  - temporary soil stockpile area
  - base sewerage treatment plant
  - former fire station.
- Remediation will focus on managing surface water catchments to reduce PFAS leaving the base.
- Three remediation action plans will be developed for the three catchment areas shown on the map ahead of further works commencing.

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Remediation at RAAF Base Amberley – a multi phased approach

Remediation of source areas aims to reduce PFAS leaving the base.

Defence is developing remediation action plans for three major surface water catchment areas.

Remedial works will be completed progressively through to 2028.

Ongoing monitoring will continue throughout, and beyond the remediation period.

Defence will continue to keep the community informed and publish monitoring data.

Remediation and PFAS management activities

- Defence is remediating and managing PFAS contamination at RAAF Base Amberley.
- Ongoing remediation will focus on managing stormwater as most PFAS leaves the Base via surface water.
- Defence has commissioned two wastewater treatment plants to treat the water from the current fire training pads reducing the amount of PFAS leaving the base.
- Works to reduce PFAS in sewage wastewater discharge commenced in 2022 with the commencement of construction of the new sewerage treatment plant.

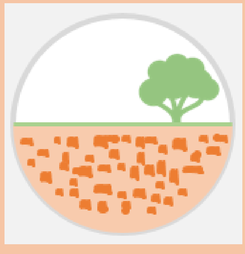
Management zone	Remediation action
Stormwater and wastewater infrastructure	Ongoing infrastructure upgrades From Sep 2020 until 2027
Ongoing monitoring well upgrades	Restoration, maintenance and additional wells installed within the PFAS monitoring area
New onsite sewerage treatment plant (STP)	Design and construction of new sewerage treatment plant capable of treating PFAS contaminated wastewater Commissioning early 2025 – site remediation work to commence mid-2025

PFAS source area*	Management and remediation action/s
Current fire training pad	• Ongoing monitoring • Develop and implement a remediation action plan • Remediation work will commence mid-2025
Temporary soil stockpile area	• Ongoing monitoring • Develop and implement a remediation action plan • Remediation work will commence mid-2025
Wastewater holding tank	• Ongoing monitoring • Develop and implement a remediation action plan • Remediation work will commence mid-2025
Base sewage treatment plant (existing)	• Ongoing monitoring • Develop and implement a remediation action plan • Remediation work will commence in 2025
Former fire station	• Ongoing monitoring • Develop and implement a remediation action plan • Remediation work will commence mid-2025

* Five main source areas will be incorporated into three Remediation Action Plans.

Ongoing monitoring results

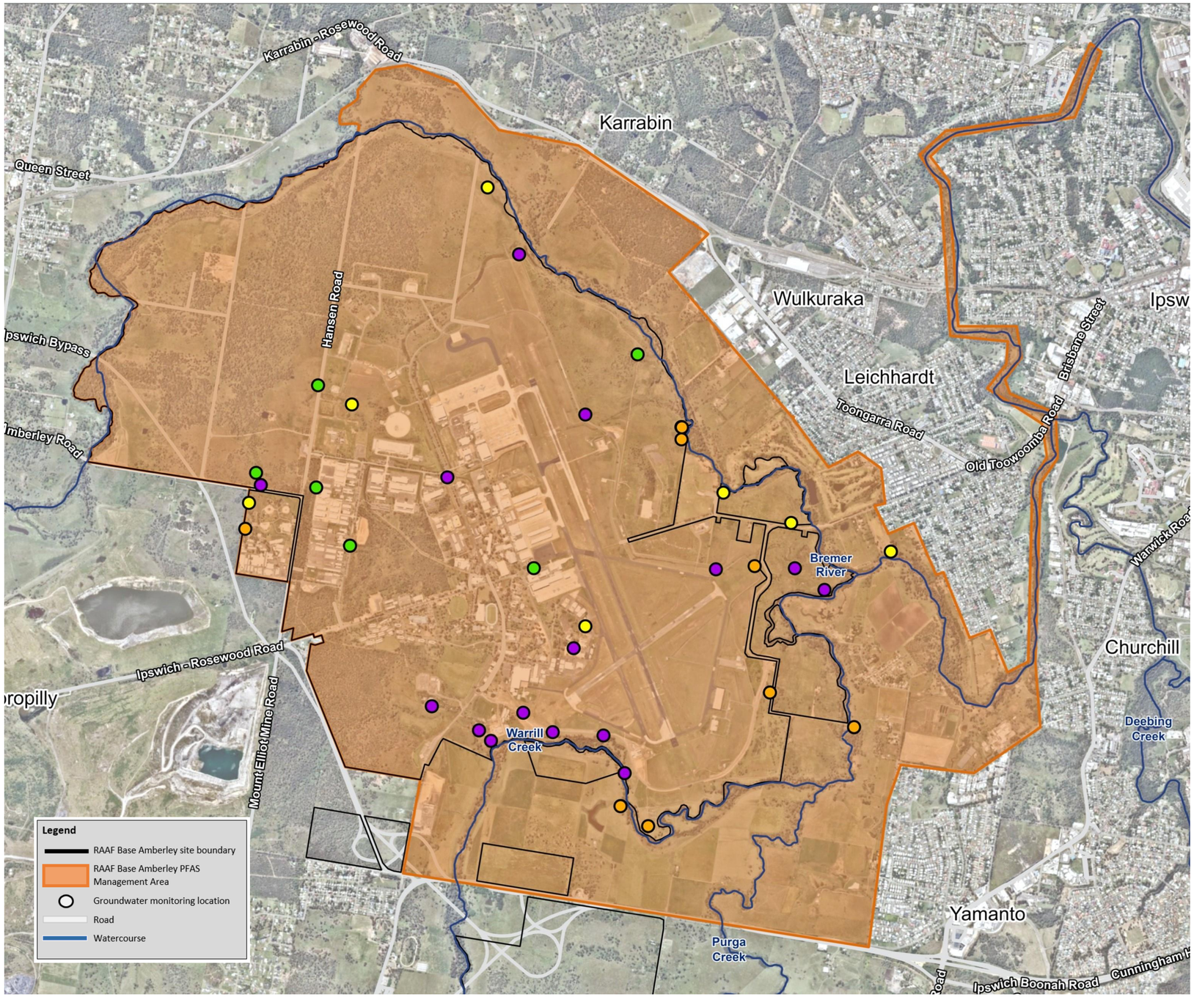
Number of samples collected and analysed
(March 2021 – April 2024)

GROUNDWATER 	Groundwater is water beneath the earth's surface. It often supplies bores, wells or springs.	271 samples collected from 40 groundwater monitoring locations with samples collected biannually in April and October.
SURFACE WATER 	Surface water is water that collects on the ground and can be in the form of creeks, rivers, lakes, wetlands, oceans and more. It also accumulates from rainfall.	327 samples collected from 49 surface water locations with samples collected biannually in April and October.
SEDIMENT 	Sediment is made of broken down remains of rocks, minerals, plants, and animals that is moved and deposited to a new location.	338 samples collected from 49 sediment locations with samples collected biannually in April and October.

Recent key findings

- The findings from the most recent ongoing monitoring report do not suggest a change in any potential exposure risks for the community or the environment (including plants and animals).
- The highest levels of PFAS contamination were at known, on-base source areas.
- Slight increases were recorded in several groundwater locations along the base boundary to the west and south-east. Defence will continue to monitor these locations to identify if any action needs to be taken.
- Community members are encouraged to continue following Queensland Health's precautionary advice for fish consumption.
- The 2021-2023 ongoing monitoring report and factsheet is available on the Defence website. Scan the QR code below for more information:

Groundwater sampling results



Groundwater is water beneath the earth's surface. It often supplies bores, wells or springs.

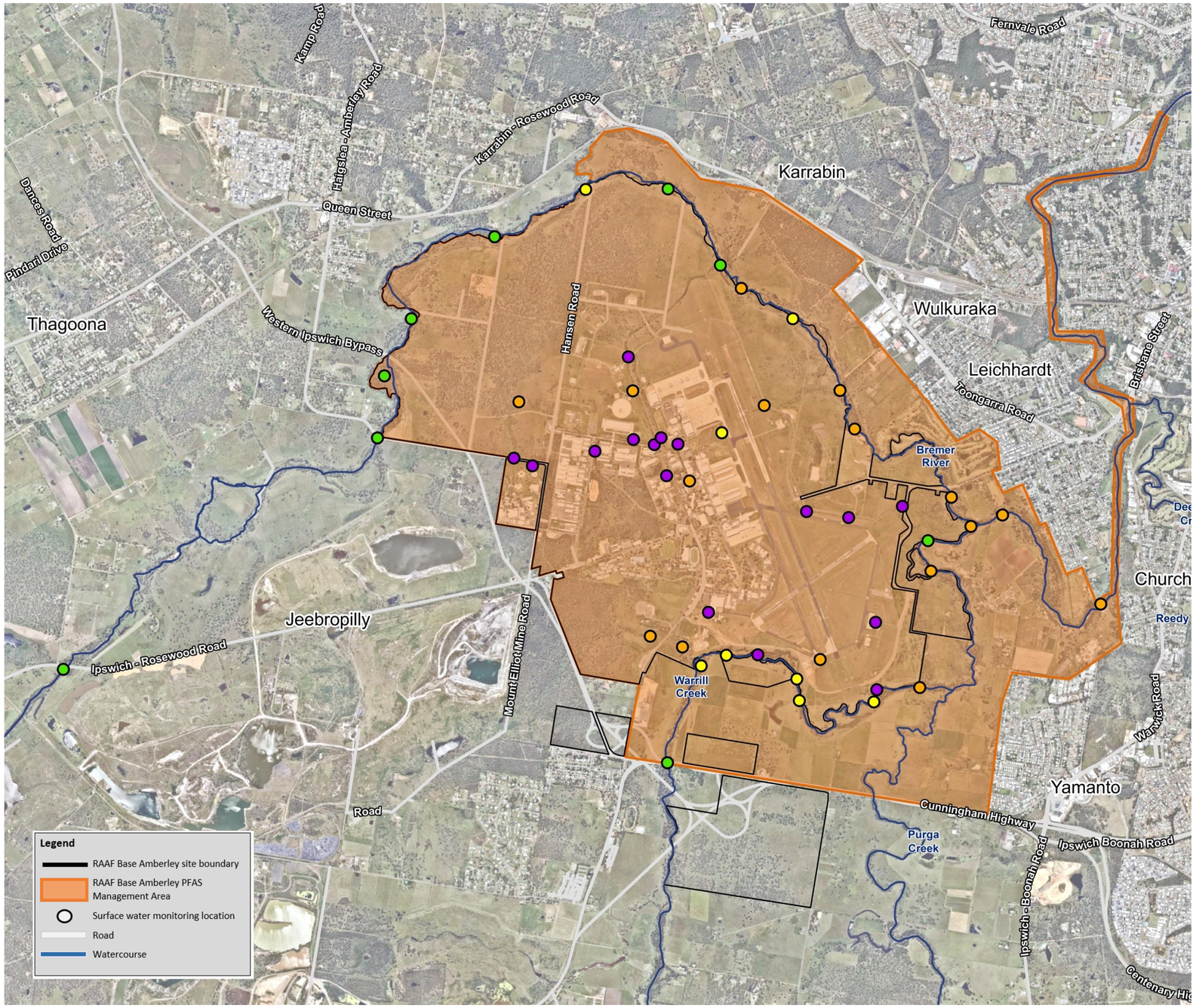
Recent key findings

- Highest concentrations of PFAS were at known, on-base source areas.
- The findings do not suggest a change in any potential exposure risks for the community. Defence will continue to monitor these locations to identify if any action needs to be taken.

This maps show results of groundwater samples collected from 2021-23.

- **Green** represents results where PFAS was not detected.
- **Yellow** is below drinking water guidelines.
- **Orange** is below recreational water guidelines.
- **Purple** exceed both drinking water and recreational guidelines.

Surface water sampling results



Surface water is water that collects on the ground and can be creeks, rivers, lakes, wetlands, oceans and more. It also accumulates following rainfall.

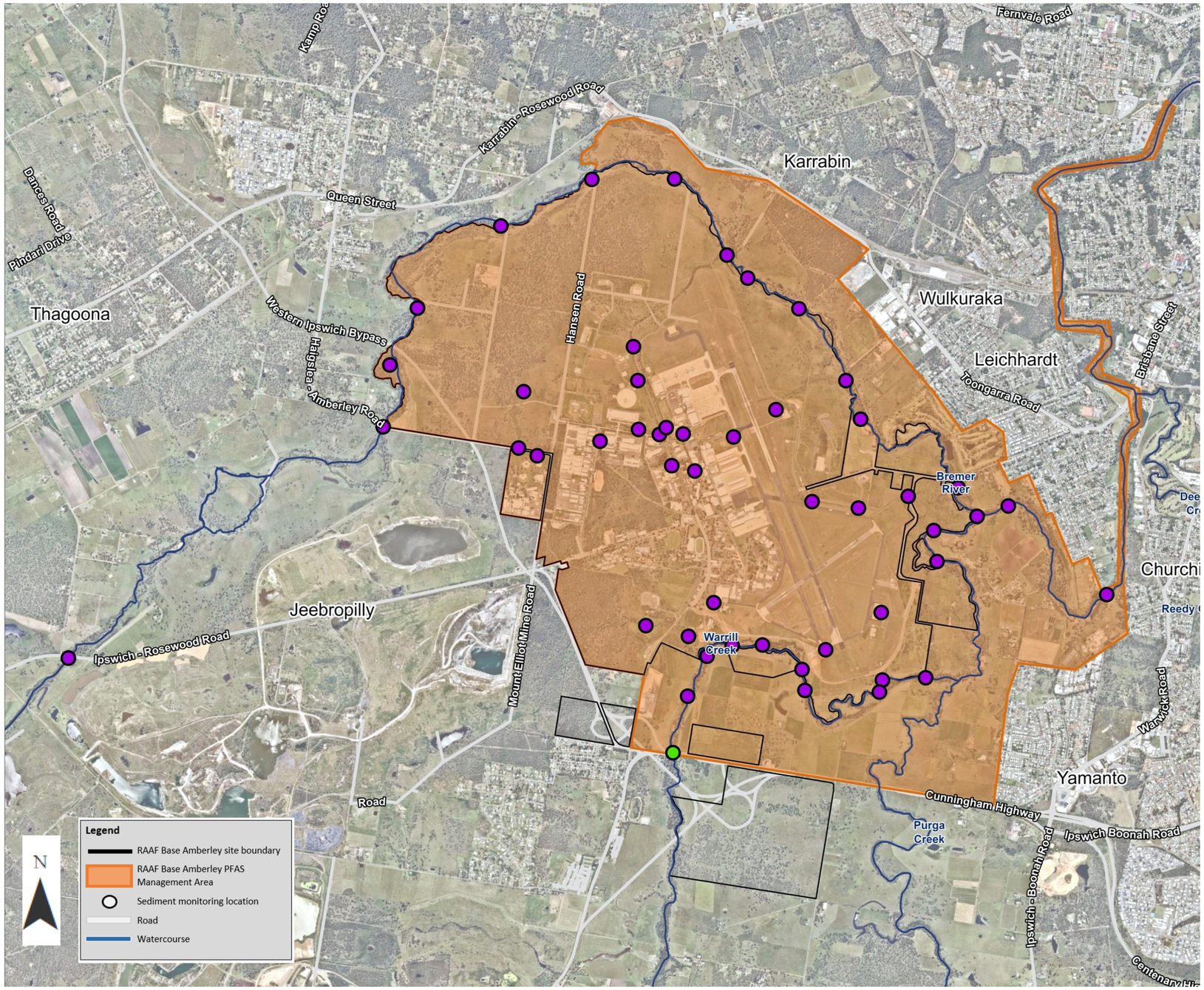
Recent key findings

- Highest concentrations of PFAS were at known, on-base source areas.
- The findings do not suggest a change in any potential exposure risks for the community.

This maps show results of groundwater samples collected from 2021-23.

- **Green** represents results where PFAS was not detected.
- **Yellow** is below drinking water guidelines.
- **Orange** is below recreational water guidelines.
- **Purple** exceed both drinking water and recreational guidelines.

Sediment sampling results



Sediment refers to samples taken from the soil.

Although there is no Commonwealth health criteria related to PFAS in sediment, ongoing monitoring informs Defence's remediation planning, and over time, assists to monitor remediation effectiveness.

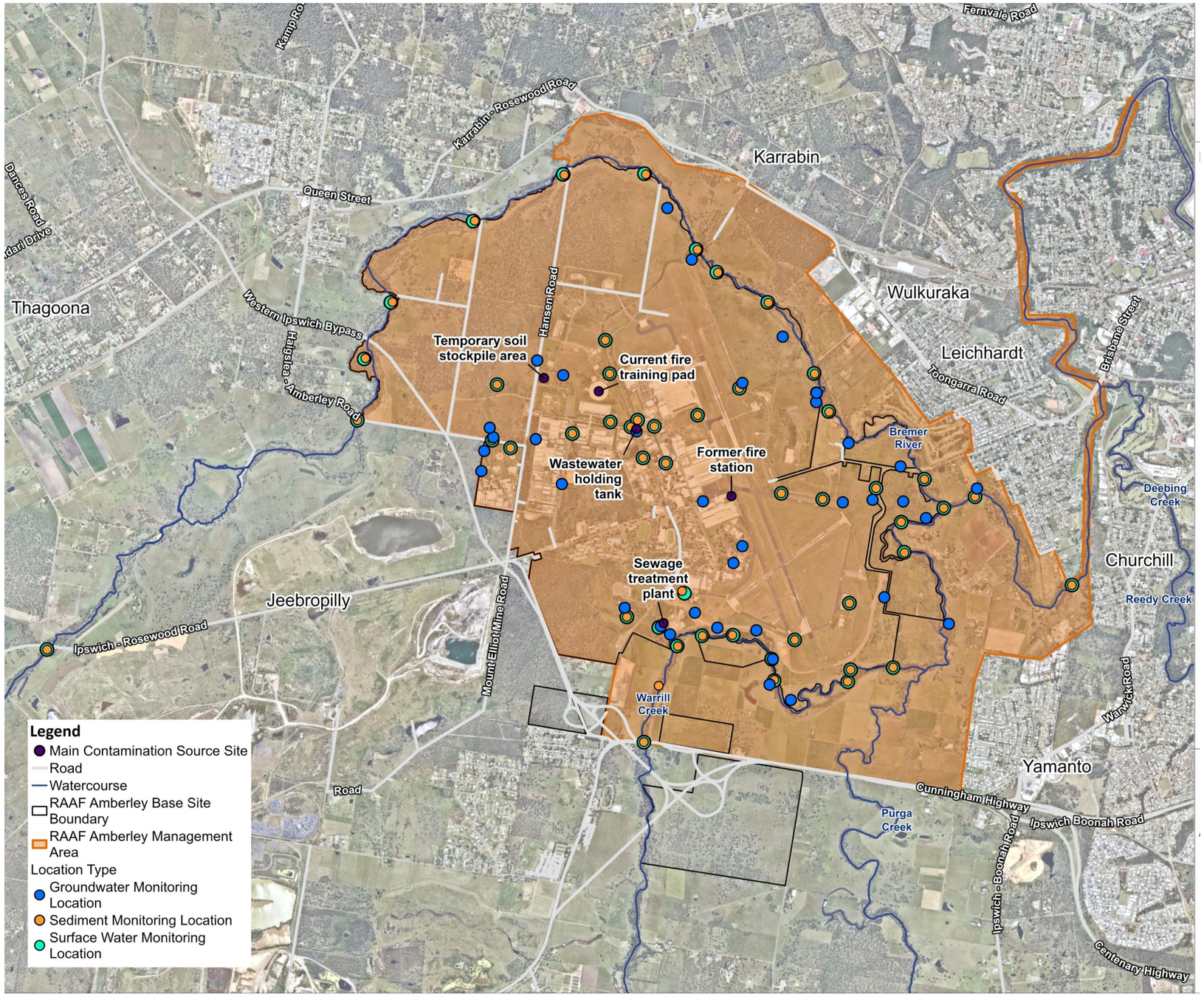
Recent key findings

- Highest concentrations of PFAS were at known, on-base source areas.
- The concentrations in some on-base sediment is expected to reduce following planned remediation works.
- The concentrations in off-base sediment (Bremer River, Warrill Creek) may reduce in the long term.
- The findings do not suggest a change in any potential exposure risks for the community.

This maps show results of sediment samples collected from 2021-23.

- **Green** represents results where PFAS was not detected.
- **Purple** represents results where PFAS was detected.

Ongoing monitoring well upgrades



- The ongoing monitoring plan is an important part of the RAAF Base Amberley PFAS management plan and includes periodic sampling of groundwater, surface water and sediment.
- An upgrade and expansion of the existing monitoring wells is being undertaken ahead of further planned remediation works.
- This will involve maintenance of existing wells, the installation of new wells, and the removal of groundwater monitoring wells in some locations.
- These works will help Defence, regulators, and the community understand if actions to reduce PFAS have been effective. It also helps to identify where more investigation or remediation works may need to be undertaken.
- Any revised monitoring locations will be recorded in the ongoing monitoring plan.
- Defence will continue monitoring groundwater, surface water and sediment, with the next round of sampling scheduled to occur in October 2024.
- If future monitoring results indicate changes to Defence's understanding of PFAS on and around the base, Defence will respond and take appropriate action.

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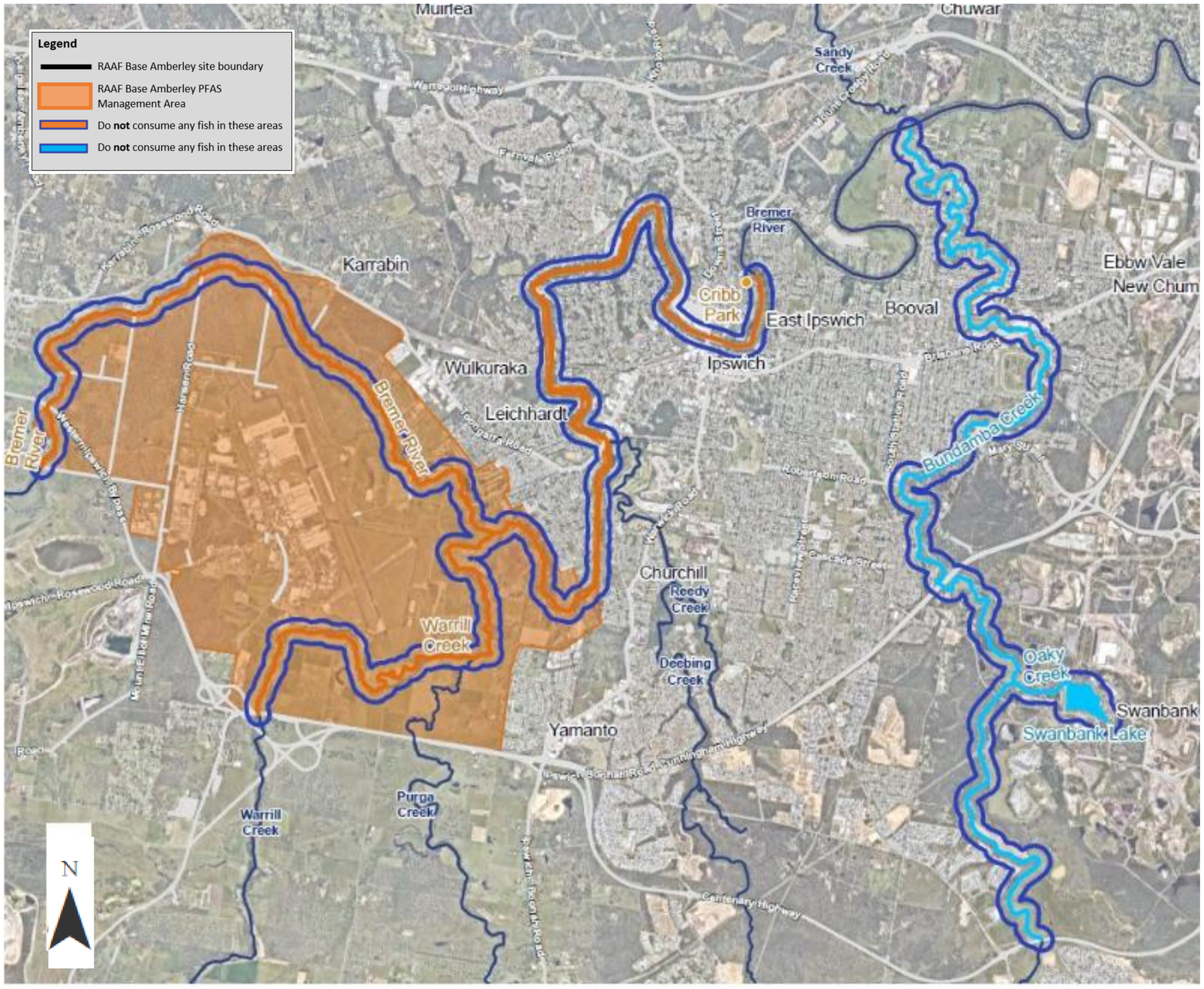
Precautionary advice for fish consumption



QLD Health advice

Precautionary health advice remains in place. Queensland Health has advised that **all** fish caught in the below areas should **not** be consumed.

- Bremer River in areas adjacent to RAAF Base Amberley and downstream to Cribb Park, Ipswich
- Warrill Creek adjacent to RAAF Base Amberley

The below areas (shown in **blue** on the map) contain PFAS from other sources, not RAAF Base Amberley:

- Swanbank Lake and Oaky Creek
- Bundamba Creek downstream of the Centenary Highway.

In all of the above areas, fishing should be undertaken on a catch-and-release basis only.

Scan the QR code
for more information: