

PFAS Investigations

Precautionary Dietary Advice - Botany Bay and Georges River Information for recreational fishers

The NSW Government has released precautionary dietary advice for eight finfish species caught in Botany Bay and the Georges River, after testing found per- and polyfluoroalkyl substances (PFAS) in these species. This advice will help recreational fishers who regularly catch and eat fish in Botany Bay and the Georges River to limit their personal intake of fish species in which PFAS have been found.

What are PFAS?

PFAS (per- and poly-fluoroalkyl substances) are a group of manufactured chemicals that includes perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA) and perfluorohexane sulfonate (PFHxS).

Due to their fire retardant, waterproofing and stain resistant qualities, these chemicals have been widely used in many industrial and consumer products worldwide. PFAS can be found in food packaging, non-stick cookware, fabric, furniture and carpet stain protection applications, clothing, and some types of fire-fighting foam.

PFAS are very stable chemicals that bioaccumulate, do not easily break down, and can persist for a long time in the environment. They are being phased out around the world.

Are PFAS a health risk?

PFAS are an emerging contaminant, with international research yet to fully determine any health effects related to exposure.

The Commonwealth Department of Health advises there is currently no consistent evidence that exposure to PFAS causes adverse human health effects. However, based on the evidence from animal studies, potential adverse health effects cannot be excluded.

Much of the existing research on humans has been undertaken with people who were exposed to high levels of PFAS through their work. These studies looked for effects on cholesterol levels, male hormones, heart disease, liver changes and other effects, including cancer. These studies

have not consistently shown that PFAS exposure is linked to health problems.

A factsheet providing more information on PFAS and human health is available from the Commonwealth Department of Health website at www.health.gov.au.

Why are we testing Botany Bay and the Georges River?

Testing in Botany Bay and the Georges River is part of a state-wide investigation program led by the NSW EPA.

What were the findings?

PFAS compounds were detected in multiple species at varying concentrations.

The NSW Government has prepared precautionary dietary advice for recreational fishers who regularly catch and eat certain species from these areas.

Other species that were tested, but do not require dietary advice, are Squid, Blue Swimmer Crab, Blue Groper, Red Morwong, Sand Whiting, Yellowfin Leatherjacket, Yellowfin Bream, Pacific Oysters and Sydney Rock Oysters. Farmed oysters are also safe to eat.

Can I still eat fish from the area?

Yes. You can continue to eat fish from the area, however, the NSW Government has developed recommended dietary guidelines to make sure that regular consumers can minimise their exposure to PFAS. Please see the recommended dietary advice below.

What is the precautionary advice?

These tables list the number of serves of a single species that can be eaten each week to limit PFAS exposure to half of the health-based guideline value.

It is important to note that species-specific information is for when a single species of fish is eaten per week. Eating multiple species would result in a greater exposure.

The waters remain open to fishing and fishers can still take fish within bag and size limits – noting the dietary advice provided – or they can instead catch and release.

Note that existing advisories and restrictions are in place for other areas of Georges River and Botany Bay, and can be found at www.dpi.nsw.gov.au/fishing/closures/location-closures/botany-bay-and-georges-river.

The following advice in Table 1 relates specifically to PFAS detections in species caught by recreational fishers in the **Georges River between Rabaul Road Boat Ramp and the Princes Highway (Tom Ugly's) Bridge**.

Table 1 Maximum recommended weekly intake for species caught in the Georges River between Rabaul Road Boat Ramp and the Princes Highway (Tom Ugly's) Bridge by recreational fishers for PFAS exposure

Species	Servings per week* Children – 2 to 6 years old	Servings per week* All other age groups
Dusky Flathead	1	2
Sea Mullet	2	4
Mulloway	1	1
Luderick	4	#
Silver Trevally	1	3
Estuary Perch	1	2

*Adult Serving size = 150 grams; Children Serving Size = 75 grams.

Concentrations of PFOS, PFOA and PFHxS were below the adopted trigger values in the samples analysed. No dietary advice is required based on the reported PFOS, PFOA and PFHxS concentrations

Note:

- Consumption of offal in all species listed should be avoided.
- This advice is if one single species is eaten. Eating multiple species would result in a greater exposure. For example:
 - for a child eating fish caught in the Georges River between Rabaul Road Boat Ramp and the Princes Highway - 1 serve of either Dusky Flathead, Mulloway, Silver Trevally or Estuary Perch and 1 serve of any other species listed in the table in one week would exceed the recommended PFAS intake.
 - for an adult, eating 2 serves of Sea Mullet and 1 serve of Silver Trevally in one week would not exceed the recommended PFAS intake via fish sources.
- Sand Whiting and Yellowfin Bream were also sampled and tested from this region, but no dietary advice is necessary for these species. Farmed oysters are also safe to eat.
- General fish and seafood consumption advice states that people should eat 2-3 serves of fish and seafood each week as part of a balanced diet.
- Independent of the site-specific advice related to PFAS above, pregnant women and women planning pregnancy should see the following fish consumption advice published by Food Standards

Australia New Zealand (FSANZ) relating to mercury
www.foodstandards.gov.au/consumer/chemicals/mercury/Pages/default.aspx.

The following advice in Table 2 relates specifically to PFAS detections in species caught by recreational fishers in **Botany Bay, and the Georges River downstream of the Princes Highway (Tom Ugly's) Bridge**.

Table 2 Maximum recommended weekly intake for species caught in Botany Bay and the Georges River downstream of the Princes Highway (Tom Ugly's) Bridge by recreational fishers for PFAS exposure

Species	Servings per week* Children – 2 to 6 years old	Servings per week* All other age groups
Dusky Flathead	3	#
Mulloway	1	2
Luderick	6	#
Silver Trevally	3	5
<i>Arripis Trutta</i> (Australian Salmon)	Refer to specific advice below**	
Estuary Perch	2	5
Tailor	3	6

* Adult Serving size = 150 grams; Children Serving Size = 75 grams.

Concentrations of PFOS, PFOA and PFHxS were below the adopted trigger values in the samples analysed. No dietary advice is required based on the reported PFOS, PFOA and PFHxS concentrations

** *Arripis Trutta* (Australian Salmon) - Due to the elevated concentrations of PFAS compounds reported in *Arripis Trutta* caught in Botany Bay, the NSW PFAS Taskforce suggests that this species is catch and release only as a precautionary measure. However, should individuals wish to consume this species caught in Botany Bay, it is recommended that children (aged 2 to 6 years old) limit themselves to one serve per fortnight, and all other age groups limit themselves to two serves per fortnight.

Note:

- Consumption of offal in all species should be avoided.
- This advice is if one single species is eaten. Eating multiple species would result in a greater exposure. For example:
 - for a child eating fish caught in *Botany Bay, and the Georges River downstream of the Princes Highway (Tom Ugly's) Bridge* - eating 1/2 serve of Australian salmon and 1 serve of any other species listed in the table in one week would exceed the recommended PFAS intake.
 - for an adult eating fish caught in the same area, eating 1 serve of mulloway, 1 serve of silver trevally and 1 serve of estuary perch in one week would not exceed the recommended PFAS intake via fish sources.
- Blue Groper, Red Morwong, Sand Whiting, Yellowfin Leatherjacket, Yellowfin Bream, Blue Swimmer Crab, Sydney Rock Oyster, Pacific Oyster, and Squid were also sampled and tested from this region, but no dietary advice is necessary for these species. Farmed oysters are also safe to eat.
- General fish and seafood consumption advice states that people should eat 2-3 serves of fish and seafood each week as part of a balanced diet.
- Independent of the site-specific advice related to PFAS above, pregnant women and women planning pregnancy should see the following fish consumption advice published by Food Standards Australia New Zealand (FSANZ) relating to mercury
www.foodstandards.gov.au/consumer/chemicals/mercury/Pages/default.aspx.

Where can I find more information?

More information on PFAS is available at
www.epa.nsw.gov.au/MediaInformation/pfas/investigation.htm.

If you have any questions or concerns, call the NSW Environment Line on **131 555**.