



Pesticide Detectives

Interpretation of results

Sampling Blitz 1 May 2019

KEY FINDINGS

- Pesticides were not detected in sediment samples at any of the 13 estuary sites; however heavy metal values exceeding the Interim Sediment Quality Guidelines (ISQG) were detected at 5 sites.

Heavy Metal results

- Only 3 metals exceeded ISQG levels:
- Arsenic: 21.6 mg/kg at Barwon River - **ISQG-low = 20 mg/kg**
- Nickel: 21.2 mg/kg at Howells Creek
32.2 mg/kg at Painkalac Creek - **ISQG (21 - 52)**
77 mg/kg at Merri River
- Zinc: 200 mg/kg at Indented Head - **ISQG-low = 200 mg/kg**



- Heavy metal concentrations at the sites were generally low. Concentrations of Arsenic in sediments in the selected estuaries were below the ISQG-low value (ANZECC and ARM CANZ, 2000) at all sites except at :

- Barwon River (21.6 mg/kg) where concentrations slightly exceeded the ISQG-low for Arsenic (20 mg/kg). Arsenic deposits to sediments may originate from natural and anthropogenic causes. Naturally occurring Arsenic could be higher in Barwon River or Arsenic-based pesticides used in agricultural areas around the waterway could contribute to higher values at Barwon River.
- Nickel concentrations exceeded the ISQG-low value of 21 mg/kg at both Howells Creek and Painkalac Creek and exceeded the ISQG-high value of 52 mg/kg at Merri River. Nickel sources could be coming from industrial discharges into the waterways.
- Zinc concentrations at Indented Head Stormwater Drain was equal to the ISQG-low value of 200 mg/kg. Industrial run-off could also be a source of increased levels of zinc at Indented Head.

PROJECT FUNDING



PROJECT PARTNERS





Pesticide Detectives

Interpretation of results

Sampling Blitz 1 – May 2020

Interpretations

Results displayed on the Pesticide Detectives map at www.pesticidedetectives.com.au/results are raw pesticide data in mg/kg for all pesticides. In this interpretation of results, for some pesticides, such as bifenthrin, an organic carbon, normalisation is undertaken to determine the bioavailable concentration of the pesticide in sediments. The normalised organic carbon values are used to assess risks posed to aquatic biota through comparisons to sediment quality guidelines.

My site has pesticides detected- what do I do now?

Please contact the Australian Pesticides and Veterinary Medicines Authority (APVMA) for

- information on the chemical of interest. APVMA: +61 2 6770 2300.

Information sheets on pesticides detected are also available on the Pesticide detectives web

- site under Pesticide Information.

A single sample gives us an idea of the occurrence of pesticides, additional samples can confirm their presence and concentrations over time and help work out the next steps.

Why didn't we get any sites with pesticides detected?

- Pesticides that we are screening for may not have been present in the sediment at the site, which is good news!
- New pesticides are being created every day - while we have screened for an extensive list of pesticides, there may not be a test available to detect a particular pesticide that is present.
- Some pesticides are more water-soluble and, if present, may not have adsorbed to sediment sufficiently for detection to occur.
- Dynamics of the waterway may mean that pesticides could have been present in sediment in different locations of the waterway but not at the specific sites that were sampled.
- Quality of sediment may affect detection of pesticides. Pesticides may not adsorb to sandy or coarse sediment compared to fine sediment.

For specific information on the pesticides detected, please go to the Pesticide Information Fact Sheets on our website.

PROJECT FUNDING

PROJECT PARTNERS

