Overview of the New Zealand Drugs in Wastewater Programme

Kāpiti Coast District Council

Institute of Environmental Science and Research (ESR)
National Drug Intelligence Bureau (NDIB)

24 June 2025

NDIB

Strategic intelligence unit (est. 1972)

Multi-agency: Customs, Police and Health

House New Zealand's drug early warning system

NEW ZEALAND CUSTOMS SERVICE
TE MANA ĀRAI O AOTEAROA

MANATŪ HAUORA
MINISTRY OF HEALTH

NEW ZEALAND POLICE
Ngā Pirihimana o Aotearoa

What we do

Monitor the New Zealand illicit drug environment

Provide strategic intelligence products to inform decision making and policy

Manage the National Drugs in Wastewater Testing Programme

Undertake international reporting and compliance with international conventions

NATIONAL DRUG INTELLIGENCE BUREAU

NEW ZEALAND NATIONAL DRUG INTELLIGENCE BUREAU

Overview of NZ drug environment

- Global manufacture and supply of illicit drugs like methamphetamine and cocaine has increased
- Organised criminal groups responsible for large scale supply to NZ
- Increasing availability online
- Numerous trafficking routes and sophisticated concealment methods
- Increase in supply of illicit drugs to NZ

Map 1. Identified trafficking routes of methamphetamine impacting the Pacific

Note: Flow arrows represent the general direction of trafficking and do not coincide with precise sources of production or manufacture, are not actual routes, and are not weighted for significance/scale. Boundaries, names and designations used do not imply official endorsement or acceptance by the United Nations.
Source: UNODC elaboration of national data and reports from origin, transit and destination countries.

Drugs in Wastewater Testing Programme 2025

Partnership between NZ Police, ESR and city councils

62 SITES ACROSS NEW ZEALAND

Floating site X: can be deployed where required

50 participating councils

6+ years of data

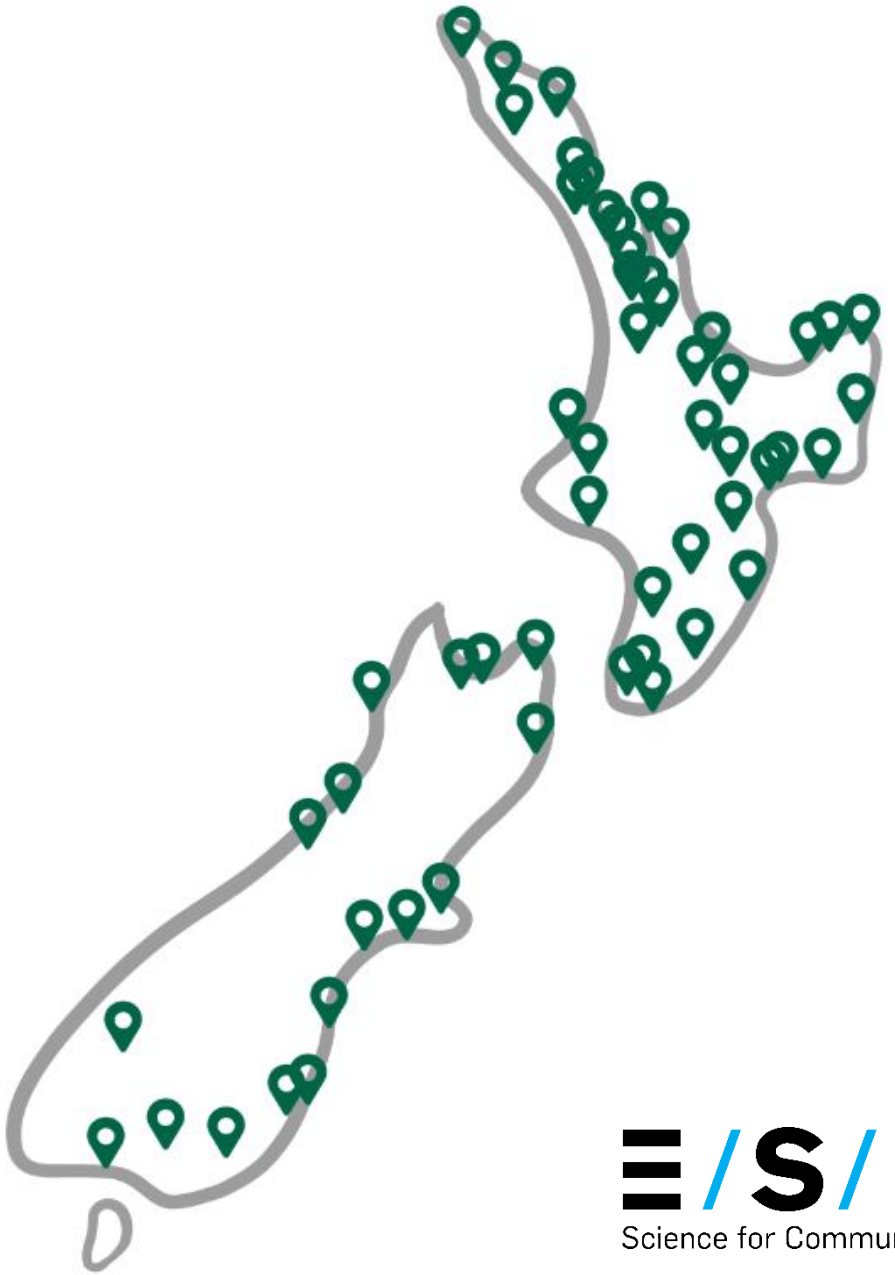
76% of population

Daily and weekly trends collected monthly

10 DRUGS TESTED MONTHLY

Methamphetamine	Ketamine
MDMA	Dimethylpentylone
Cocaine	4-MMC
Fentanyl	PMA
Heroin	Eutylone

**Cannabis tested at 5 sites*



E/S/R
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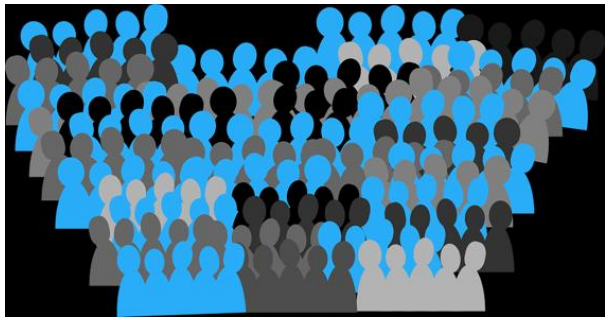
Estimation of drug consumption

- Estimation of drug usage is based on analysis of wastewater and is dependent on the interaction of a number of factors:



Sampling procedure

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- 24 hour composite samples
- 7 consecutive days
- ESR supplies pre-labelled sample bottles
- ESR supplies prepaid courier tickets
- Council/operator provides flow data via a web survey

Laboratory procedure

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- Receive samples (up to 150 per week)
- Filter samples
- Adjust pH, and extract by SPE
- Reconstitute and transfer to analysis vials
- Analyse by LC/MS

- Data analysis
- Back calculations
- Reporting

Method sensitivity

- We have an instrumentation detection limit less than 0.1 µg/L.
- During extraction in the laboratory, wastewater is concentrated 400 times.
- Therefore, we are able to detect drugs at concentrations lower than 1 ng/L in wastewater.

What next?

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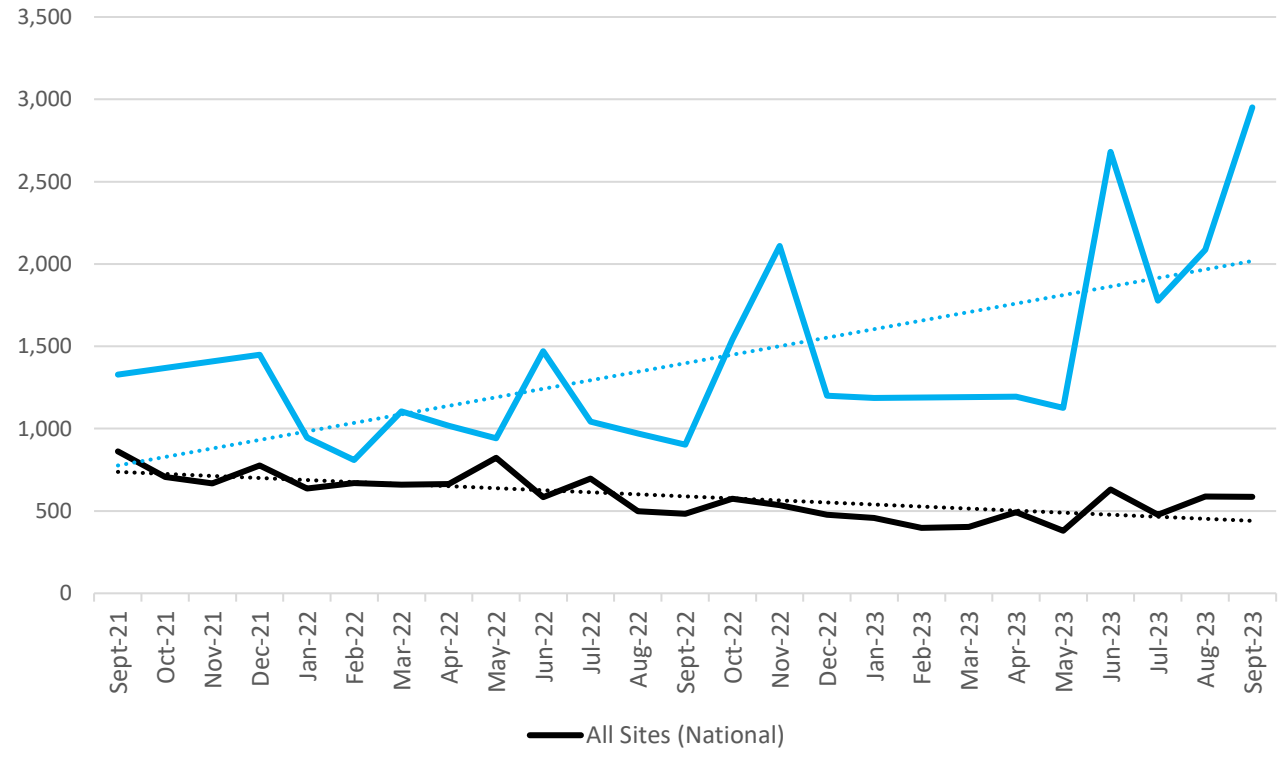
- New drugs, specifically NPS
- New ways to use the data – more publicly accessible?

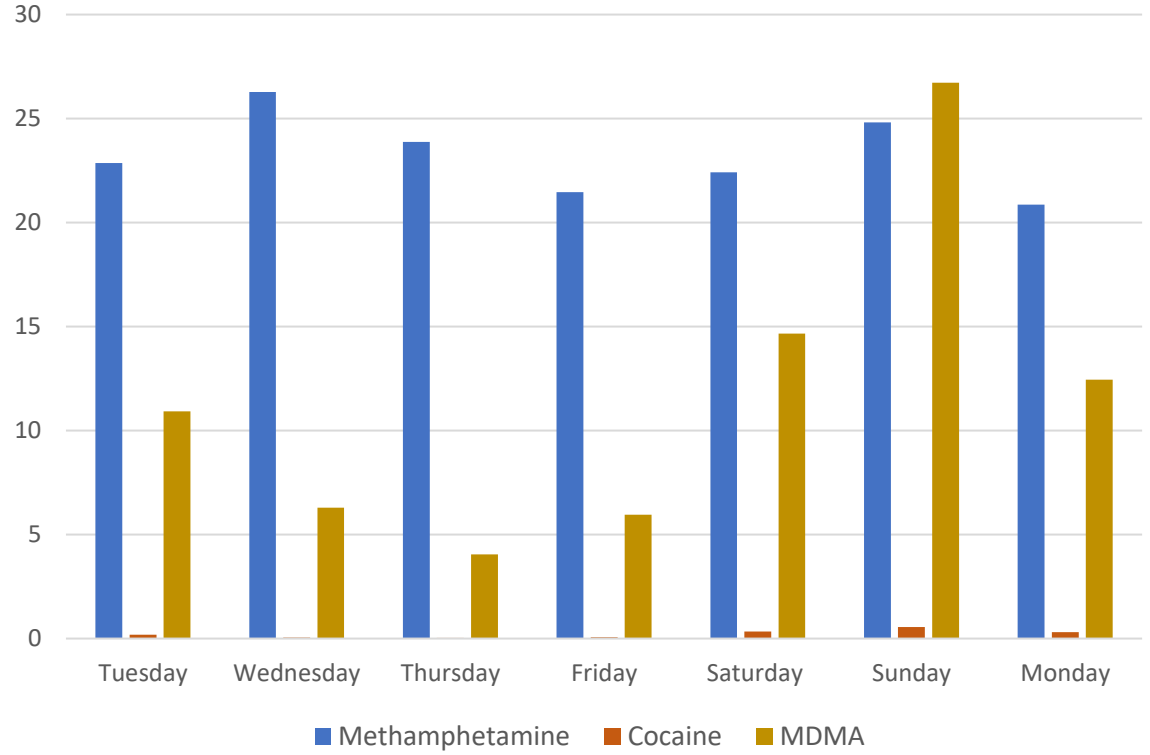
- Measures of exposure related to human health
  - Antibiotics
  - Pesticides
  - Food toxins
  - Health/cancer biomarkers

Drugs in wastewater data

Per capita methamphetamine consumption
(mg/day/1000 people)



Example Daily Data
(grams per day)



What it can’t tell us

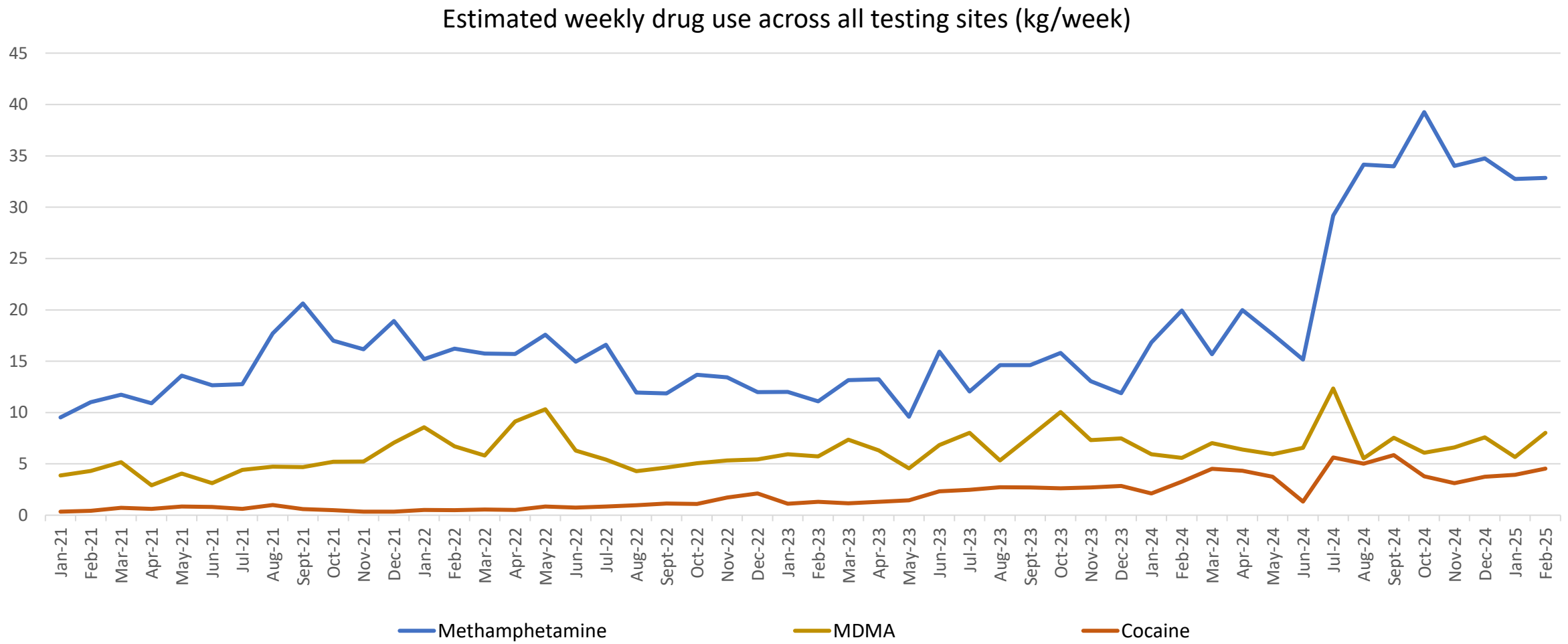
What it tells us

- Non-biased and non-invasive method for understanding the health and wellbeing of a community.
- Quantifiable information. Per capita consumption rates allow comparison across sites/locations.
- Captures data from up to 75% of the population across 46 testing sites.
- Tests for indicators of consumption of methamphetamine, MDMA, cocaine, fentanyl and heroin.

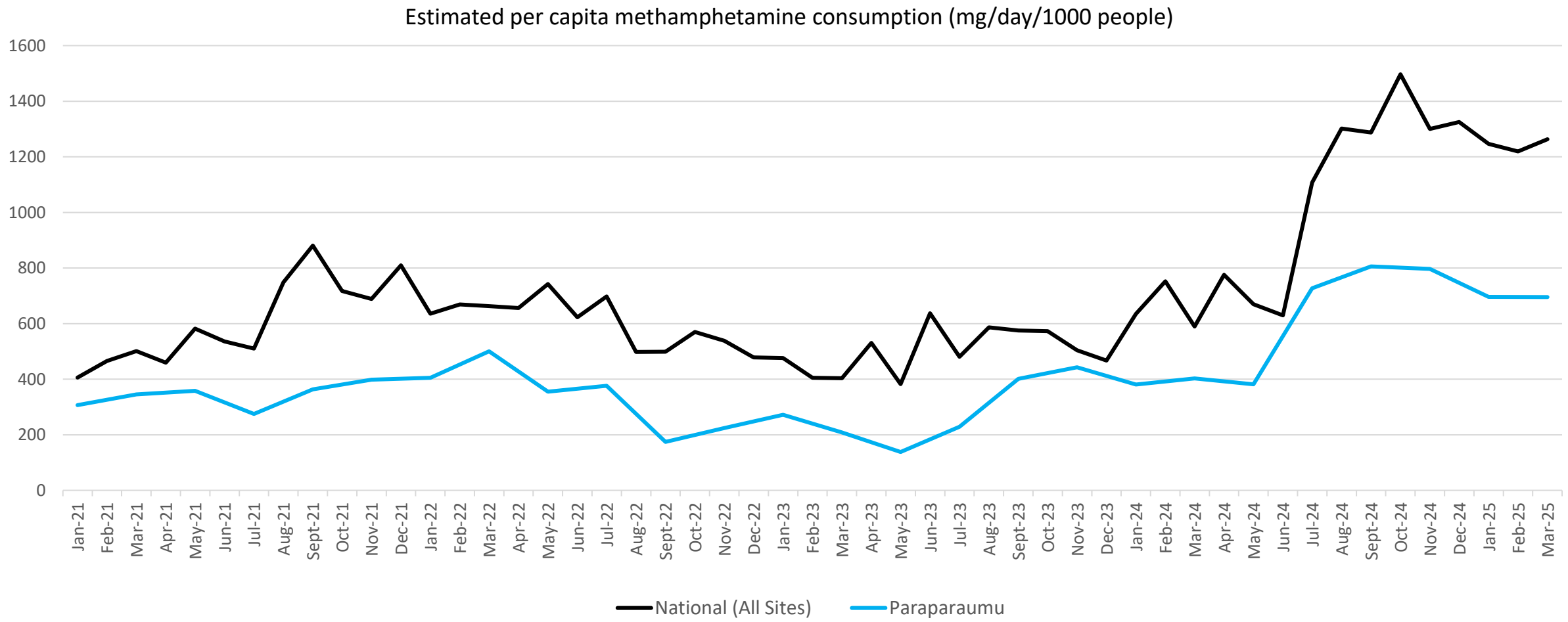
What it can’t tell us

- Who is consuming drugs.
- The number of people consuming drugs.
- Why people are consuming drugs
- If the drug use is harmful to the individual and/or community.
- Cannot be extrapolated to represent other communities nearby that weren’t tested.

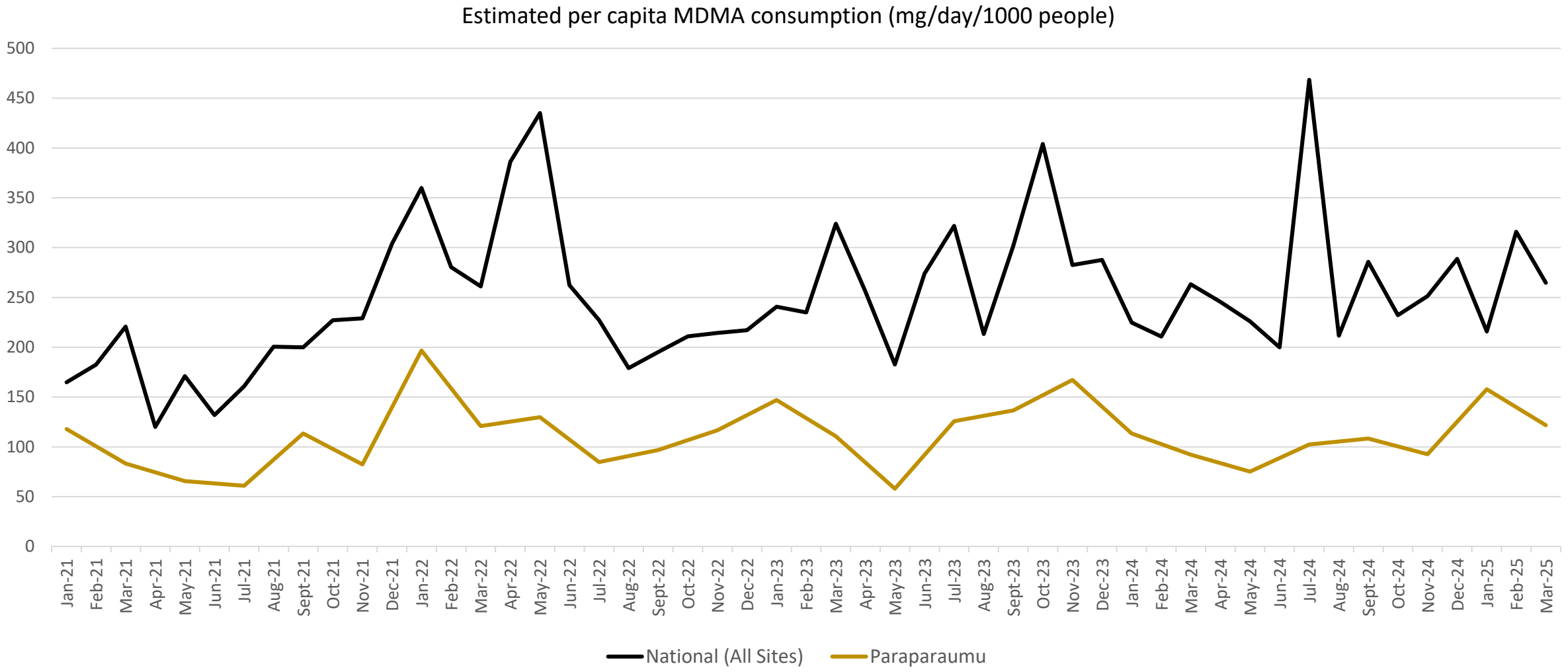
The national picture



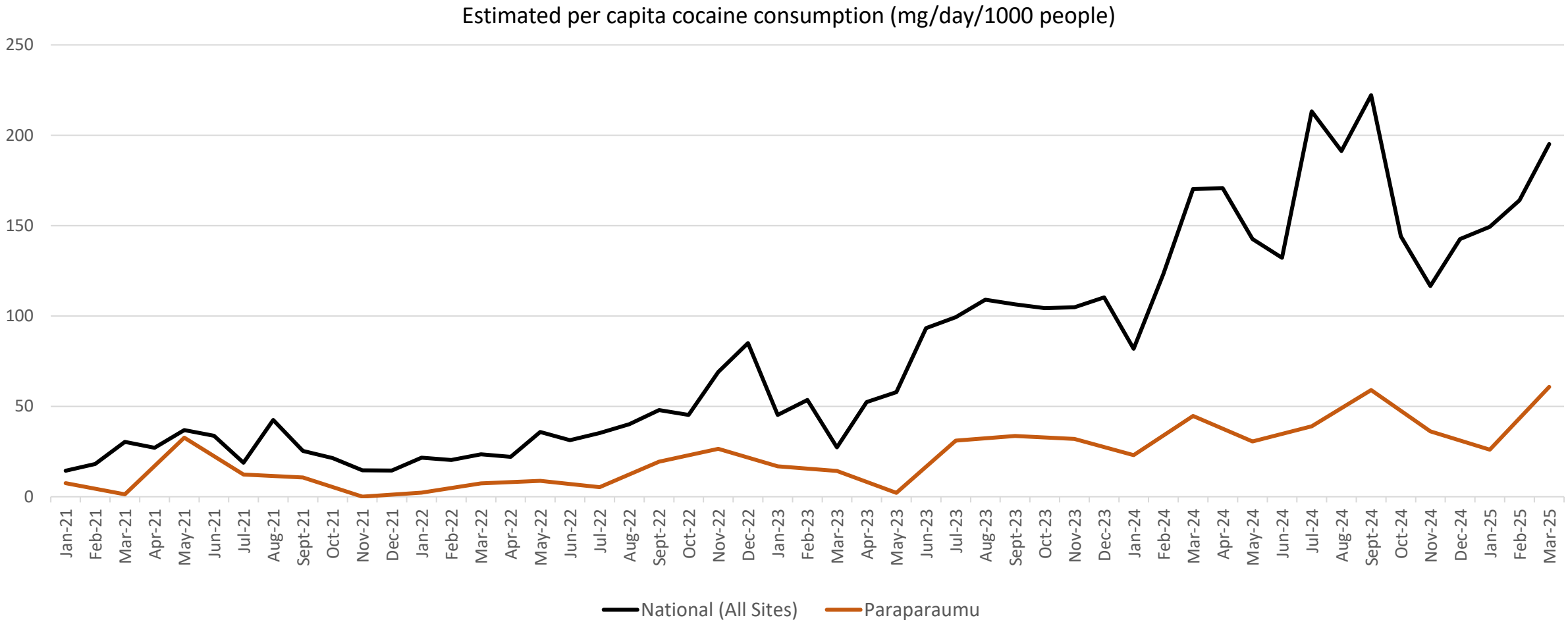
Paraparaumu meth consumption



Paraparaumu MDMA consumption

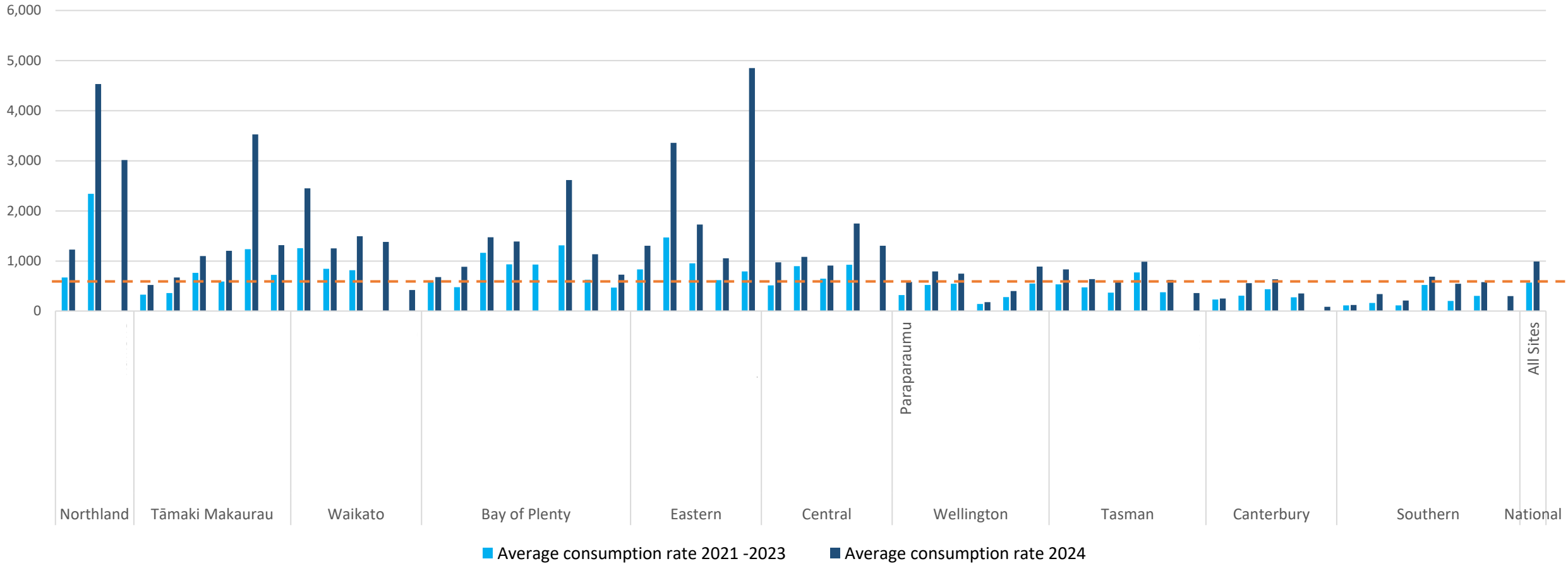


Paraparaumu cocaine consumption



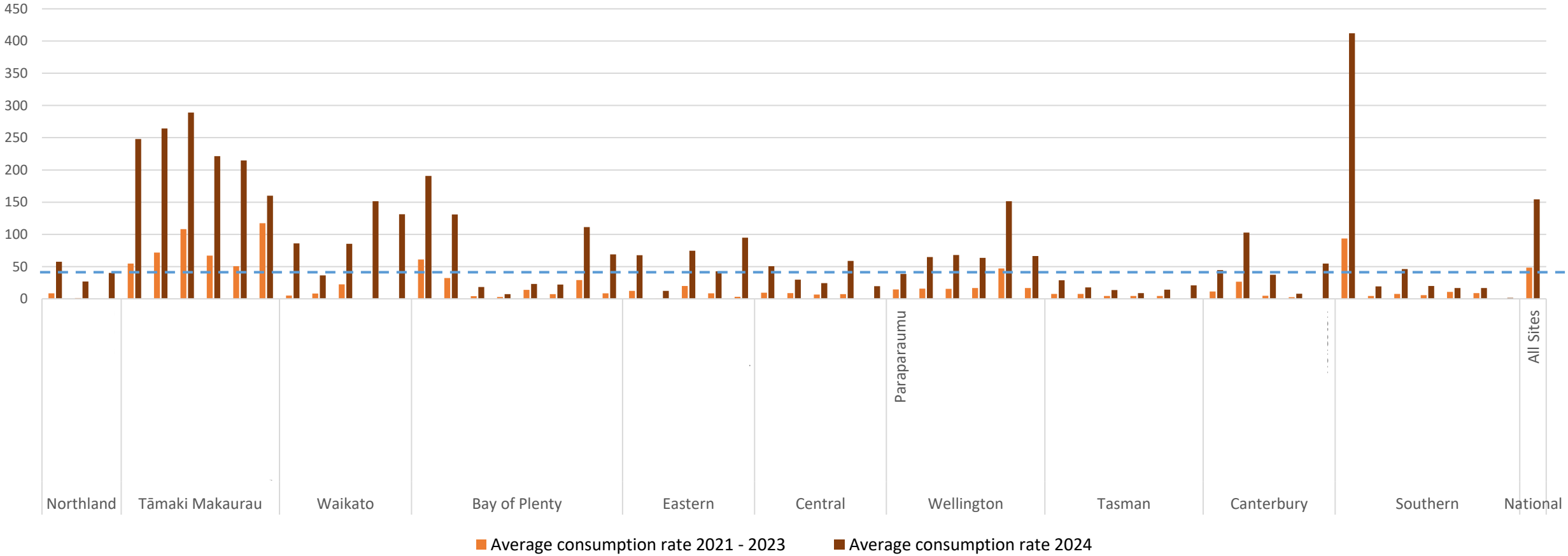
In comparison with other sites (meth)

Estimated per capita methamphetamine use by site: average consumption 2024 v average of previous 3 years
(mg/day/1000 people)



In comparison with other sites (coke)

Estimated per capita cocaine use by site: average consumption 2024 v average of previous 3 years
(mg/day/1000 people)



What does this mean?

Paraparaumu	Methamphetamine	MDMA	Cocaine
Estimated grams per week	235	38	14
Estimated doses per week	11,733	301	143
Estimated social harm cost	$245,963	$7,881	$5,355
Estimated money spent on drugs	$70,395	$9,408	$5,561

How we use the data

- As an evidence base to support funding/resource allocation
- Inform government and organisational policy settings
- Understand illicit drug use trends, both temporal and geographic
- Provide per kilogram social harm cost estimates for the New Zealand Illicit Drug Harm Index
- Inform intelligence inferences around supply and availability
- Contribute to international data collection and understanding of drug trends

Thank you

Any questions?

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