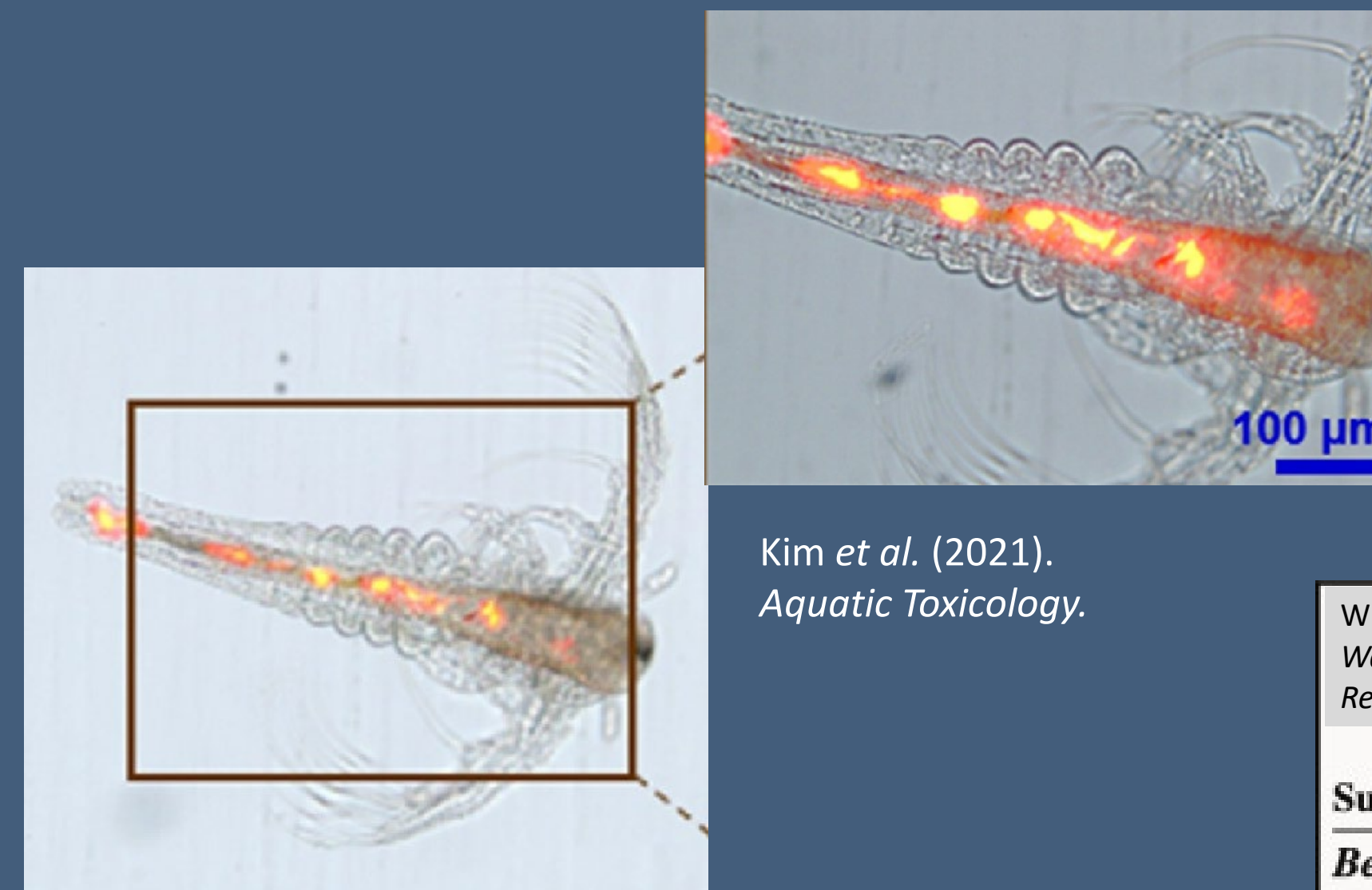
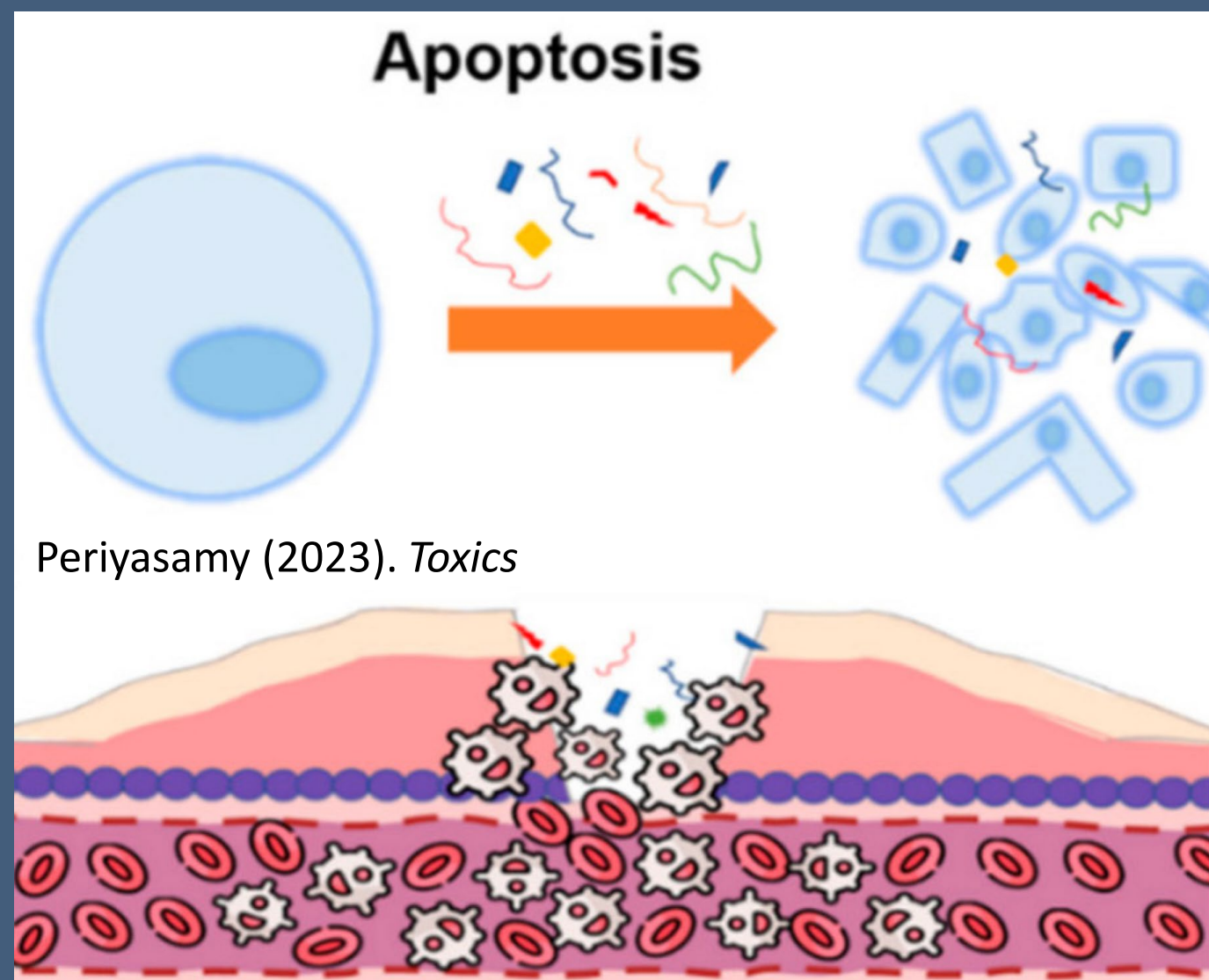


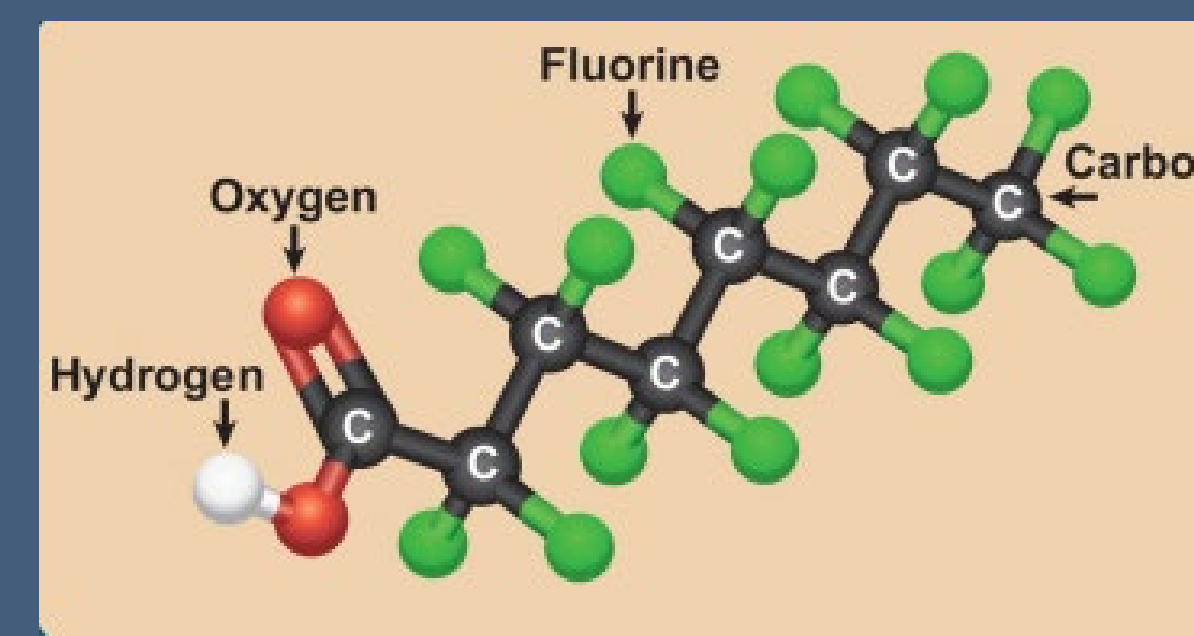
Science

Physical Ecological Impacts

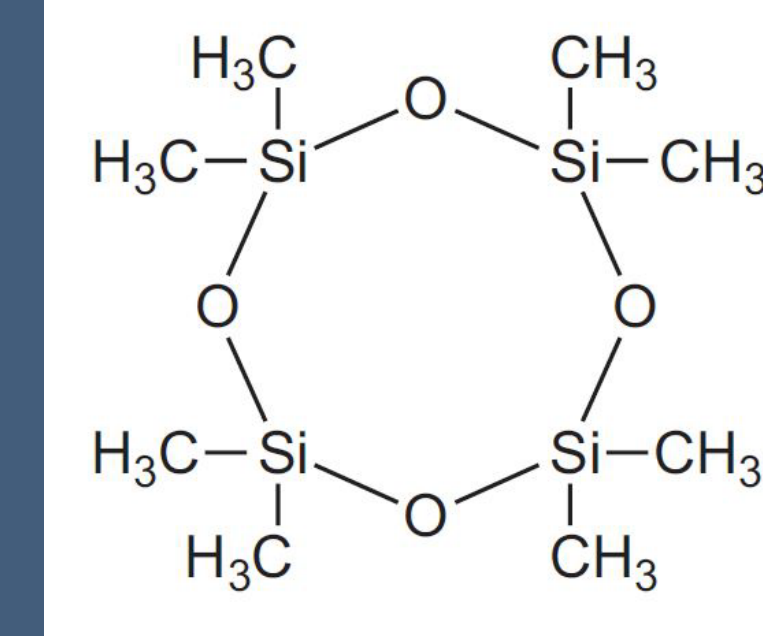


Chemical Impacts

PFAS



Silicones

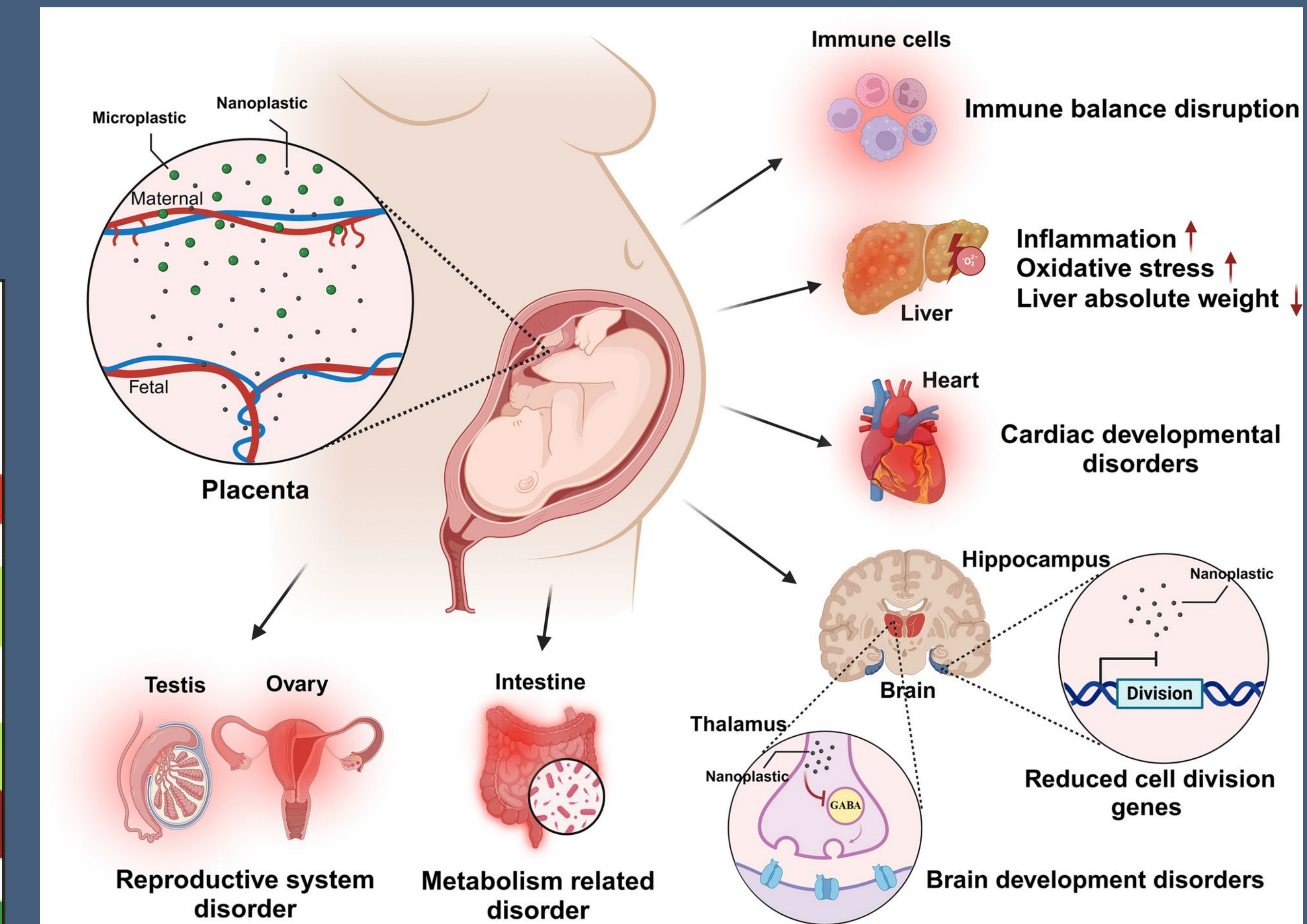


Whittaker et al. (2018). *Waterproof and Water Repellent Textiles and Clothing*

Substance	Human health									Ecotoxicity		Fate	
	C	M	R	D	E	AT	ST	N	AA	CA	P	B	
Benchmark chemical													
PFOA # *	H	L	H	H	PEA	M	H	DG	L	L	vH	H	
Side-chain fluorinated polymers													
PFHxA # **	L	L	L	M	DG	M	H	DG	M	L	vH	L	
PFBS # *	DG	L	L	L	PEA	L	L	DG	L	L	vH	L	
Silicones													
Short-chain silanols #	DG	DG	DG	DG	DG	DG	DG	DG	DG	DG	DG	DG	
Dimethylsilane diol #	DG	DG	DG	DG	DG	DG	M	DG	DG	DG	vH	L*	
Trimethyl silanol #	DG	L	DG	L	DG	M	M	DG	L	DG	DG	L*	
D4 *	NA	NA	M	NA	NA	NA	NA	NA	NA	vH	vH	vH	
D5 *	M	L	L	L	DG	L	M	DG	L	L	vH	vH	
Hydrocarbons													
Paraffin Wax #	L	L	L	L	DG	L	M	DG	L	L	L	vL	

Human Health Impacts

Diverse and Poorly Understand Impacts

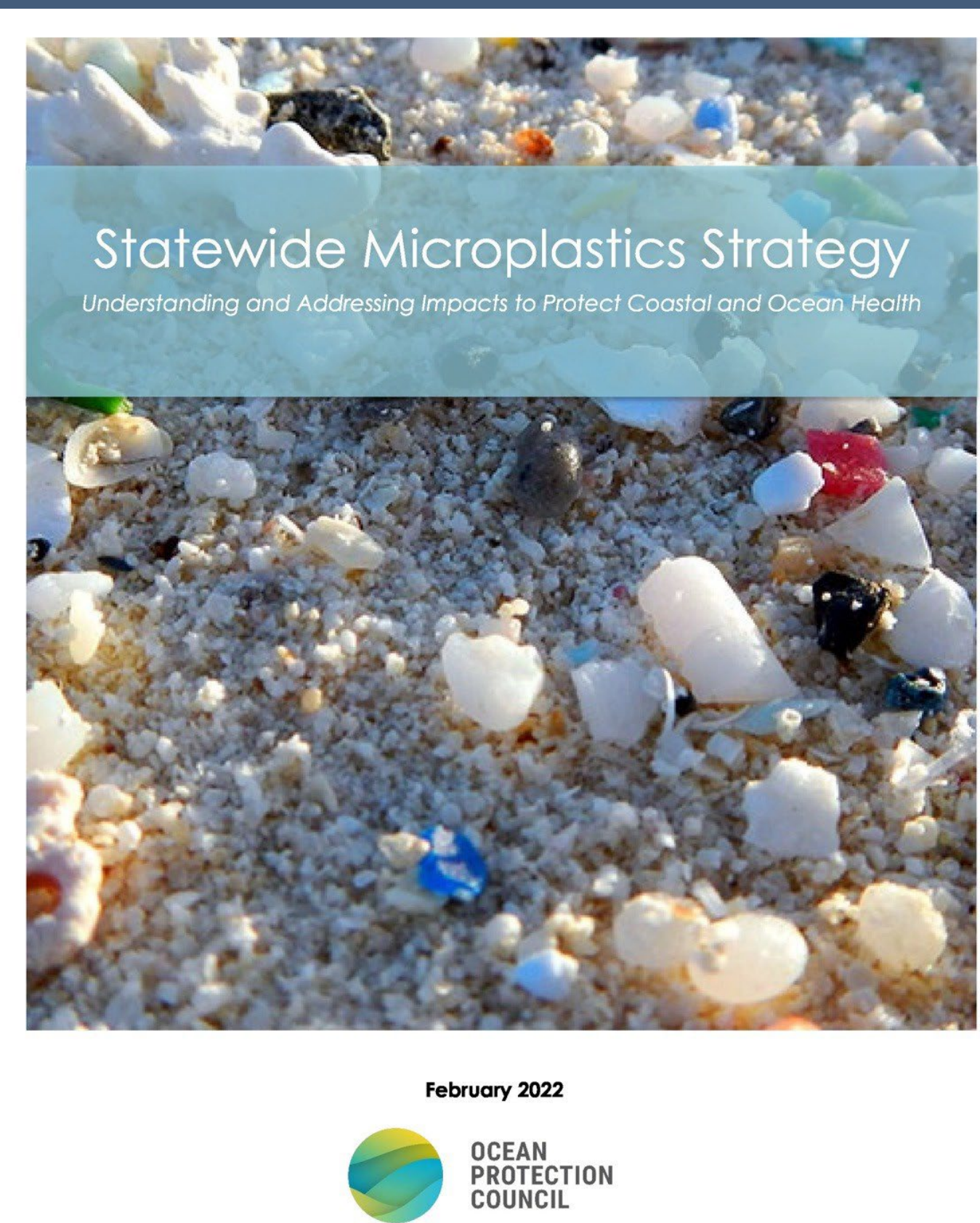


Balali et al. (2024). *Reproductive Biology and Endocrinology*

Management

Strategic & Adaptive Management

Two-track approach



1. "No-regrets" solutions

- Pollution Prevention
- Pathway Interventions
- Outreach & Education

2. Science to Inform Future Action



Ecological Risk Assessment

Monitoring

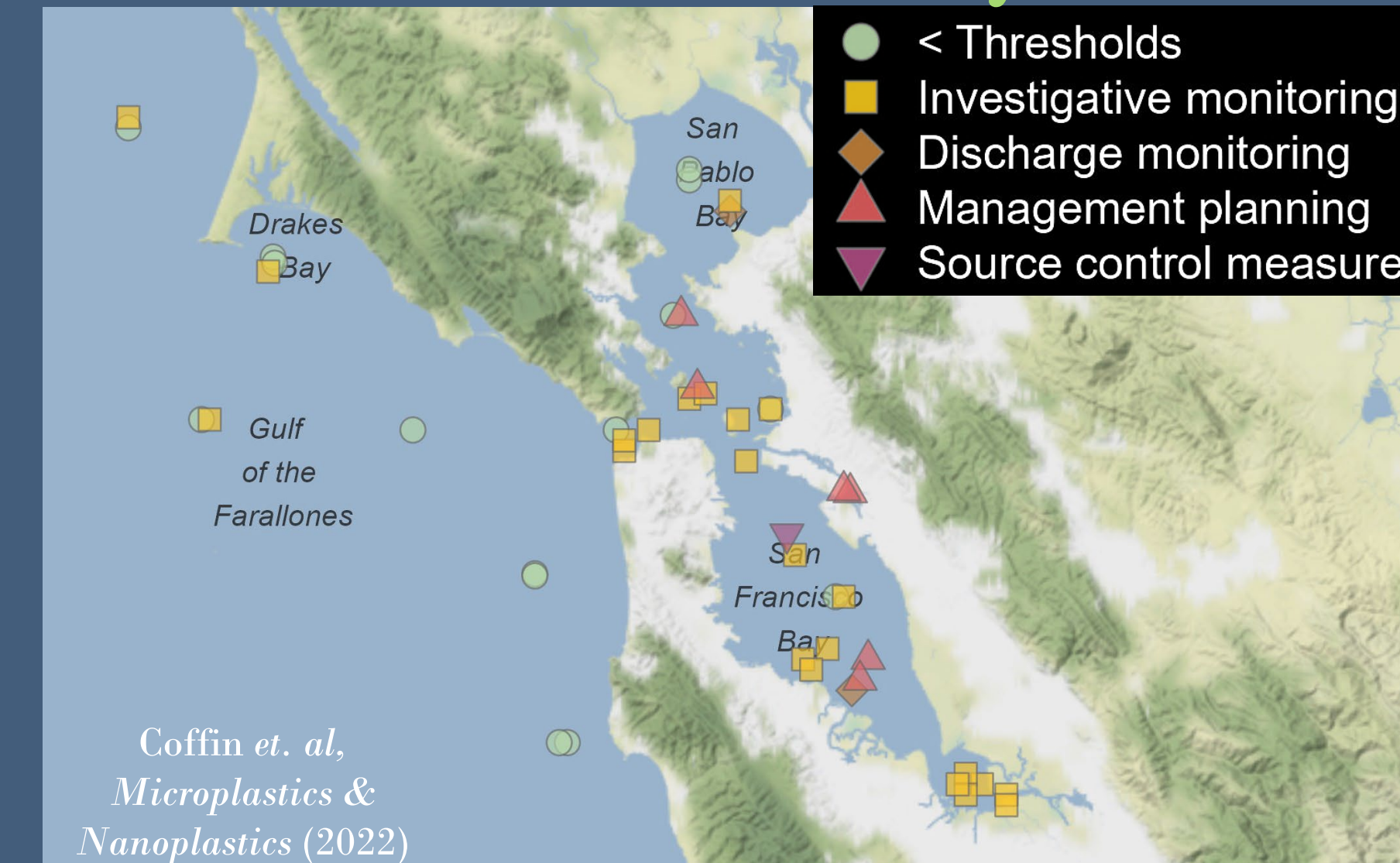


Hazard Assessment

Threshold	Food Dilution (particles/L)	Tissue Translocation (particles/L)
1- Investigative monitoring	0.3	60
2- Discharge monitoring	3.0	320
3- Management planning	5.0	890
4- Source control measures	34	4,100

Mehinto et al. (2022). *Microplastics & Nanoplastics*

Risk characterization in San Francisco Bay



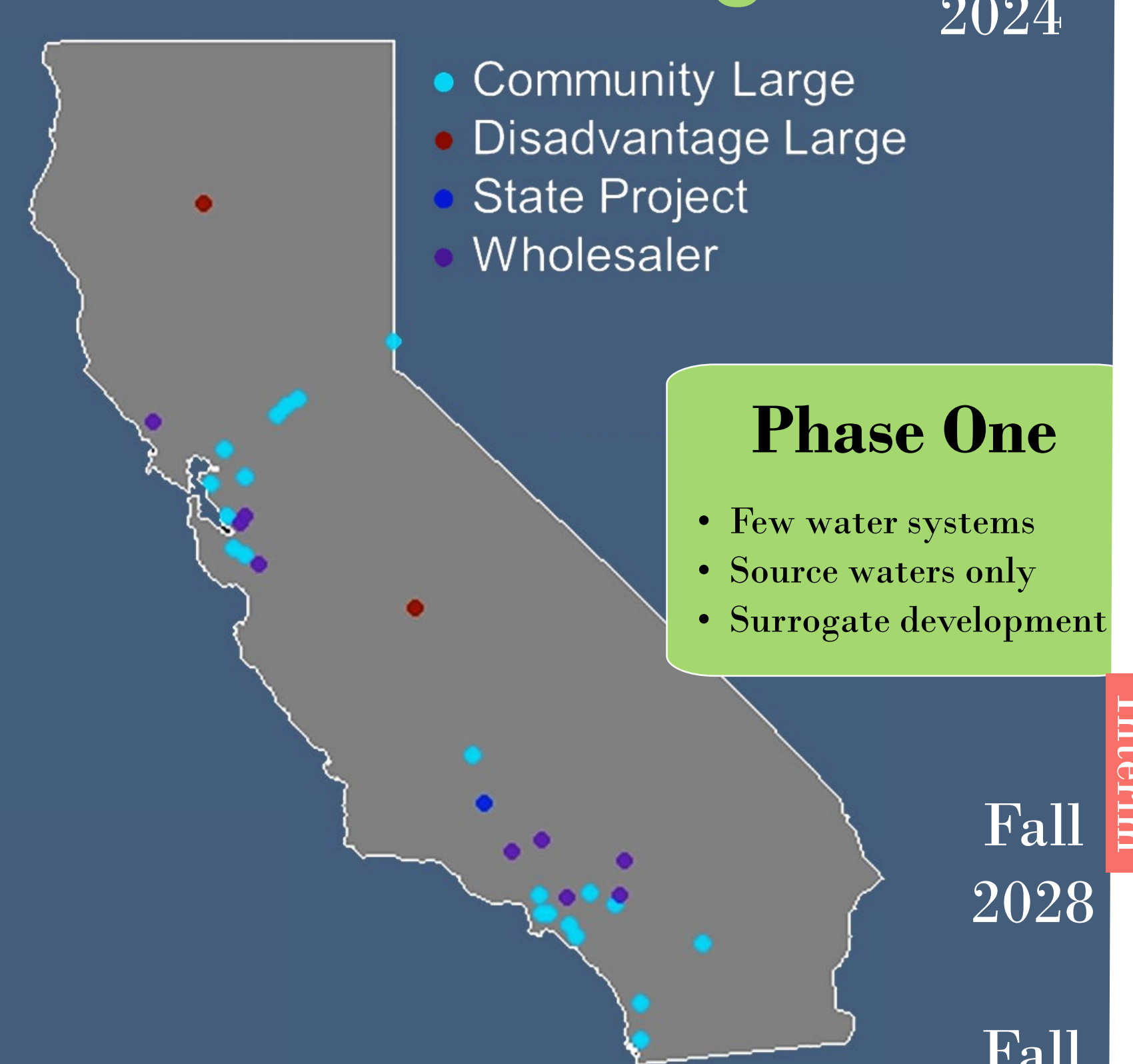
Regulatory Implications

1	2	3	4	5
• At least one core beneficial use is supported and none are known to be impaired.	• Not enough information to determine beneficial use support.	• Not enough information to determine beneficial use support; but there is information that indicates beneficial uses may be threatened.	• 4A: All 303(d) listings in the waterbody are being addressed and at least one is being addressed by a USEPA approved TMDL. • 4B: All 303(d) listings in the waterbody are being addressed by actions other than a TMDL. • 4C: Impairment is the result of pollution and not a specific pollutant.	• There are one or more 303(d) listings in the waterbody, and at least one of the listings has not yet been addressed by a TMDL.

State Water Resources Control Board 2024 Integrated Report. Recommended draft ruling under the United State Clean Water Act.

Drinking Water Monitoring

Statewide Source Water Monitoring



Senate Bill 1422
State Water Board

Pilot Phase

- Sampling method comparison
- Range-finding
- Sample training

Spring 2024

Spring 2026

Phase Two

- Additional systems
- Treated waters
- Tiered monitoring

Spring 2028
Fall 2028
Fall 2030

[Approximate dates]