

Coastal Pollution Data Explorer: Published Thresholds

This document provides the context for Coastal Pollution Data Explorer data, including published tissue and sediment thresholds from the EPA and FDA and additional literature sources.

Abbreviations:

EPA SV Rec	EPA SV for Recreational Fishers (parts per billion wet weight, ppb ww)
EPA SV Sub	EPA SV for Subsistence Fishers (parts per billion wet weight, ppb ww)
US FDA Action	US FDA Action Level (parts per billion wet weight, ppb ww)
US FDA Tolerance	US FDA Tolerance Level (parts per billion wet weight, ppb ww)
ERL	Effects Range Low (parts per billion dry weight, ppb dw)
ERM	Effects Range Median (parts per billion dry weight, ppb dw)
PEL	Probable Effect Level (milligrams per kilogram dry weight, mg/kg dry)
SQG	Sediment quality guideline (milligrams per kilogram dry weight, mg/kg dry)

Metal/Contaminant Groups Threshold Tables Sources:

Please refer to the following sources referenced in the threshold table. Cells with no information indicate that there are no published thresholds on that specific metal or contaminant. The “Restriction Year” column denotes the year that the FDA/EPA implemented certain restrictions or limitations on metal or contaminant usage. Please refer to the description table below for more information.

- (1) Edition, T. (2000). Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories.
 - a. Table 1-3;
 - b. Table 5-3;
 - c. Table 5-4;
 - d. Table 8-4;
 - e. Table B-1
- (2) Long, E. R., Macdonald, D. D., Smith, S. L., & Calder, F. D. (1995). Incidence of adverse biological effects within ranges of chemical concentrations in marine and estuarine sediments. Environmental Management, 19(1), 81-97. doi:10.1007/bf02472006
 - a. Table 3;b. Table 4
- (3) Ocean Wise Conservation Association. Pollution Tracker, pollutiontracker.org. Accessed 18/09/2024.
- (4) NOAA, U. (1999). Screening Quick Reference Tables (SQuiRTs). Coastal protection and restoration division. National Marine Fisheries Service (NMFS). Our Living Oceans. Report on the status of US living marine resources.

	Tissue					Sediment			
Metal	EPA SV Rec	EPA SV Sub	US FDA Action	US FDA Tolerance	ERL	ERM	PEL	SQG	
Arsenic	26 ^{1d}	3.27 ^{1d}			8.2 ^{2a}	70 ^{2a}	41.6 ⁴		
Cadmium	4000 ^{1d}	491 ^{1d}			1.2 ^{2a}	9.6 ^{2a}	4.2 ³	0.7 ³	
Chromium					81 ^{2a}	370 ^{2a}	160 ⁴		
Copper					34 ^{2a}	270 ^{2a}	108 ⁴		
Lead					46.7 ^{2a}	218 ^{2a}	112 ³	30.2 ³	
Mercury	400 ^{1d}	49 ^{1d}	1000 ^{1a}		0.15 ^{2a}	0.71 ^{2a}	0.7 ³	0.13 ³	
Nickel					20.9 ^{2a}	51.6 ²	42.8 ⁴		
Selenium	20000 ^{1d}	2457 ^{1d}							
Silver					1.0 ^{2a}	3.7 ^{2a}	1.77 ⁴		
Zinc					150 ^{2a}	410 ^{2a}	271 ⁴		

Contaminant group	Analytes	Restriction Year	Tissue					Sediment			
			EPA SV Rec	EPA SV Sub	US FDA Action	US FDA Tolerance	ERL	ERM	PEL	SQG	
Butyltins	tributyltin	1989	1200 ^{1d}	147 ^{1d}							
Chlordanes	cis-Chlordanne trans-Chlordanne cis-Nonachlor trans-Nonachlor Oxychlordane	1988	114 ^{1a}	14 ^{1a}	300 ^{1a}		0.5 ⁴	6 ⁴	4.79 ⁴		
	Heptachlor, Heptachlor epoxide		4.39 ^{1a}	0.54 ^{1a}	300 ¹						
Chlorobzenes	Hexachlorobenzene	1984	25 ^{1d}	3.07 ^{1d}							
Chlorpyrifos		2023	1200 ^{1e}	1147 ^{1e}							
DDTs	4,4'-DDT, 2,4'-DDT, 4,4'-DDD, 2,4'-DDD, 4,4'-DDE, 2,4'-DDE	1972	117 ^{1a}	14.4 ^{1a}	5000 ^{1a}						
	pp'-DDE						2.2 ^{2b}	27 ^{2b}	374 ⁴		
	Total DDTs*						1.58 ^{2b}	46.1 ^{2b}	51.7 ⁴		
Dieldrins	dieldrin	1974	2.5 ^{1a}	0.307 ^{1a}	300 ^{1a}		0.02 ⁴	8 ⁴	4.3 ⁴		
	aldrin	1974			300 ^{1a}						
	endrin	1987	1200 ^{1d}	147 ^{1d}							
Endosulfans	Endosulfan (I and II)	2016	24000 ^{1d}	2949 ^{1d}							
HCHs	Lindane (known as Gamma-hexachlorocyclohexane or Gamma-HCH)	2009	30.7 ^{1b}	3.78 ^{1c}							

Mirex	Mirex	1978	800 ^{1a}	98 ^{1a}	100 ^{1a}					
PAHs	benzo(a)pyrene and 14 other PAHs**		5.47 ^{1e}	0.673 ^{1e}						
	24 PAHs***						4022 ^{2b}	44792 ²		
	High weight PAHs (> 4 rings)						1700 ^{2b}	9600 ^{2b}		
	Low weight PAHs (< 3 rings)						552 ^{2b}	3160 ^{2b}		
	Acenaphthene						16 ^{2b}	500 ^{2b}		
	Acenaphthylene						44 ^{2b}	640 ^{2b}		
	Anthracene						85.3 ^{2b}	1100 ^{2b}		
	Flourene						19 ^{2b}	540 ^{2b}		
	2-Methylnaphthalene						70 ^{2b}	670 ^{2b}		
	Naphthalene						160 ^{2b}	2100 ^{2b}		
	Phenanthrene						240 ^{2b}	1500 ^{2b}		
	Benzo(a)anthracene						261 ^{2b}	1600 ^{2b}		
	Benzo(a)pyrene						430 ^{2b}	1600 ^{2b}		
	Chrysene						384 ^{2b}	2800 ^{2b}		
	Dibenz(a,h)anthracene						63.4 ^{2b}	260 ^{2b}		
	Fluoranthene						600 ^{2b}	5100 ^{2b}		
	Pyrene						665 ^{2b}	2600 ^{2b}		
PCBs	18 congeners (8, 18, 28, 44, 52, 66, 77, 101, 105, 118, 126, 128, 138, 153, 169, 170, 180, 187)	1979	20 ^{1a}	2.45 ^{1a}		2000 ^{1a}				
	Total****						22.7 ^{2b}	180 ^{2b}	189 ³	21.5 ³

*: The total concentration of 4,4'- and 2,4'-DDT and their 4,4' and 2,4'-DDE and DDD metabolites.

**: (Acenaphthene, Acenaphthylene, Anthracene, Benz(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Benzo(g,h,i)perylene, Chrysene, Dibenz(a,h)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene, Phenanthrene, Pyrene) and that a potency-weighted total concentration be calculated for each sample for comparison with the recommended SVs for benzo(a)pyrene.

***: The total concentrations on 12 low molecular weight (Naphthalene, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, 2,6-Dimethylnaphthalene, Acenaphthylene, Acenaphthene, 1,6,7-Trimethylnaphthalene, Fluorene, Phenanthrene, 1-Methylphenanthrene, Anthracene) and 12 high molecular weight (Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k,j)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-c,d)pyrene, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene) PAH compounds.

****: The total concentrations of 18 PCB congeners (8,18,28,44,52,66, 101,105,118,126,128,138,153,170,180,187,195,206,209) multiplied by two as a proxy for the total of all 209 PCB congeners.