



## Alaska Department of Environmental Conservation

### Office of the State Veterinarian

#### Fish Monitoring Program

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### Total Mercury in Alaska's Fish

Fish Samples collected: 2001-2016

Concentration in mg/Kg wet weight

ND = Non-detect in greater than 50% of fish samples

Visit the Fish Monitoring Program webpage for more information:

<http://www.dec.alaska.gov/eh/vet/FMP.html>

For State of Alaska fish consumption recommendations visit:

<http://www.dhss.alaska.gov/dph/Epi/eph/Pages/fish/default.aspx>

Table 1: Total Mercury in Marine Fish

mg/Kg wet weight									
Species	Tissue	n	Non Detect	A mean	SD	G mean	Median	Min	Max
Alaska Plaice	Fillet	31	0	0.036	0.022	0.032	0.027	0.015	0.123
Arctic Flounder	Whole Body	4	0	0.020	0.002	0.020	0.020	0.018	0.023
Arctic Sculpin	Whole Body	1	0	0.023	NA	0.023	0.023	0.023	0.023
Atka Mackerel	Fillet	4	0	0.075	0.031	0.071	0.064	0.052	0.119
Atka Mackerel	Whole Body	5	0	0.042	0.017	0.038	0.043	0.016	0.064
Big Skate	Fillet	112	0	0.137	0.085	0.117	0.110	0.017	0.480
Big Skate	Liver	20	0	0.042	0.034	0.033	0.031	0.009	0.140
Black Rockfish	Fillet	80	1	0.130	0.100	0.102	0.097	0.012	0.530
Black Rockfish	Whole Body	7	0	0.126	0.090	0.101	0.070	0.050	0.269
Blue Shark	Fillet	1	0	1.340	NA	1.340	1.340	1.340	1.340
Butter Sole	Whole Body	1	0	0.051	NA	0.051	0.051	0.051	0.051
China Rockfish	Fillet	1	0	0.370	NA	0.370	0.370	0.370	0.370
Copper Rockfish	Fillet	4	0	0.180	0.098	0.161	0.160	0.090	0.310
Dusky Rockfish	Fillet	63	0	0.092	0.113	0.049	0.044	0.010	0.416
Dusky Rockfish	Whole Body	20	0	0.137	0.132	0.103	0.084	0.036	0.609
Flathead Sole	Fillet	15	0	0.057	0.023	0.052	0.057	0.023	0.096
Fourhorn Sculpin	C-Fillet	1	0	0.014	NA	0.014	0.014	0.014	0.014
Fourhorn Sculpin	Whole Body	6	0	0.051	0.022	0.046	0.053	0.023	0.072
Great Sculpin	Whole Body	2	0	0.068	0.001	0.068	0.068	0.068	0.069
Kelp Greenling	Fillet	1	0	0.108	NA	0.107	0.108	0.108	0.108
Kelp Greenling	Whole Body	18	0	0.164	0.141	0.116	0.113	0.010	0.517
Lingcod	Fillet	288	0	0.442	0.286	0.341	0.390	0.029	1.672
Longnose Skate	Fillet	114	0	0.392	0.195	0.346	0.370	0.100	1.000
Longnose Skate	Liver	20	0	0.093	0.088	0.061	0.066	0.018	0.360
Northernrock Sole	Fillet	20	0	0.042	0.013	0.040	0.040	0.024	0.064
Northernrock Sole	Whole Body	19	0	0.056	0.032	0.047	0.060	0.013	0.135
Pacific Cod	Fillet	171	2	0.119	0.094	0.086	0.095	0.012	0.496
Pacific Halibut	Fillet	2782	7	0.289	0.278	0.202	0.192	0.012	2.000
Quillback Rockfish	Fillet	20	0	0.410	0.209	0.360	0.400	0.099	1.000
Rock Greenling	Whole Body	16	0	0.118	0.079	0.100	0.082	0.051	0.321
Rougeye Rockfish	Fillet	74	0	0.107	0.135	0.069	0.061	0.021	0.870
Sablefish	Fillet	315	5	0.140	0.181	0.069	0.077	0.006	1.192
Sablefish	Whole Body	3	0	0.145	0.099	0.126	0.089	0.087	0.260
Salmon Shark	Fillet	97	0	1.366	0.294	1.335	1.319	0.758	2.074
Shorthorn Sculpin	Fillet	1	0	0.195	NA	0.195	0.195	0.195	0.195
Shorthorn Sculpin	Whole Body	1	0	0.108	NA	0.108	0.108	0.108	0.108
Shortraker Rockfish	Fillet	8	0	0.538	0.130	0.525	0.525	0.390	0.810
Silvergray Rockfish	Fillet	10	1	0.111	0.122	0.071	0.070	0.012	0.425
Sleeper Shark	Fillet	1	0	0.890	NA	0.890	0.890	0.890	0.890
Southernrock Sole	Whole Body	1	1	ND	NA	ND	ND	ND	ND
Spiny Dogfish	Fillet	66	0	0.700	0.281	0.629	0.725	0.095	1.340
Starry Flounder	Fillet	1	0	0.077	NA	0.077	0.077	0.077	0.077
Starry Flounder	C-Fillet	3	0	0.028	0.021	0.024	0.017	0.016	0.052
Starry Flounder	Whole Body	1	0	0.062	NA	0.062	0.062	0.062	0.062
Walleye Pollock	Fillet	185	101	ND	NA	ND	ND	ND	ND
Yelloweye Rockfish	Fillet	117	1	0.535	0.310	0.433	0.474	0.005	1.327

Species	Tissue	n	Non Detect	A mean	SD	G mean	Median	Min	Max
Yellowfin Sole	Fillet	33	0	0.060	0.018	0.057	0.059	0.028	0.089
Yellowtail Rockfish	Fillet	7	0	0.062	0.022	0.059	0.072	0.029	0.083

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n = Sample Size; A Mean = Arithmetic Mean; G Mean = Geometric Mean; SD = Standard Deviation;  
 C = Composite of multiple individuals

Table 2: Total Mercury in Salmonids (Salmon, Whitefish, Grayling, Char)

mg/Kg wet weight

Species	Tissue	n	Non Detect	A mean	SD	G mean	Median	Min	Max
Arctic Char	Fillet	13	0	0.075	0.080	0.051	0.038	0.020	0.250
Arctic Char	Whole Body	10	0	0.030	0.013	0.028	0.027	0.018	0.064
Arctic Cisco	Fillet	21	0	0.019	0.003	0.019	0.019	0.015	0.025
Arctic Cisco	C-Fillet	1	0	0.018	NA	0.018	0.018	0.018	0.018
Arctic Grayling	Fillet	47	0	0.088	0.035	0.081	0.082	0.033	0.180
Arctic Grayling	Whole Body	3	0	0.023	0.014	0.020	0.031	0.008	0.032
Arctic Grayling	C-Juvenile	1	0	0.048	NA	0.048	0.048	0.048	0.048
Arctic Grayling	C-Whole Body	11	0	0.052	0.030	0.043	0.058	0.014	0.104
Bering Cisco	Fillet	5	0	0.065	0.015	0.064	0.064	0.046	0.087
Broad Whitefish	Fillet	48	2	0.058	0.036	0.046	0.059	0.005	0.210
Chum Salmon	Fillet	280	10	0.041	0.014	0.039	0.039	0.012	0.103
Chum Salmon	Whole Body	2	2	ND	NA	ND	ND	ND	ND
Chum Salmon	C-Juvenile	1	0	0.096	NA	0.096	0.096	0.096	0.096
Coho Salmon	Fillet	321	27	0.039	0.013	0.036	0.039	0.012	0.113
Coho Salmon	Belly	10	0	0.037	0.010	0.036	0.039	0.019	0.049
Coho Salmon	Whole Body	63	0	0.034	0.009	0.032	0.032	0.014	0.061
Coho Salmon	Eggs	20	10	ND	NA	ND	ND	ND	ND
Coho Salmon	Testis	6	0	0.006	0.001	0.006	0.006	0.005	0.007
Coho Salmon	Fry Whole	22	0	0.021	0.019	0.016	0.018	0.005	0.074
Coho Salmon	C-Fry	7	0	0.028	0.025	0.021	0.021	0.009	0.082
Coho Salmon	Juvenile Whole	12	6	ND	NA	ND	ND	ND	ND
Coho Salmon	C-Juvenile	1	0	0.057	NA	0.057	0.057	0.057	0.057
Coho Salmon	C-Whole Body	2	0	0.023	0.013	0.021	0.023	0.014	0.032
Dolly Varden	Fillet	65	0	0.065	0.103	0.035	0.026	0.008	0.548
Dolly Varden	C-Fillet	2	0	0.034	0.006	0.033	0.034	0.029	0.038
Dolly Varden	Whole Body	46	0	0.036	0.026	0.028	0.024	0.008	0.110
Humpback Whitefish	Fillet	110	0	0.065	0.033	0.056	0.062	0.008	0.180
Humpback Whitefish	Whole Body	24	0	0.048	0.025	0.042	0.044	0.012	0.120
King Salmon	Fillet	237	2	0.064	0.025	0.059	0.061	0.012	0.159
King Salmon	Whole Body	16	0	0.047	0.018	0.044	0.046	0.020	0.090
King Salmon	C-Fry	7	0	0.039	0.018	0.036	0.031	0.024	0.075
King Salmon	C-Juvenile	3	0	0.007	0.001	0.007	0.007	0.006	0.007
Lamprey	Whole Body	10	0	0.028	0.007	0.028	0.028	0.018	0.040
Least Cisco	Fillet	31	0	0.050	0.019	0.047	0.046	0.021	0.098
Least Cisco	Whole Body	1	0	0.014	NA	0.014	0.014	0.014	0.014
Pink Salmon	Fillet	185	104	ND	NA	ND	ND	ND	ND
Pygmy Whitefish	Whole Body	1	0	0.043	NA	0.043	0.043	0.043	0.043
Round Whitefish	Fillet	12	0	0.075	0.056	0.056	0.068	0.008	0.200
Sheefish	Fillet	44	0	0.138	0.048	0.130	0.130	0.061	0.262
Sheefish	Whole Body	5	0	0.091	0.033	0.085	0.088	0.041	0.130
Sheefish	Eggs	1	0	0.015	NA	0.015	0.015	0.015	0.015
Sheefish	Testis	4	0	0.026	0.011	0.023	0.030	0.010	0.033
Sheefish	Liver	5	0	0.149	0.061	0.135	0.160	0.054	0.210
Sheefish	Kidney	21	0	0.174	0.079	0.158	0.160	0.063	0.370
Sockeye Salmon	Fillet	286	27	0.041	0.030	0.036	0.038	0.012	0.304
Sockeye Salmon	Whole Body	56	0	0.033	0.009	0.031	0.033	0.012	0.055

Species	Tissue	n	Non Detect	A mean	SD	G mean	Median	Min	Max
Sockeye Salmon	Eggs	2	1	ND	NA	ND	ND	ND	ND
Sockeye Salmon	C-Fry	3	0	0.048	0.019	0.045	0.058	0.026	0.061
Sockeye Salmon	C-Whole Body	1	0	0.094	NA	0.094	0.094	0.094	0.094

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n = Sample Size; A Mean = Arithmetic Mean; G Mean = Geometric Mean; SD = Standard Deviation;  
 C = Composite of multiple individuals

**Table 3: Total Mercury in Marine Forage Fish**

mg/Kg wet weight

Species	Tissue	n	Non Detect	A mean	SD	G mean	Median	Min	Max
Capelin	C-Whole Body	1	1	ND	NA	ND	ND	ND	ND
Eulachon	C-Whole Body	7	7	ND	NA	ND	ND	ND	ND
Pacific Herring	C-Fillet	4	0	0.045	0.010	0.044	0.044	0.035	0.057
Pacific Herring	C-Whole Body	12	1	0.018	0.010	0.017	0.016	0.005	0.048
Rainbow Smelt	Fillet	1	0	0.034	NA	0.034	0.034	0.034	0.034
Rainbow Smelt	Whole Body	12	0	0.041	0.076	0.023	0.020	0.009	0.283
Rainbow Smelt	C-Whole Body	2	0	0.056	0.060	0.037	0.056	0.014	0.098
Saffron Cod	C-Fillet	2	0	0.033	0.007	0.033	0.033	0.028	0.038
Saffron Cod	Whole Body	20	0	0.022	0.007	0.021	0.021	0.012	0.040
Sand Lance	C-Whole Body	2	0	0.065	0.084	0.025	0.065	0.005	0.124

n = Sample Size; A Mean = Arithmetic Mean; G Mean = Geometric Mean; SD = Standard Deviation;  
C = Composite of multiple individuals

**Table 4: Total Mercury in Marine Invertebrates**

mg/Kg wet weight

Species	Tissue	n	Non Detect	A mean	SD	G mean	Median	Min	Max
Blue Mussel	Invert Whole Tissue	4	0	0.014	0.007	0.012	0.013	0.006	0.023
Blue Mussel	C-Invert Whole	56	2	0.025	0.026	0.017	0.014	0.003	0.130
Butter Clam	Invert Whole Tissue	5	2	0.006	0.003	0.006	0.005	0.005	0.011
Butter Clam	C-Invert Whole	3	1	0.005	0.001	0.005	0.005	0.005	0.006
Chiton	Invert Whole Tissue	2	0	0.012	0.001	0.012	0.012	0.011	0.013
Cockle	Invert Whole Tissue	5	0	0.019	0.007	0.017	0.020	0.011	0.028
Cockle	C-Invert Whole	1	1	ND	NA	ND	ND	ND	ND
Decorator Crab	Invert Whole Tissue	1	0	0.021	NA	0.021	0.021	0.021	0.021
Dungeness Crab	Invert Whole Tissue	2	0	0.028	0.005	0.028	0.028	0.025	0.032
Geoduck	Invert Viscera	7	0	0.041	0.011	0.040	0.035	0.027	0.054
Hermit Crab	Invert Whole Tissue	1	1	ND	NA	ND	ND	ND	ND
Horse Clam	C-Invert Whole	1	0	0.007	NA	0.007	0.007	0.007	0.007
Macoma Clam	C-Invert Whole	1	0	0.014	NA	0.014	0.014	0.014	0.014
Oysters	Invert Whole Tissue	16	0	0.013	0.005	0.012	0.010	0.006	0.023
Pacific Octopus	Invert Whole Tissue	6	0	0.016	0.005	0.015	0.016	0.008	0.021
Razor Clam	Invert Muscle	2	0	0.008	0.001	0.008	0.008	0.008	0.009
Ribbon Worm	Invert Whole Tissue	4	0	0.041	0.019	0.037	0.042	0.018	0.060
Ribbon Worm	C-Invert Whole	1	0	0.036	NA	0.036	0.036	0.036	0.036
Scallop	Invert Whole Tissue	20	0	0.032	0.006	0.031	0.032	0.016	0.042
Softshell Clam	Invert Whole Tissue	3	0	0.014	0.005	0.014	0.013	0.010	0.020
Softshell Clam	C-Invert Whole	8	0	0.034	0.035	0.026	0.020	0.015	0.120
Squid	C-Invert Whole	5	5	ND	NA	ND	ND	ND	ND

n = Sample Size; A Mean = Arithmetic Mean; G Mean = Geometric Mean; SD = Standard Deviation;  
C = Composite of multiple individuals

**Table 5: Total Mercury in Freshwater Fish**

mg/Kg wet weight

Species	Tissue	n	Non Detect	A mean	SD	G mean	Median	Min	Max
Alaska Blackfish	Whole Body	3	0	0.022	0.006	0.021	0.022	0.015	0.028
Alaska Blackfish	C-Whole Body	3	0	0.024	0.011	0.023	0.025	0.013	0.035
Arctic Grayling	Fillet	47	0	0.088	0.035	0.081	0.082	0.033	0.180
Arctic Grayling	Whole Body	3	0	0.023	0.014	0.020	0.031	0.008	0.032
Arctic Grayling	C-Juvenile	1	0	0.048	NA	0.048	0.048	0.048	0.048
Arctic Grayling	C-Whole Body	11	0	0.052	0.030	0.043	0.058	0.014	0.104
Burbot	Fillet	27	1	0.329	0.276	0.199	0.250	0.012	0.854
Lake Trout	Fillet	54	0	0.353	0.182	0.302	0.322	0.064	0.740
Lake Trout	Whole Body	33	0	0.271	0.133	0.233	0.270	0.059	0.540
Longnose Sucker	Fillet	3	0	0.071	0.012	0.071	0.073	0.059	0.082
Northern Pike	Fillet	576	1	0.406	0.280	0.307	0.330	0.012	1.357
Northern Pike	Whole Body	40	0	0.149	0.069	0.134	0.155	0.053	0.340
NS Stickleback	C-Whole Body	13	0	0.032	0.027	0.024	0.015	0.013	0.090
Rainbow Trout	Fillet	62	0	0.106	0.085	0.064	0.076	0.005	0.330
Rainbow Trout	Whole Body	11	0	0.163	0.042	0.158	0.160	0.110	0.250
Slimy Sculpin	Whole Body	61	0	0.027	0.016	0.024	0.022	0.010	0.088
Slimy Sculpin	C-Whole Body	13	0	0.055	0.036	0.044	0.045	0.014	0.120
TS Stickleback	Whole Body	10	0	0.079	0.016	0.077	0.078	0.057	0.106
TS Stickleback	C-Whole Body	4	0	0.142	0.098	0.120	0.112	0.064	0.280

n = Sample Size; A Mean = Arithmetic Mean; G Mean = Geometric Mean; SD = Standard Deviation;  
C = Composite of multiple individuals

NS = Ninespine, TS = Threespine