



Alaska Department of Environmental Conservation

Office of the State Veterinarian

Fish Monitoring Program

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Lead 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: Lead in Marine Fish

mg/Kg wet weight

Species	Tissue	n	Non Detect	A mean	SD	G mean	Median	Min	Max
Alaska Plaice	Fillet	31	31	ND	NA	ND	ND	ND	ND
Arctic Flounder	Whole Body	4	4	ND	NA	ND	ND	ND	ND
Arctic Sculpin	Whole Body	1	1	ND	NA	ND	ND	ND	ND
Atka Mackerel	Fillet	4	4	ND	NA	ND	ND	ND	ND
Atka Mackerel	Whole Body	5	5	ND	NA	ND	ND	ND	ND
Big Skate	Fillet	112	109	ND	NA	ND	ND	ND	ND
Big Skate	Liver	20	20	ND	NA	ND	ND	ND	ND
Black Rockfish	Fillet	85	76	ND	NA	ND	ND	ND	ND
Black Rockfish	Whole Body	7	7	ND	NA	ND	ND	ND	ND
Blue Shark	Fillet	1	1	ND	NA	ND	ND	ND	ND
Butter Sole	Whole Body	1	1	ND	NA	ND	ND	ND	ND
China Rockfish	Fillet	1	1	ND	NA	ND	ND	ND	ND
Copper Rockfish	Fillet	4	4	ND	NA	ND	ND	ND	ND
Dusky Rockfish	Fillet	64	63	ND	NA	ND	ND	ND	ND
Dusky Rockfish	Whole Body	20	17	ND	NA	ND	ND	ND	ND
Flathead Sole	Fillet	15	12	ND	NA	ND	ND	ND	ND
Fourhorn Sculpin	C-Fillet	1	0	0.023	NA	0.023	0.023	0.023	0.023
Fourhorn Sculpin	Whole Body	6	4	ND	NA	ND	ND	ND	ND
Great Sculpin	Whole Body	2	2	ND	NA	ND	ND	ND	ND
Kelp Greenling	Fillet	1	1	ND	NA	ND	ND	ND	ND
Kelp Greenling	Whole Body	18	17	ND	NA	ND	ND	ND	ND
Lingcod	Fillet	300	283	ND	NA	ND	ND	ND	ND
Longnose Skate	Fillet	114	112	ND	NA	ND	ND	ND	ND
Longnose Skate	Liver	20	20	ND	NA	ND	ND	ND	ND
Northernrock Sole	Fillet	20	17	ND	NA	ND	ND	ND	ND
Northernrock Sole	Whole Body	18	13	ND	NA	ND	ND	ND	ND
Pacific Cod	Fillet	192	147	ND	NA	ND	ND	ND	ND
Pacific Halibut	Fillet	2741	2589	ND	NA	ND	ND	ND	ND
Quillback Rockfish	Fillet	21	20	ND	NA	ND	ND	ND	ND
Rock Greenling	Whole Body	16	14	ND	NA	ND	ND	ND	ND
Rougeye Rockfish	Fillet	72	47	ND	NA	ND	ND	ND	ND
Sablefish	Fillet	313	281	ND	NA	ND	ND	ND	ND
Sablefish	Whole Body	3	3	ND	NA	ND	ND	ND	ND
Salmon Shark	Fillet	110	105	ND	NA	ND	ND	ND	ND
Shortraker Rockfish	Fillet	8	8	ND	NA	ND	ND	ND	ND
Silvergray Rockfish	Fillet	10	10	ND	NA	ND	ND	ND	ND
Sleeper Shark	Fillet	1	1	ND	NA	ND	ND	ND	ND
Southernrock Sole	Whole Body	1	1	ND	NA	ND	ND	ND	ND
Spiny Dogfish	Fillet	69	65	ND	NA	ND	ND	ND	ND
Starry Flounder	Fillet	1	1	ND	NA	ND	ND	ND	ND
Starry Flounder	C-Fillet	3	1	0.016	0.008	0.015	0.014	0.010	0.025
Starry Flounder	Whole Body	1	1	ND	NA	ND	ND	ND	ND
Tiger Rockfish	Fillet	1	1	ND	NA	ND	ND	ND	ND
Walleye Pollock	Fillet	190	160	ND	NA	ND	ND	ND	ND
Yelloweye Rockfish	Fillet	131	118	ND	NA	ND	ND	ND	ND
Yellowfin Sole	Fillet	33	31	ND	NA	ND	ND	ND	ND
Yellowtail Rockfish	Fillet	7	6	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 2: Lead 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	13	ND	NA	ND	ND	ND	ND
Arctic Char	Whole Body	10	10	ND	NA	ND	ND	ND	ND
Arctic Cisco	Fillet	21	21	ND	NA	ND	ND	ND	ND
Arctic Cisco	C-Fillet	1	1	ND	NA	ND	ND	ND	ND
Arctic Grayling	Fillet	46	46	ND	NA	ND	ND	ND	ND
Arctic Grayling	Whole Body	1	1	ND	NA	ND	ND	ND	ND
Arctic Grayling	C-Whole Body	5	5	ND	NA	ND	ND	ND	ND
Bering Cisco	Fillet	5	5	ND	NA	ND	ND	ND	ND
Broad Whitefish	Fillet	48	48	ND	NA	ND	ND	ND	ND
Chum Salmon	Fillet	280	236	ND	NA	ND	ND	ND	ND
Chum Salmon	Whole Body	2	2	ND	NA	ND	ND	ND	ND
Chum Salmon	C-Juvenile	1	0	0.057	NA	0.057	0.057	0.057	0.057
Coho Salmon	Fillet	319	304	ND	NA	ND	ND	ND	ND
Coho Salmon	Belly	10	10	ND	NA	ND	ND	ND	ND
Coho Salmon	Whole Body	61	57	ND	NA	ND	ND	ND	ND
Coho Salmon	Eggs	20	20	ND	NA	ND	ND	ND	ND
Coho Salmon	Testis	6	6	ND	NA	ND	ND	ND	ND
Coho Salmon	Fry Whole	22	22	ND	NA	ND	ND	ND	ND
Coho Salmon	C-Fry	7	7	ND	NA	ND	ND	ND	ND
Coho Salmon	Juvenile Whole	12	12	ND	NA	ND	ND	ND	ND
Coho Salmon	C-Juvenile	1	1	ND	NA	ND	ND	ND	ND
Dolly Varden	Fillet	63	51	ND	NA	ND	ND	ND	ND
Dolly Varden	C-Fillet	2	2	ND	NA	ND	ND	ND	ND
Dolly Varden	Whole Body	46	34	ND	NA	ND	ND	ND	ND
Humpback Whitefish	Fillet	109	108	ND	NA	ND	ND	ND	ND
Humpback Whitefish	Whole Body	24	23	ND	NA	ND	ND	ND	ND
King Salmon	Fillet	239	212	ND	NA	ND	ND	ND	ND
King Salmon	Whole Body	15	15	ND	NA	ND	ND	ND	ND
King Salmon	C-Fry	7	7	ND	NA	ND	ND	ND	ND
King Salmon	C-Juvenile	3	3	ND	NA	ND	ND	ND	ND
Lamprey	Whole Body	10	10	ND	NA	ND	ND	ND	ND
Least Cisco	Fillet	31	29	ND	NA	ND	ND	ND	ND
Least Cisco	Whole Body	1	1	ND	NA	ND	ND	ND	ND
Pink Salmon	Fillet	185	151	ND	NA	ND	ND	ND	ND
Pygmy Whitefish	Whole Body	1	1	ND	NA	ND	ND	ND	ND
Round Whitefish	Fillet	12	12	ND	NA	ND	ND	ND	ND
Sheefish	Fillet	44	18	ND	NA	0.025	ND	ND	0.110
Sheefish	Whole Body	5	5	ND	NA	ND	ND	ND	ND
Sheefish	Eggs	1	1	ND	NA	ND	ND	ND	ND
Sheefish	Testis	4	4	ND	NA	ND	ND	ND	ND
Sheefish	Liver	5	5	ND	NA	ND	ND	ND	ND
Sheefish	Kidney	20	5	ND	NA	0.025	ND	ND	0.025
Sockeye Salmon	Fillet	276	234	ND	NA	ND	ND	ND	ND
Sockeye Salmon	Whole Body	56	50	ND	NA	ND	ND	ND	ND
Sockeye Salmon	Eggs	2	2	ND	NA	ND	ND	ND	ND
Sockeye Salmon	C-Fry	3	3	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 3: Lead 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	3	ND	NA	ND	ND	ND	ND
Pacific Herring	C-Whole Body	11	11	ND	NA	ND	ND	ND	ND
Rainbow Smelt	Whole Body	10	10	ND	NA	ND	ND	ND	ND
Saffron Cod	C-Fillet	2	2	ND	NA	ND	ND	ND	ND
Saffron Cod	Whole Body	20	11	ND	NA	ND	ND	ND	ND
Sand Lance	C-Whole Body	1	1	ND	NA	ND	ND	ND	ND

Table 4: Lead in Marine Invertebrates

mg/Kg wet weight

Species	Tissue	n	Non Detect	A mean	SD	G mean	Median	Min	Max
Butter Clam	Invert Whole Tissue	5	1	0.065	0.035	0.058	0.056	0.025	0.120
Butter Clam	C-Invert Whole	1	0	0.110	NA	0.110	0.110	0.110	0.110
Chiton	Invert Whole Tissue	2	0	0.660	0.000	0.660	0.660	0.660	0.660
Cockle	Invert Whole Tissue	5	0	0.129	0.038	0.123	0.150	0.066	0.160
Cockle	C-Invert Whole	1	1	ND	NA	ND	ND	ND	ND
Decorator Crab	Invert Whole Tissue	1	0	0.640	NA	0.640	0.640	0.640	0.640
Dungeness Crab	Invert Whole Tissue	2	0	0.774	1.027	0.266	0.774	0.047	1.500
Geoduck	Invert Viscera	7	3	0.030	0.015	0.026	0.031	0.015	0.053
Hermit Crab	Invert Whole Tissue	1	1	ND	NA	ND	ND	ND	ND
Oysters	Invert Whole Tissue	16	5	0.039	0.022	0.033	0.034	0.015	0.077
Razor Clam	Invert Muscle	2	0	0.110	0.011	0.110	0.110	0.102	0.118
Ribbon Worm	Invert Whole Tissue	2	0	0.665	0.431	0.591	0.665	0.360	0.970
Scallop	Invert Whole Tissue	20	0	0.239	0.131	0.207	0.220	0.065	0.580
Softshell Clam	Invert Whole Tissue	3	0	0.192	0.103	0.173	0.180	0.096	0.300
Softshell Clam	C-Invert Whole	8	0	0.689	1.227	0.303	0.235	0.095	3.700
Squid	C-Invert Whole	5	1	0.515	0.648	0.227	0.220	0.025	1.600

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

Table 5: Lead in Freshwater Fish

mg/Kg wet weight

Species	Tissue	n	Non Detect	A mean	SD	G mean	Median	Min	Max
Burbot	Fillet	27	27	ND	NA	ND	ND	ND	ND
Lake Trout	Fillet	54	53	ND	NA	ND	ND	ND	ND
Lake Trout	Whole Body	33	33	ND	NA	ND	ND	ND	ND
Longnose Sucker	Fillet	3	3	ND	NA	ND	ND	ND	ND
Northern Pike	Fillet	337	304	ND	NA	ND	ND	ND	ND
Northern Pike	Whole Body	40	39	ND	NA	ND	ND	ND	ND
NS Stickleback	C-Whole Body	3	1	0.075	0.082	0.051	0.031	0.025	0.17
Rainbow Trout	Fillet	62	61	ND	NA	ND	ND	ND	ND
Rainbow Trout	Whole Body	11	10	ND	NA	ND	ND	ND	ND
Slimy Sculpin	Whole Body	59	46	ND	NA	ND	ND	ND	ND
Slimy Sculpin	C-Whole Body	10	10	ND	NA	ND	ND	ND	ND
TS Stickleback	C-Whole Body	4	1	0.096	0.066	0.075	0.094	0.025	0.17

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

NS = Ninespine, TS = Threespine