



Alaska Department of Environmental Conservation
Office of the State Veterinarian Fish Monitoring Program
5251 Dr. Martin Luther King Jr. Ave.
Anchorage, AK 99508
(907) 375-8200

Total Mercury in Fish and Shellfish Caught in Alaskan Waters

Fish Samples collected: 2001-2024

Concentration in mg/Kg wet weight

Non-detects were assigned the value of 1/2 the Reporting Limit

Visit the Fish Monitoring Program webpage for more information:

<http://www.dec.alaska.gov/eh/vet/fish-monitoring-program>

For State of Alaska fish consumption recommendations visit:

<https://health.alaska.gov/dph/Epi/eph/Pages/fish/default.aspx>

Table 1: Total Mercury in Marine Fish

Species	Tissue	n	ND	mg/Kg wet weight					
				Mean	SD	SEM	Median	Min	Max
Alaska Plaice	Fillet	32	0	0.036	0.022	0.004	0.027	0.015	0.123
Arctic Flounder	Whole Body	4	0	0.02	0.002	0.001	0.02	0.018	0.023
Arctic Sculpin	Whole Body	1	0	0.023	NA	NA	0.023	0.023	0.023
Arrowtooth Flounder	Fillet	14	6	0.01	0.005	0.001	0.011	0.004	0.018
Atka Mackerel	Fillet	4	0	0.075	0.031	0.015	0.064	0.052	0.119
Atka Mackerel	Whole Body	5	0	0.042	0.017	0.008	0.043	0.016	0.064
Big Skate	Fillet	112	0	0.137	0.085	0.008	0.11	0.017	0.48
Black Rockfish	Fillet	80	1	0.13	0.1	0.011	0.097	0.013	0.53
Black Rockfish	Whole Body	7	0	0.126	0.09	0.034	0.07	0.05	0.269
Blue Shark	Fillet	1	0	1.34	NA	NA	1.34	1.34	1.34
Butter Sole	Whole Body	1	0	0.051	NA	NA	0.051	0.051	0.051
China Rockfish	Fillet	1	0	0.37	NA	NA	0.37	0.37	0.37
Copper Rockfish	Fillet	4	0	0.18	0.098	0.049	0.16	0.09	0.31
Dusky Rockfish	Fillet	63	1	0.092	0.114	0.014	0.044	0.005	0.416
Dusky Rockfish	Whole Body	20	0	0.137	0.132	0.029	0.084	0.036	0.609
Flathead Sole	Fillet	15	0	0.057	0.023	0.006	0.057	0.023	0.096
Fourhorn Sculpin	Whole Body	6	0	0.051	0.022	0.009	0.053	0.023	0.072
Fourhorn Sculpin	C-Whole Body	1	0	0.014	NA	NA	0.014	0.014	0.014
Great Sculpin	Whole Body	2	0	0.068	0.001	0.001	0.068	0.068	0.069
Kelp Greenling	Fillet	1	0	0.108	NA	NA	0.108	0.108	0.108
Kelp Greenling	Whole Body	18	0	0.164	0.141	0.033	0.113	0.01	0.517
Lingcod	Fillet	288	0	0.442	0.286	0.017	0.39	0.029	1.672
Longnose Skate	Fillet	114	0	0.392	0.195	0.018	0.37	0.1	1
Northernrock Sole	Fillet	20	0	0.042	0.013	0.003	0.04	0.024	0.064
Northernrock Sole	Whole Body	19	0	0.056	0.032	0.007	0.06	0.013	0.135
Pacific Cod	Fillet	234	2	0.102	0.086	0.006	0.078	0.013	0.496
Pacific Halibut	Fillet	3636	7	0.291	0.276	0.005	0.197	0.013	2.27
Pacific Ocean Pearch	Fillet	78	32	0.056	0.054	0.006	0.04	0.013	0.262
Quillback Rockfish	Fillet	21	0	0.413	0.205	0.045	0.41	0.099	1
Red Irish Lord	Fillet	1	0	0.068	NA	NA	0.068	0.068	0.068
Red Irish Lord	Whole Body	12	0	0.06	0.017	0.005	0.054	0.041	0.098
Rock Greenling	Whole Body	16	0	0.118	0.079	0.02	0.082	0.051	0.321
Rougheye Rockfish	Fillet	74	0	0.107	0.135	0.016	0.061	0.021	0.87
Sablefish	Fillet	410	28	0.195	0.265	0.013	0.099	0.003	2.44
Sablefish	Whole Body	3	0	0.145	0.099	0.057	0.089	0.087	0.26
Salmon Shark	Fillet	97	0	1.366	0.294	0.03	1.319	0.758	2.074
Shorthorn Sculpin	Fillet	1	0	0.195	NA	NA	0.195	0.195	0.195
Shorthorn Sculpin	Whole Body	1	0	0.108	NA	NA	0.108	0.108	0.108
Shortraker Rockfish	Fillet	8	0	0.537	0.13	0.046	0.525	0.39	0.81
Silvergray Rockfish	Fillet	10	1	0.111	0.122	0.039	0.071	0.013	0.425

Table 1: Total Mercury in Marine Fish (*continued*)

Species	Tissue	n	ND	mg/Kg wet weight					
				Mean	SD	SEM	Median	Min	Max
Sleeper Shark	Fillet	1	0	0.89	NA	NA	0.89	0.89	0.89
Southernrock Sole	Whole Body	1	1	ND	NA	NA	ND	0.005	0.005
Spiny Dogfish	Fillet	66	0	0.7	0.281	0.035	0.725	0.095	1.34
Starry Flounder	Fillet	1	0	0.077	NA	NA	0.077	0.077	0.077
Starry Flounder	Whole Body	1	0	0.062	NA	NA	0.062	0.062	0.062
Starry Flounder	C-Whole Body	3	0	0.028	0.021	0.012	0.017	0.016	0.052
Walleye Pollock	Fillet	284	174	ND	NA	NA	ND	0.002	0.389
Yellow Irish Lord	Fillet	2	0	0.517	0.206	0.146	0.517	0.371	0.662
Yellow Irish Lord	Whole Body	10	0	0.167	0.113	0.036	0.131	0.049	0.443
Yelloweye Rockfish	Fillet	117	1	0.535	0.31	0.029	0.474	0.005	1.327
Yellowfin Sole	Fillet	44	0	0.056	0.023	0.003	0.05	0.015	0.115
Yellowtail Rockfish	Fillet	7	0	0.062	0.022	0.008	0.072	0.029	0.083

Note:

n= sample size

ND = non-detect

Mean = arithmetic mean

SD = standard deviation

SEM = standard error

C = Composite of multiple individuals

Reporting limits: As, Cd, Cu, Pb = 0.05 mg/Kg; Se = 0.25 mg/Kg; Hg = 0.01 mg/Kg

Table 2: Total Mercury Pacific Halibut by Size Class

WeightClass	n	ND	mg/Kg wet weight					
			Mean	SD	SEM	Median	Min	Max
<20 lbs	1011	5	0.161	0.139	0.004	0.12	0.013	1.21
20-40 lbs	1101	1	0.245	0.225	0.007	0.172	0.013	2.27
40-60 lbs	830	1	0.347	0.271	0.009	0.25	0.013	1.947
60-80 lbs	333	0	0.433	0.333	0.018	0.324	0.024	1.754
80-100 lbs	139	0	0.519	0.379	0.032	0.37	0.11	2
100-120 lbs	73	0	0.557	0.369	0.043	0.45	0.084	1.7
120-140 lbs	31	0	0.717	0.452	0.081	0.499	0.079	1.6
140-160 lbs	25	0	0.751	0.425	0.085	0.607	0.191	1.47
160-180 lbs	5	0	0.599	0.241	0.108	0.619	0.279	0.939
180-200 lbs	13	0	0.85	0.426	0.118	0.65	0.308	1.64
200-220 lbs	5	0	0.703	0.305	0.136	0.581	0.527	1.245
220-240 lbs	1	0	1.18	NA	NA	1.18	1.18	1.18
260-280 lbs	1	0	0.567	NA	NA	0.567	0.567	0.567
280-300 lbs	2	0	1.116	0.287	0.203	1.116	0.914	1.319
300-320 lbs	1	0	1.224	NA	NA	1.224	1.224	1.224
>320 lbs	1	0	1.059	NA	NA	1.059	1.059	1.059

Note:

n= sample size

ND = non-detect

Mean = arithmetic mean

SD = standard deviation

SEM = standard error

Reporting limits: Hg = 0.01 mg/Kg

Table 3: Total Mercury in Salmonids (Salmon, Whitefish, Grayling, Char)

Species	Tissue	n	ND	mg/Kg wet weight					
				Mean	SD	SEM	Median	Min	Max
Arctic Char	Fillet	30	0	0.068	0.066	0.012	0.038	0.015	0.25
Arctic Char	Whole Body	10	0	0.03	0.013	0.004	0.027	0.018	0.064
Arctic Cisco	Fillet	25	0	0.019	0.003	0.001	0.018	0.011	0.025
Arctic Cisco	Whole Body	1	0	0.018	NA	NA	0.018	0.018	0.018
Arctic Grayling	Fillet	120	0	0.086	0.05	0.005	0.071	0.025	0.325
Arctic Grayling	Whole Body	4	1	0.059	0.075	0.037	0.031	0.004	0.169
Arctic Grayling	C-Whole Body	11	0	0.052	0.03	0.009	0.058	0.014	0.104
Bering Cisco	Fillet	5	0	0.065	0.015	0.007	0.064	0.046	0.087
Broad Whitefish	Fillet	52	2	0.057	0.036	0.005	0.057	0.005	0.21
Chinook Salmon	Fillet	270	2	0.062	0.025	0.002	0.06	0.013	0.159
Chinook Salmon	Whole Body	21	0	0.045	0.017	0.004	0.043	0.02	0.09
Chum Salmon	Fillet	347	10	0.039	0.014	0.001	0.037	0.013	0.103
Chum Salmon	Whole Body	2	2	ND	NA	NA	ND	0.013	0.013
Coho Salmon	Fillet	364	25	0.042	0.031	0.002	0.039	0.013	0.354
Coho Salmon	Whole Body	64	0	0.034	0.009	0.001	0.032	0.014	0.061
Coho Salmon	Eggs	20	19	ND	NA	NA	ND	0.003	0.013
Coho Salmon	C-Whole Body	2	0	0.023	0.013	0.009	0.023	0.014	0.032
Cutthroat Trout	Whole Body	7	0	0.118	0.054	0.02	0.095	0.073	0.227
Dolly Varden	Fillet	65	1	0.065	0.103	0.013	0.026	0.004	0.548
Dolly Varden	Whole Body	49	2	0.038	0.029	0.004	0.025	0.004	0.14
Humpback Whitefish	Fillet	110	1	0.065	0.033	0.003	0.062	0.004	0.18
Humpback Whitefish	Whole Body	24	0	0.048	0.025	0.005	0.044	0.012	0.12
Lake Trout	Fillet	55	0	0.352	0.181	0.024	0.32	0.064	0.74
Lake Trout	Whole Body	33	0	0.271	0.133	0.023	0.27	0.059	0.54
Least Cisco	Fillet	42	0	0.067	0.037	0.006	0.058	0.021	0.209
Least Cisco	Whole Body	1	0	0.014	NA	NA	0.014	0.014	0.014
Pink Salmon	Fillet	226	104	0.036	0.063	0.004	0.016	0.013	0.36
Pygmy Whitefish	Whole Body	1	0	0.043	NA	NA	0.043	0.043	0.043
Rainbow Trout	Fillet	137	10	0.076	0.078	0.007	0.042	0.002	0.361
Rainbow Trout	Whole Body	11	0	0.163	0.042	0.013	0.16	0.11	0.25
Round Whitefish	Fillet	14	1	0.079	0.054	0.014	0.076	0.004	0.2
Round Whitefish	Whole Body	1	0	0.02	NA	NA	0.02	0.02	0.02
Sheefish	Fillet	44	0	0.138	0.048	0.007	0.13	0.061	0.262
Sheefish	Whole Body	5	0	0.091	0.033	0.015	0.088	0.041	0.13
Sheefish	Eggs	1	0	0.015	NA	NA	0.015	0.015	0.015
Sockeye Salmon	Fillet	364	27	0.04	0.027	0.001	0.037	0.013	0.304
Sockeye Salmon	Whole Body	56	0	0.033	0.009	0.001	0.033	0.012	0.055
Sockeye Salmon	Eggs	2	1	ND	NA	NA	ND	0.005	0.01
Sockeye Salmon	C-Whole Body	1	0	0.094	NA	NA	0.094	0.094	0.094

Table 3: Total Mercury in Salmonids (Salmon, Whitefish, Grayling, Char) (*continued*)

Species	Tissue	n	ND	mg/Kg wet weight					
				Mean	SD	SEM	Median	Min	Max

Note:

n= sample size

ND = non-detect

Mean = arithmetic mean

SD = standard deviation

SEM = standard error

C = Composite of multiple individuals

Reporting limits: As, Cd, Cu, Pb = 0.05 mg/Kg; Se = 0.25 mg/Kg; Hg = 0.01 mg/Kg

Table 4: Total Mercury in Marine Forage Fish

Species	Tissue	n	ND	mg/Kg wet weight					
				Mean	SD	SEM	Median	Min	Max
Capelin	C-Whole Body	1	1	ND	NA	NA	ND	0.005	0.005
Eulachon	C-Whole Body	7	7	ND	NA	NA	ND	0.005	0.005
Pacific Herring	Fillet	40	0	0.064	0.032	0.005	0.073	0.011	0.113
Pacific Herring	Eggs	1	1	ND	NA	NA	ND	0.003	0.003
Pacific Herring	C-Whole Body	16	1	0.025	0.015	0.004	0.018	0.005	0.057
Rainbow Smelt	Whole Body	13	1	0.04	0.073	0.02	0.023	0.005	0.283
Rainbow Smelt	C-Whole Body	2	0	0.056	0.06	0.042	0.056	0.014	0.098
Saffron Cod	Whole Body	22	0	0.023	0.008	0.002	0.021	0.012	0.04
Sand Lance	C-Whole Body	2	1	ND	NA	NA	ND	0.003	0.124

Note:

n= sample size

ND = non-detect

Mean = arithmetic mean

SD = standard deviation

SEM = standard error

C = Composite of multiple individuals

Reporting limits: As, Cd, Cu, Pb = 0.05 mg/Kg; Se = 0.25 mg/Kg; Hg = 0.01 mg/Kg

Table 5: Total Mercury in Marine Invertebrates

Species	Tissue	n	ND	mg/Kg wet weight					
				Mean	SD	SEM	Median	Min	Max
Bairdi Crab	Comp	3	0	0.103	0.017	0.01	0.103	0.086	0.12
Bairdi Crab	Invert Muscle	40	0	0.097	0.02	0.003	0.096	0.058	0.148
Blue Mussel	Invert Whole Tissue	6	1	0.013	0.006	0.003	0.014	0.003	0.023
Blue Mussel	C-Invert Whole	62	12	0.025	0.027	0.003	0.014	0.002	0.13
Butter Clam	Invert Whole Tissue	5	4	ND	NA	NA	ND	0.003	0.011
Butter Clam	C-Invert Whole	4	4	ND	NA	NA	ND	0.002	0.005
Chiton	Invert Whole Tissue	2	0	0.012	0.001	0.001	0.012	0.011	0.013
Cockle	Invert Whole Tissue	5	0	0.019	0.007	0.003	0.02	0.011	0.028
Cockle	C-Invert Whole	16	15	ND	NA	NA	ND	0.002	0.126
Coonstriped Shrimp	C-Invert Whole	2	0	0.033	0.003	0.002	0.033	0.031	0.035
Decorator Crab	Invert Whole Tissue	1	0	0.021	NA	NA	0.021	0.021	0.021
Dungeness Crab	Invert Whole Tissue	2	0	0.028	0.005	0.003	0.028	0.025	0.032
Golden King Crab	Invert Muscle	2	0	0.035	0.003	0.002	0.035	0.033	0.037
Hairytriton Snail	Invert Whole Tissue	1	0	0.11	NA	NA	0.11	0.11	0.11
Hermit Crab	Invert Whole Tissue	1	1	ND	NA	NA	ND	0.005	0.005
Horse Clam	C-Invert Whole	1	1	ND	NA	NA	ND	0.004	0.004
Little Neck Clam	Invert Whole Tissue	4	1	0.01	0.005	0.002	0.012	0.004	0.014
Little Neck Clam	C-Invert Whole	2	1	ND	NA	NA	ND	0.004	0.14
Macoma Clam	C-Invert Whole	1	0	0.014	NA	NA	0.014	0.014	0.014
Neptunea hero	Invert Whole Tissue	3	1	0.016	0.016	0.009	0.011	0.004	0.034
Opilio Crab	Comp	1	0	0.047	NA	NA	0.047	0.047	0.047
Opilio Crab	Invert Muscle	27	0	0.038	0.016	0.003	0.036	0.017	0.079
Oysters	Invert Whole Tissue	16	4	0.012	0.006	0.002	0.01	0.003	0.023
Pacific Octopus	Invert Whole Tissue	6	1	0.015	0.006	0.002	0.016	0.004	0.021
Razor Clam	Invert Muscle	2	2	ND	NA	NA	ND	0.004	0.004
Red King Crab	Comp	1	0	0.028	NA	NA	0.028	0.028	0.028
Red King Crab	Invert Muscle	20	0	0.028	0.009	0.002	0.026	0.016	0.045
Ribbon Worm	Invert Whole Tissue	4	0	0.041	0.019	0.009	0.042	0.018	0.06
Ribbon Worm	C-Invert Whole	1	0	0.036	NA	NA	0.036	0.036	0.036
Scallop	Invert Whole Tissue	20	0	0.032	0.006	0.001	0.032	0.016	0.042
Sea Cucumber	Invert Whole Tissue	3	1	0.028	0.021	0.012	0.04	0.004	0.041
Softshell Clam	Invert Whole Tissue	8	1	0.015	0.009	0.003	0.013	0.004	0.034
Softshell Clam	C-Invert Whole	10	0	0.052	0.049	0.015	0.025	0.015	0.139
Squid	C-Invert Whole	5	5	ND	NA	NA	ND	0.005	0.005

Note:

n= sample size

ND = non-detect

Mean = arithmetic mean

SD = standard deviation

SEM = standard error

C = Composite of multiple individuals

Reporting limits: As, Cd, Cu, Pb = 0.05 mg/Kg; Se = 0.25 mg/Kg; Hg = 0.01 mg/Kg

Table 6: Total Mercury in Freshwater Fishes

Species	Tissue	n	ND	mg/Kg wet weight					
				Mean	SD	SEM	Median	Min	Max
Alaska Blackfish	Whole Body	3	0	0.022	0.006	0.004	0.022	0.015	0.028
Alaska Blackfish	C-Whole Body	3	0	0.024	0.011	0.006	0.025	0.013	0.035
Burbot	Fillet	58	1	0.275	0.218	0.029	0.204	0.013	0.854
Lamprey	Whole Body	10	0	0.028	0.007	0.002	0.028	0.018	0.04
Longnose Sucker	Fillet	3	0	0.071	0.012	0.007	0.073	0.059	0.082
Longnose Sucker	Whole Body	2	0	0.053	0.01	0.007	0.053	0.046	0.06
Northern Pike	Fillet	777	2	0.341	0.275	0.01	0.25	0.004	1.357
Northern Pike	Whole Body	40	0	0.149	0.069	0.011	0.155	0.053	0.34
NS Stickleback	C-Whole Body	13	0	0.032	0.027	0.008	0.015	0.013	0.09
Slimy Sculpin	Whole Body	67	1	0.029	0.017	0.002	0.024	0.005	0.088
Slimy Sculpin	C-Whole Body	15	0	0.069	0.061	0.016	0.055	0.014	0.252
TS Stickleback	Whole Body	13	0	0.071	0.02	0.006	0.069	0.039	0.106
TS Stickleback	C-Whole Body	8	0	0.139	0.097	0.034	0.112	0.033	0.28

Note:

n= sample size

ND = non-detect

Mean = arithmetic mean

SD = standard deviation

SEM = standard error

C = Composite of multiple individuals

Reporting limits: As, Cd, Cu, Pb = 0.05 mg/Kg; Se = 0.25 mg/Kg; Hg = 0.01 mg/Kg

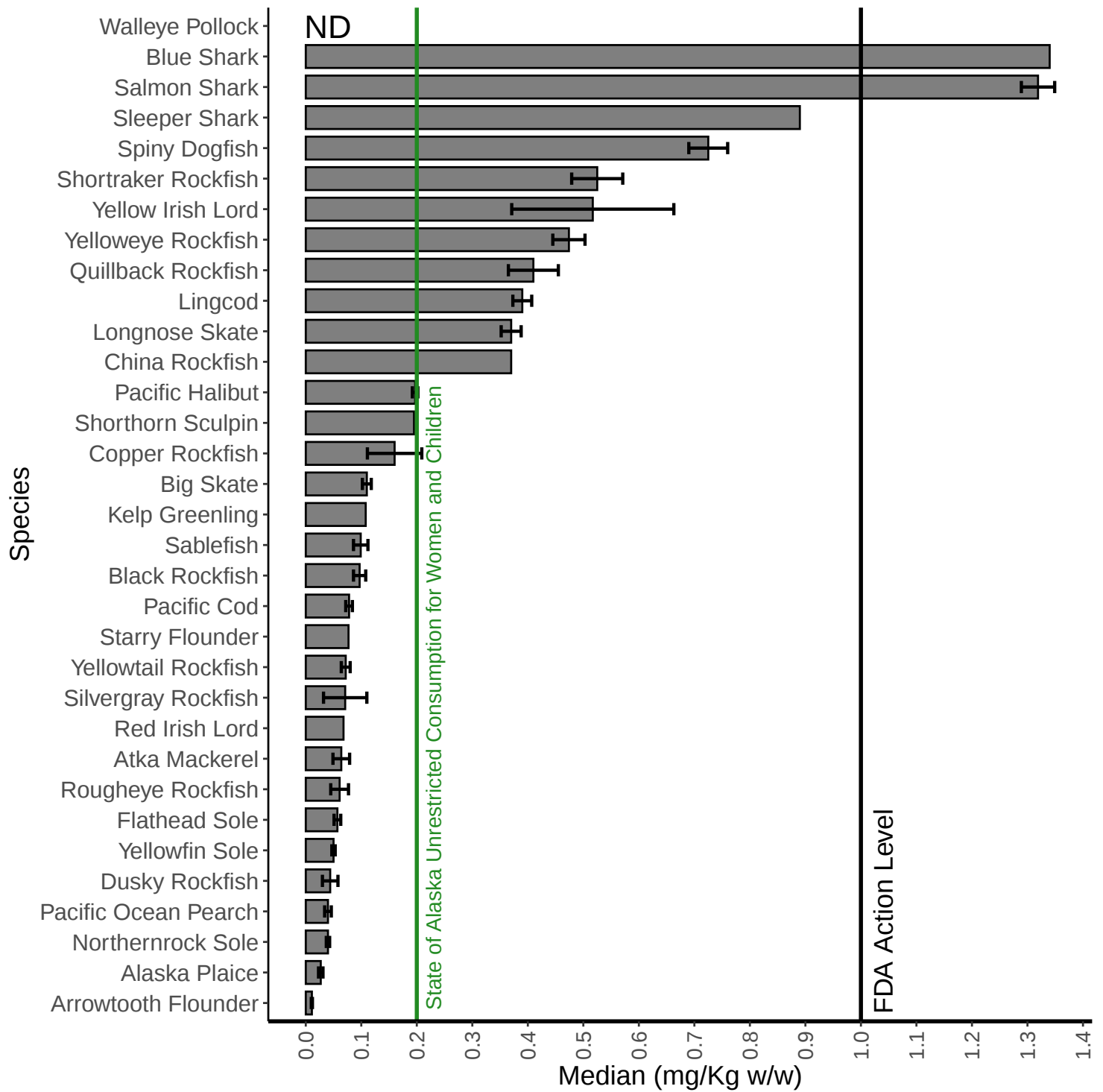


Figure 1: Marine Fish

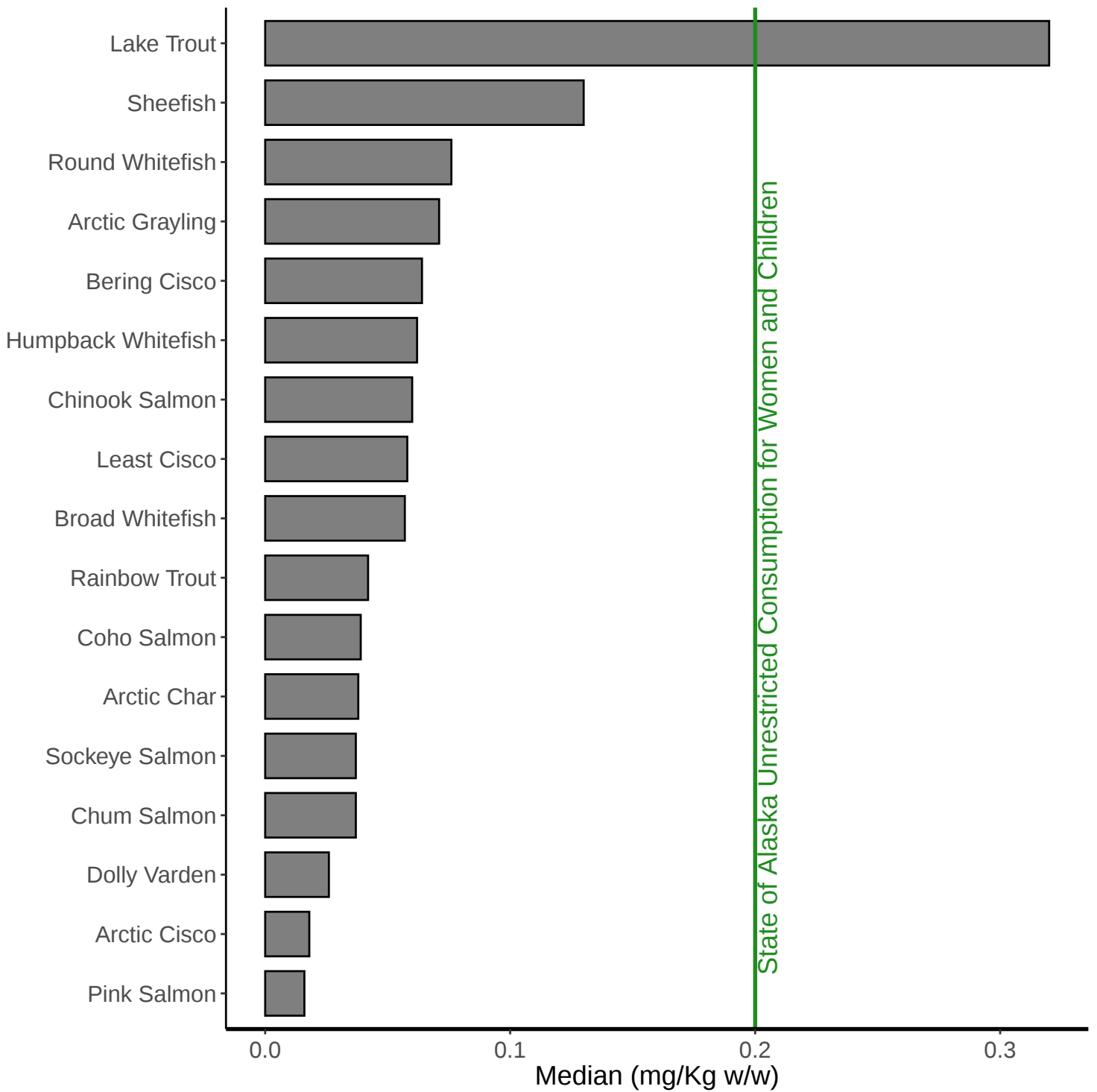


Figure 2: Salmon

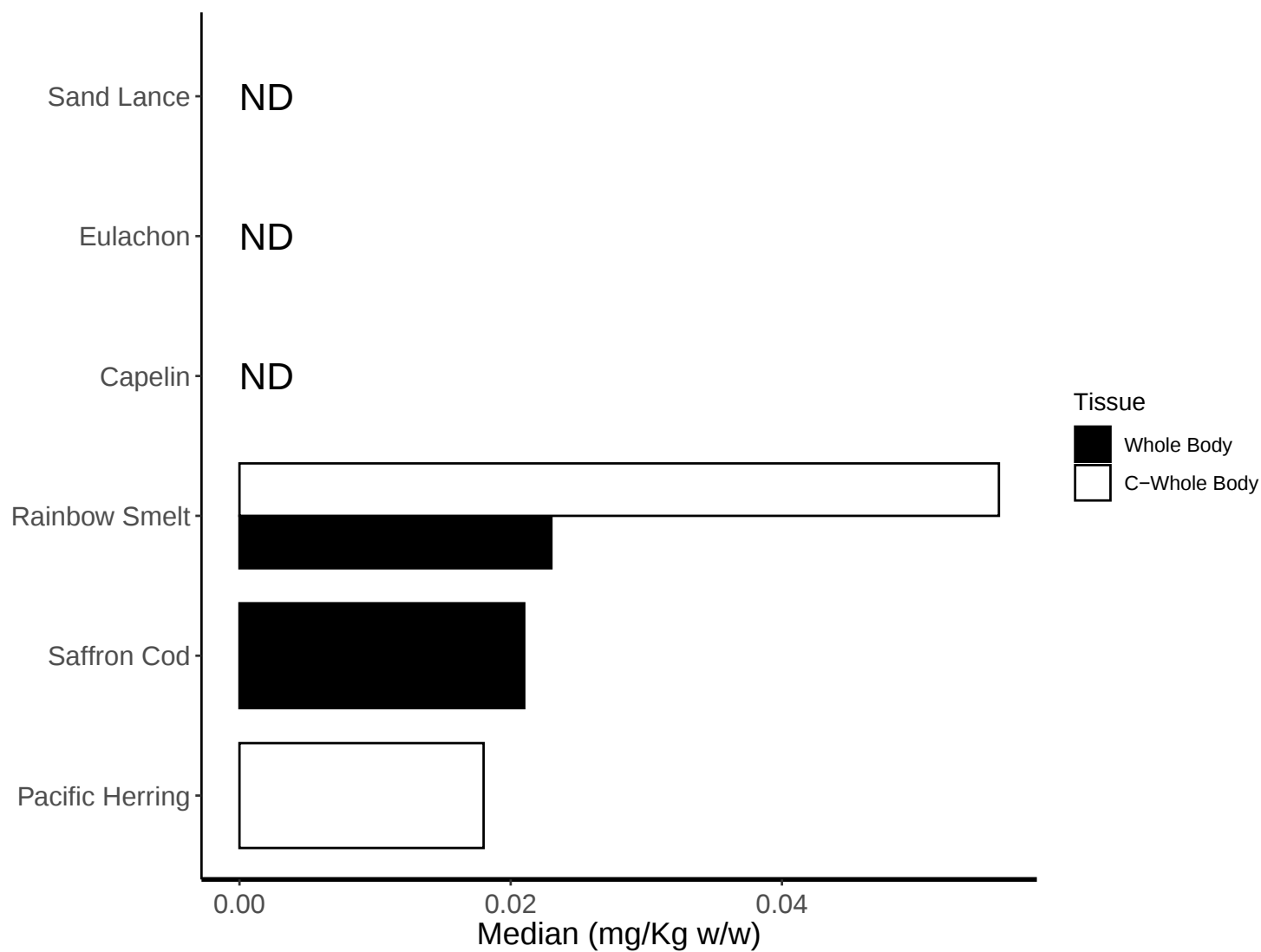


Figure 3: Forage Fish

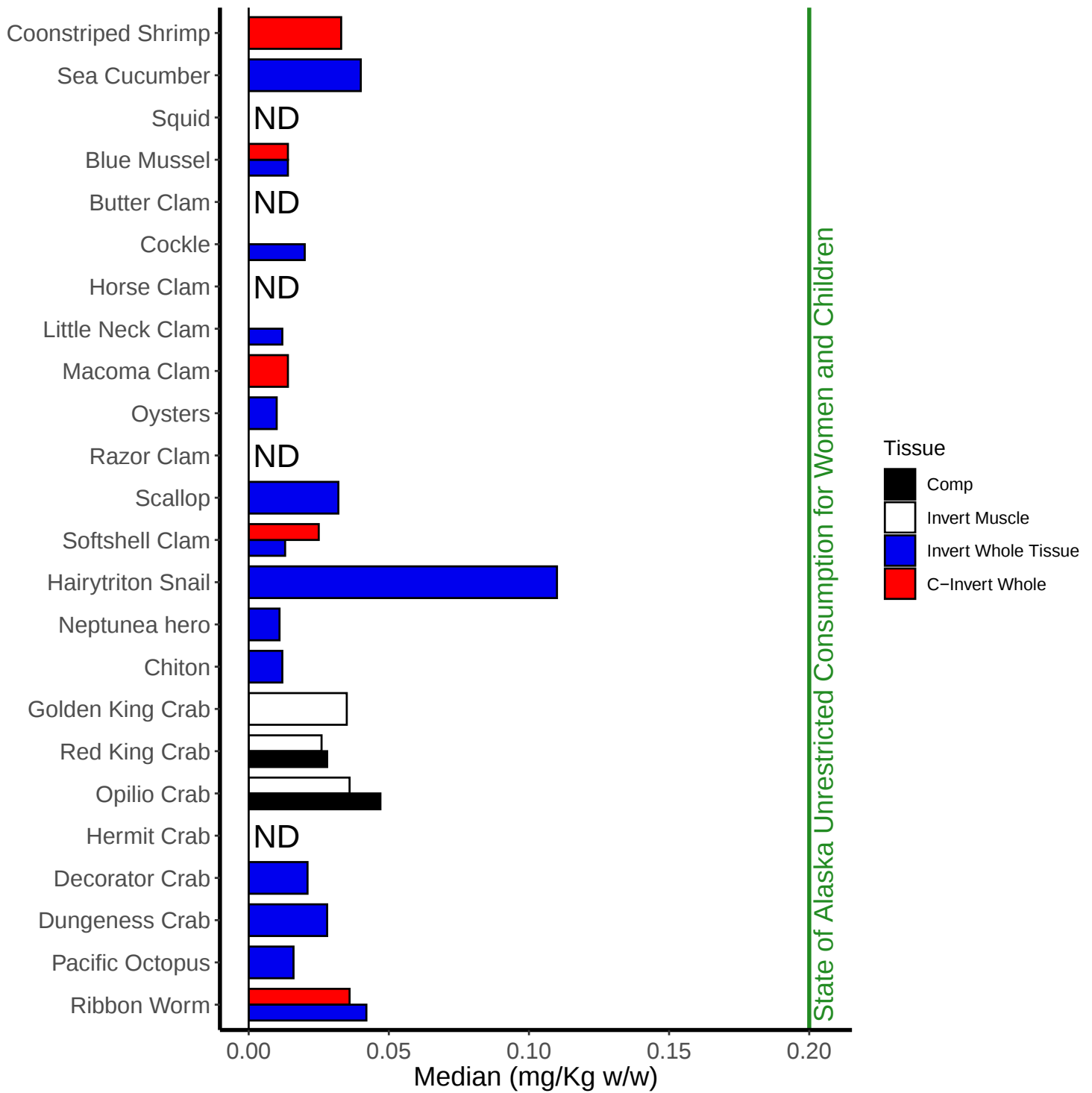


Figure 4: Marine Inverts

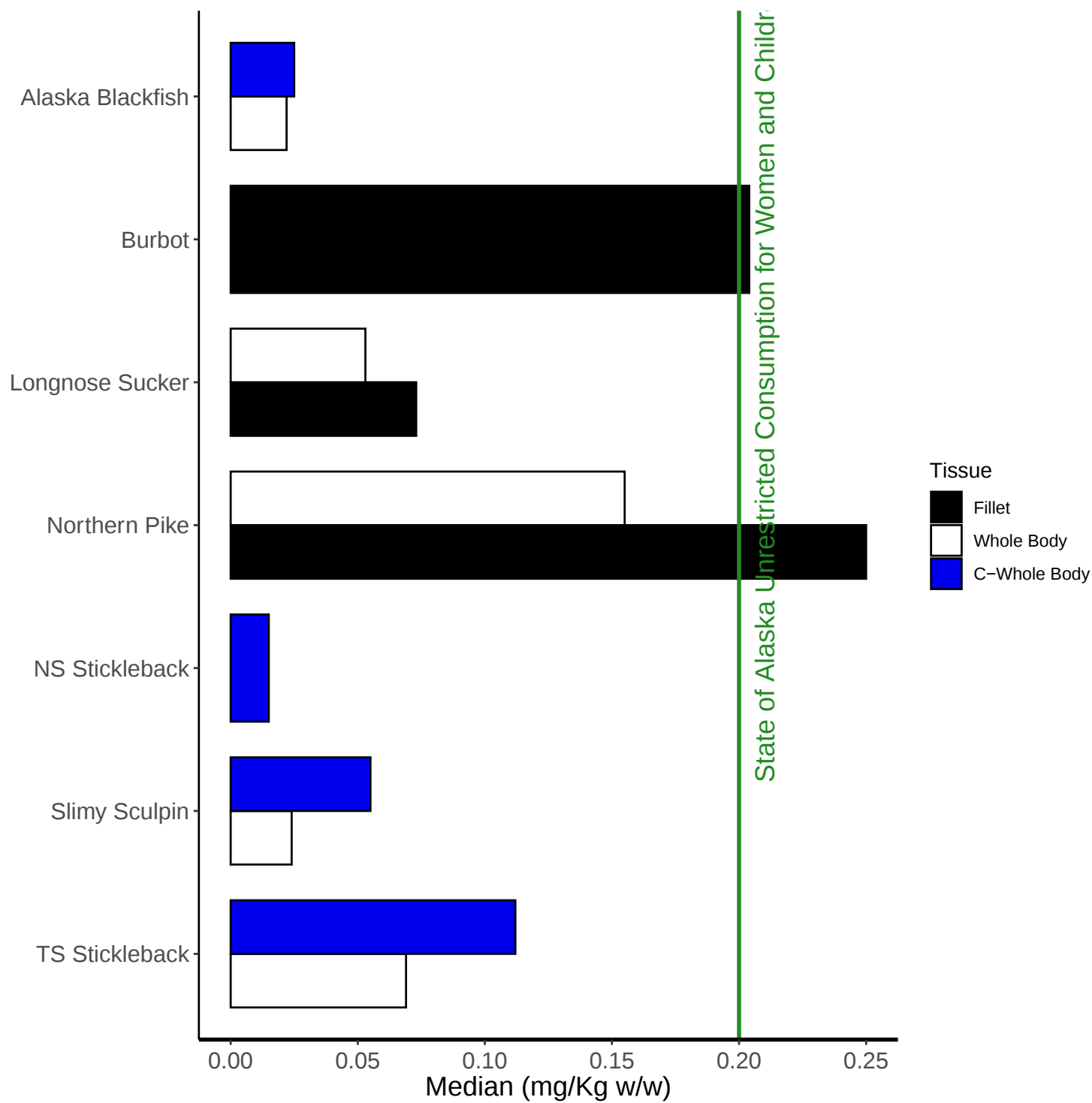


Figure 5: Freshwater Fish