

Results of Radioactive Material Monitoring of Aquatic Organisms (Location H in Lake Akimoto)

<Location H in Lake Akimoto: Samples collected>

Locations	General items		Radioactive materials			
	Water	Sediment	Water (Cs)	Water (Sr)	Sediment (Cs)	Sediment (Sr)
H-1	○	○	○	○	○	○

<Location H in Lake Akimoto: Site measurement item>

Locations	Latitude and longitude of the location		Survey date and time			Water	Sediment				Other	
	Latitude	Longitude	Date	Time (water)	Time (sediment)	Water temperature (degrees C)	Sediment temperature (degrees C)	Property	Color	Contaminants	Water depth (m)	Secchi disk depth (m)
H-1(Surface layer)	37.6575°	140.1264°	2017/6/20	08:15	08:30	17.0	9.6	Ooze	7.5Y 4/1	Plant pieces	13.0	4.0
H-1(Bottom layer)						13.6						

<Location H in Lake Akimoto: General survey items/Analysis of radioactive materials Water>

Locations	Latitude and longitude of the location		Survey date and time		pH	BOD (mg/L)	COD (mg/L)	DO (mg/L)	Electric conductivity (mS/m)	Salinity	TOC (mg/L)	SS (mg/L)	Turbidity (FNU)	Cs-134 (Bq/L)	Cs-137 (Bq/L)	Sr-90 (Bq/L)
	Latitude	Longitude	Date	Time (water)												
H-1(Surface layer)	37.6575°	140.1264°	2017/6/20	08:15	7.4	0.7	2.4	9.3	3.7	0.03	1.2	1	1.3	0.0016	0.010	-
H-1(Bottom layer)					7.1	0.8	2.5	10.3	3.8	0.03	1.2	1	1.3	N.D.(0.0012)	0.0069	0.0013

Note) N.D. means to be below the detection limit and figures in parentheses show the detection limit.

<Location H in Lake Akimoto: General survey items/Analysis of radioactive materials Sediment>

Locations	Latitude and longitude of the location		Survey date and time		pH	Redox potential E _{NH/E} (mV)	Water content (%)	IL (%)	TOC (mg/g-dry)	Soil particle density (g/cm ³)	Grain size distribution								Cs-134 (Bq/kg-dry)	Cs-137 (Bq/kg-dry)	Sr-90 (Bq/kg-dry)
	Latitude	Longitude	Date	Time (sediment)							Gravel (2-75mm) (%)	Coarse sand (0.85-2mm) (%)	Medium sand (0.25-0.85mm) (%)	Fine sand (0.075-0.25mm) (%)	Silt (0.005-0.075mm) (%)	Clay (Less than 0.005mm) (%)	Median grain diameter (mm)	Maximum grain diameter (mm)			
H-1	37.6575°	140.1264°	2017/6/20	08:30	7.0	109	66.3	8.2	24.3	2.578	0.0	0.0	0.1	0.5	50.6	48.8	0.0053	2.0	59	420	1.4

Note) N.D. means to be below the detection limit and figures in parentheses show the detection limit.

<Location H in Lake Akimoto: Analysis items Aquatic organisms>

Locations	Sampling point	Latitude and longitude of the location		Sampling date	Division	Class	Order	Family	Scientific name	English name	Population	Sample weight (kg-wet)	Note			Radioactive cesium (Bq/kg-wet)			Sr-90 (Bq/kg-wet)	
		Latitude	Longitude										Growth stage	Stomach contents	Measurement site	Total	Cs-134	Cs-137		
H-1 H-2 H-3	In the lake	37.6575° 37.6616° 37.6653°	140.1264° 140.1226° 140.1329°	2017/6/20	Arthropoda	Malacostraca	Decapoda	Astacidae	<i>Pacifastacus leniusculus trowbridgii</i>	Signal crayfish	14	1.1	Imago	-	-	-	33.4	3.4	30	7.2
					Arthropoda	Malacostraca	Decapoda	Atyidae	<i>Paratya improvisa</i>	Freshwater shrimp	81	0.0089	Juvenile, Imago	-	-	-	17	N.D.(5.2)	17	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	16	2.7	Mature fish	Obscure digesta	Viscera removed	41.9	4.9	37	0.80	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius auratus</i>	<i>Carassius auratus langsdorffii</i>	5	0.78	Mature fish	Obscure digesta	Viscera removed	36.1	4.1	32	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Cyprinus carpio</i>	Common carp	1	2.9	Mature fish	Empty stomach	Viscera removed	13.8	1.8	12	0.82	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Hemibarbus barbus</i>	Hemibarbus barbus	2	1.7	Mature fish	Empty stomach	Viscera removed	16.5	1.5	15	1.4	
					Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Hypomesus nipponensis</i>	Japanese smelt	126	0.24	Immature fish, Mature fish	-	-	-	29.4	3.4	26	-
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Salvelinus leucomaenis</i>	Char	5	1.5	Mature fish	Japanese smelt	Viscera removed	55.2	6.2	49	0.38	
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Seema	2	0.34	Immature fish	Bee	Viscera removed	20.3	2.3	18	-	
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	9	3.6	Immature fish, Mature fish	Japanese smelt, Signal crayfish	Viscera removed	73.6	7.6	66	1.1	
H-3	Inflowing rivers	37.6653°	140.1329°	2017/6/20	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.0077	-	-	-	46.4	5.4	41	-	
					Arthropoda	Insecta	Ephemeroptera	Ephemereillidae	<i>Drunella basalis</i>	<i>Drunella basalis</i>	150	0.011	Larva	-	-	-	22	N.D.(2.9)	22	-
					Arthropoda	Insecta	Ephemeroptera	Ephemereillidae	<i>Drunella trispina</i>	<i>Drunella trispina</i>										
					Arthropoda	Insecta	Plecoptera	Perlidae	<i>Acroeuria sp.</i>	<i>Acroeuria sp.</i>	161	0.041	Larva	-	-	-	N.D.	N.D.(1.1)	N.D.(1.1)	-
					Arthropoda	Insecta	Plecoptera	Perlidae	<i>Calineuria sp.</i>	<i>Calineuria sp.</i>										
					Arthropoda	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche sauteri</i>	<i>Parastenopsyche sauteri</i>	60	0.029	Larva	-	-	-	14.5	2.5	12	-
					Arthropoda	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	<i>Stenopsyche marmorata</i>										
					Vertebrata	Osteichthyes	Scorpaeniformes	Cottidae	<i>Cottus pollux</i>	Japanese fluvial sculpin	46	0.16	Immature fish	-	-	-	7.43	0.73	6.7	-
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Salvelinus leucomaenis</i>	Char	3	0.051	Immature fish	-	-	-	10.2	1.2	9.0	-
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Yamame trout	6	0.030	Immature fish	-	-	-	8.4	N.D.(1.4)	8.4	-
					Vertebrata	Amphibia	Anura	Rhacophoridae	<i>Buergeria buergeri</i>	Kajika frog	4	0.016	Imago	-	-	-	25.8	4.8	21	-
					Coarse Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.22	-	-	-	-	9.31	0.91	8.4	-
					H-4	Within the lake and rivers in the vicinity	37.6551°	140.1181°	2017/6/19	Algae/plant	-	-	-	-	Plankton (Planktonic algae)	-	0.018	-	-	-
Arthropoda	Insecta	Odonata	Cordulegastriidae	<i>Anotogaster sieboldii</i>						<i>Anotogaster sieboldii</i>	22	0.021	Larva (Dragonfly larva)	-	-	-	12.8	1.8	11	-
Mollusca	Gastropoda	Discopoda	Pleuroceridae	<i>Semisulcospira libertina</i>						<i>Semisulcospira libertina</i>	30	0.024	Imago	-	-	-	11	N.D.(2.1)	11	-
Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Phoxinus lagowskii steindachneri</i>						Amur Minnow	12	0.030	Immature fish, Mature fish	-	-	-	4.5	N.D.(1.6)	4.5	-
Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Salvelinus leucomaenis</i>						Char	2	0.079	Immature fish	-	-	-	3.0	N.D.(1.4)	3.0	-
Vertebrata	Amphibia	Anura	Ranidae	<i>Rana rugosa</i>						Wrinkled Frog	4	0.044	Imago	-	-	-	17.1	2.1	15	-
Vertebrata	Amphibia	Anura	Ranidae	<i>Rana ornativentris</i>						Montane brown frog										
Vertebrata	Amphibia	Caudata	Salamandridae	<i>Cynops pyrrhogaster</i>	<i>Cynops pyrrhogaster</i>	2	0.0080	Imago	-	-	-	4.8	N.D.(4.0)	4.8	-					

*1: Organisms were collected in or around the targeted water areas.

*2: When multiple types of aquatic organisms were collected, a sample was prepared by mixing them.

*3: For a sample made of multiple types of aquatic organisms, the English name of the dominant one largest in number is underlined.

*4: Basically, measurement was conducted for all organism samples. Viscera (stomach and bowels) were removed for the measurement when possible so that undigested food and sediments, etc. in the digestive system would be excluded.

*5: Plankton (suspended algae) is the residue remaining after the filtration of lake water or seawater with a plankton net (40µm-mesh).

*6: River bottom materials (incl. algae) are algae, etc. that were scratched off stones with a brush, etc. and may include very fine particles such as inorganic silt and clay.

*7: N.D. means to be below the detection limit and figures in parentheses show the detection limit.

*8: Activity concentrations include counting errors, but the details are omitted here.