

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

<Location H in Lake Akimoto: Samples collected>

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

<Location H in Lake Akimoto: Site measurement item>

Items	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°	2019/6/8	08:35	09:06	18.6	10.1	Ooze	7.5Y 4/2	Plant pieces	13.0	3.0
H-1(Bottom layer)						10.6						

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

Items	Latitude and longitude of the location		Survey date and time		pH	BOD	COD	DO	Electric conductivity	Salinity	TOC	SS	Turbidity	Cs-134	Cs-137	Sr-90
	Latitude	Longitude	Date	Time (water)		(mg/L)	(mg/L)	(mg/L)	(mS/m)		(mg/L)	(mg/L)	(FNU)	(Bq/L)	(Bq/L)	(Bq/L)
H-1(Surface layer)	37.6575°	140.1264°	2019/6/8	08:35	7.2	0.6	3.4	9.3	3.9	0.03	1.4	<1	1.1	N.D.(0.0015)	0.0039	-
H-1(Bottom layer)					6.9	0.6	3.5	10.3	4.0	0.03	1.9	1	1.3	N.D.(0.0018)	0.0095	0.0012

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>

Items	Latitude and longitude of the location		Survey date and time		pH	Redox potential E _{NHE} (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°	2019/6/8	09:06	6.9	31	66.0	8.9	27.7	2.552	0.0	0.0	0.1	0.4	56.7	42.8	0.0067	4.8	89	1200	1.3

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°	2019/6/8	Algae/plant	-	-	-	-	Plankton (Planktonic algae)	-	0.012	-	-	-	N.D.	N.D.(2.7)	N.D.(2.4)	-
				2019/6/19	Arthropoda	Malacostraca	Decapoda	Astacidae	<i>Pacifastacus leniusculus trowbridgii</i>	Signal crayfish	20	1.3	Imago	-	-	19.5	1.5	18	7.8
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	15	2.3	Mature fish	Obscure digesta	Viscera removed	63.5	5.5	58	0.72
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius auratus</i>	Carassius auratus langsdorfii	2	1.7	Mature fish	Obscure digesta	Viscera removed	31.9	1.9	30	1.3
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Cyprinus carpio</i>	Common carp	1	4.2	Mature fish	Obscure digesta	Viscera removed	19.4	1.4	18	1.1
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Hemibarbus barbus</i>	Hemibarbus barbus	2	1.5	Mature fish	Obscure digesta	Viscera removed	47.0	3.0	44	1.0
					Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Hypomesus nipponensis</i>	Japanese smelt	54	0.17	Mature fish	-	-	2.8	N.D.(0.54)	2.8	-
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Salvelinus leucomaenis</i>	Char	5	0.85	Mature fish	Japanese smelt,Common prawn	Viscera removed	25.9	1.9	24	-
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou masou</i>	Seema	3	0.27	Immature fish	Japanese smelt,Ant,Bee	Viscera removed	12.75	0.75	12	-
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	14	3.1	Immature fish,Mature fish	Common prawn,Signal crayfish,Fish,Ephemera	Viscera removed	55.5	3.5	52	1.1
H-3	In the lake and Inflowing rivers	37.6653°	140.1329°	2019/6/8	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.0052	-	-	-	30	N.D.(5.5)	30	-
				2019/6/9	Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	<i>Drunella basalis</i>	Drunella basalis	384	0.031	Larva	-	-	5.4	N.D.(1.7)	5.4	-
					Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	<i>Drunella kohnoi</i>	Drunella kohnoi									
					Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	<i>Drunella trispina</i>	<i>Drunella trispina</i>									
					Arthropoda	Insecta	Plecoptera	Perlidae	<i>Acroneuria sp.</i>	Acroneuria	141	0.028	Larva	-	-	1.6	N.D.(1.9)	1.6	-
					Arthropoda	Insecta	Plecoptera	Perlidae	<i>Calineuria sp.</i>	<i>Calineuria</i>									
					Arthropoda	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Stenopsyche marmorata	163	0.059	Larva	-	-	3.7	N.D.(2.8)	3.7	-
					Arthropoda	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	Protohermes grandis	14	0.0049	Larva	-	-	N.D.	N.D.(6.1)	N.D.(5.0)	-
					Arthropoda	Insecta	Megaloptera	Corydalidae	<i>Parachauliodes japonicus</i>	<i>Parachauliodes japonicus</i>									
					Arthropoda	Malacostraca	Decapoda	Palaemonidae	<i>Palaemon paucidens</i>	Common prawn	440	0.17	Imago	-	-	9.30	0.80	8.5	-
					Vertebrata	Osteichthyes	Scorpaeniformes	Cottidae	<i>Cottus pollux</i>	Japanese fluvial sculpin	69	0.18	Immature fish	-	-	5.1	N.D.(0.53)	5.1	-
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	2	0.014	Immature fish	-	-	14	N.D.(2.7)	14	-
					Vertebrata	Amphibia	Anura	Rhacophoridae	<i>Buergeria buergeri</i>	Kajika frog	11	0.065	Imago	-	-	38.7	2.7	36	-
					Vertebrata	Amphibia	Caudata	Salamandridae	<i>Cynops pyrrhogaster</i>	Cynops pyrrhogaster	2	0.0088	Imago	-	-	4.9	N.D.(3.7)	4.9	-
					Coarse Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.25	-	-	-	29.4	2.4	27	-
H-4	Within the lake and rivers in the vicinity	37.6551°	140.1181°	2019/6/9	Arthropoda	Insecta	Odonata	Cordulegastridae	<i>Anotogaster sieboldii</i>	<i>Anotogaster sieboldii</i>	14	0.011	Larva(Dragonfly larva)	-	-	7.6	N.D.(3.9)	7.6	-
					Arthropoda	Insecta	Odonata	Libellulidae	<i>Sympetrum sp.</i>	Sympetrum									
					Arthropoda	Insecta	Odonata	Aeshnidae	<i>Boyeria maclachlani</i>	Boyeria maclachlani									
					Mollusca	Gastropoda	Discopoda	Pleuroceridae	<i>Semisulcospira libertina</i>	Semisulcospira libertina	30	0.031	Imago	-	Molluscosus part	13	N.D.(2.1)	13	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Phoxinus lagowskii steindachneri</i>	Amur minnow	44	0.12	Immature fish,Mature fish	-	-	3.8	N.D.(0.69)	3.8	-
					Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Lefua echigonia</i>	Lefua echigonia	16	0.017	Immature fish,Mature fish	-	-	4.2	N.D.(3.1)	4.2	-
					Vertebrata	Amphibia	Anura	-	-	Frog	130	0.072	Larva(Tadpole)	-	-	108.6	8.6	100	-
					Vertebrata	Amphibia	Anura	Ranidae	<i>Rana ornativentris</i>	Montane brown frog	2	0.024	Imago	-	-	6.2	N.D.(2.4)	6.2	-
					Vertebrata	Amphibia	Caudata	Salamandridae	<i>Cynops pyrrhogaster</i>	Cynops pyrrhogaster	2	0.012	Imago	-	-	5.6	N.D.(2.7)	5.6	-

*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.