

OResults of Radioactive Material Monitoring of Aquatic Organisms (Location G in Lake Hayama)

<Location G in Lake Hayama: Samples collected>

Items Locations	General items		Radioactive materials			
	Water	Sediment	Water (Cs)	Water (Sr)	Sediment (Cs)	Sediment (Sr)
G-1	○	○	○	○	○	○
G-4	○	○	○	-	○	-

<Location G in Lake Hayama: Site measurement item>

Items 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)
G-1(Surface layer)	37.7310°	140.8121°	2019/6/7	09:30	11:40	23.4	19.5	Sediment	7.5Y 3/1	Plant pieces	3.6	1.5
G-1(Bottom layer)						23.1						
G-4	37.7382°	140.8035°		13:20	14:00	20.9	20.8	Sand gravel	7.5Y 5/3	Plant pieces	0.2	>0.5

Note) G-1 was moved to downstream 500m in the spring survey due to drought.

Note) The number in Secchi disk depth at G4 indicates Transparency.

<Location G in Lake Hayama: General survey items/Analysis of radioactive materials Water>

Items Locations	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)
G-1(Surface layer)	37.7310°	140.8121°	2019/6/7	09:30	7.2	1.0	5.4	9.1	8.8	0.05	1.7	4	5.0	0.0077	0.088	-
G-1(Bottom layer)					7.2	0.8	5.6	8.2	9.1	0.05	1.8	5	5.4	0.0065	0.085	0.0014
G-4	37.7382°	140.8035°		13:20	7.6	<0.5	2.5	9.5	9.2	0.05	1.1	1	0.8	0.0016	0.019	-

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

Note) G-1 was moved to downstream 500m in the spring survey due to drought.

<Location G in Lake Hayama: General survey items/Analysis of radioactive materials Sediment>

Items Locations	Latitude and longitude of the location		Survey date and time		pH	Redox potential	Water content	IL	TOC	Soil particle density	Grain size distribution								Cs-134 (Bq/kg-dry)	Cs-137 (Bq/kg-dry)	Sr-90 (Bq/kg-dry)
	Latitude	Longitude	Date	Time (sediment)		E _{NHE} (mV)	(%)	(%)	(mg/g-dry)	(g/cm ³)	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)			
G-1	37.7310°	140.8121°	2019/6/7	11:40	7.0	92	93.9	16.8	52.5	2.481	0.0	0.0	0.1	2.7	64.0	33.2	0.0098	0.85	710	9500	5.2
G-4	37.7382°	140.8035°		14:00	7.3	276	28.2	3.1	3.1	2.673	9.4	46.3	32.7	4.9	2.6	4.1	0.94	9.5	35	470	-

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

Note) G-1 was moved to downstream 500m in the spring survey due to drought.

<Location G in Lake Hayama: 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	
G-1 G-2 G-3	In the lake	37.7348°	140.8102°	2019/6/7	Algae/plant	-	-	-	-	Plankton (Planktonic algae)	-	0.0094	-	-	-	3.1	N.D.(3.6)	3.1	-
		37.7267°	140.8223°	2019/6/11	Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius auratus</i>	Carassius auratus langsdorfii	1	2.6	Mature fish	Obscure digesta	Viscera removed	49.2	3.2	46	0.66
		37.7302°	140.8307°		Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	2	0.57	Immature fish,Mature fish	Obscure digesta	Viscera removed	151	11	140	-
G-4	Inflowing rivers	37.7382°	140.8035°	2019/6/4	Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Lepomis macrochirus</i>	Bluegill	17	0.28	Immature fish	-	-	37.9	2.9	35	-
					Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.0058	-	-	-	46	N.D.(4.8)	46	-
					Arthropoda	Insecta	Ephemeroptera	Potamanthidae	<i>Potamanthus formosus</i>	Potamanthus formosus	386	0.010	Larva	-	-	83.6	6.6	77	-
					Arthropoda	Insecta	Ephemeroptera	Isonychiidae	<i>Isonychia valida</i>	Isonychia valida									
					Arthropoda	Insecta	Ephemeroptera	Siphonuridae	<i>Siphonuridae</i>	Siphonuridae									
					Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	<i>Drunella ishiyamana</i>	<u><i>Drunella ishiyamana</i></u>									
					Arthropoda	Insecta	Ephemeroptera	Ephemeridae	<i>Ephemera japonica</i>	Ephemera japonica	59	0.016	Larva	-	-	50.6	3.6	47	-
					Arthropoda	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Stenopsyche marmorata									
					Arthropoda	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	Macromia amphigena									
					Arthropoda	Insecta	Odonata	Cordulegastridae	<i>Anotogaster sieboldii</i>	Anotogester sieboldii									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Nihonogomphus viridis</i>	Nihonogomphus viridis	48	0.012	Larva(Dragonfly larva)	-	-	13	N.D.(2.8)	13	-
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Stylogomphus suzuki</i>	Stylogomphus suzuki									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	Sieboldius albardae									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	<u><i>Davidius</i></u>									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Sinogomphus flavolimbatus</i>	Sinogomphus flavolimbatus									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Asiagomphus melaenops</i>	Asiagomphus melaenops									
					Arthropoda	Insecta	Odonata	Aeshnidae	<i>Anax parthenope julius</i>	Anax parthenope julius									
					Arthropoda	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	Protohermes grandis	39	0.024	Larva	-	-	7.4	N.D.(2.2)	7.4	-
					Arthropoda	Malacostraca	Decapoda	Atyidae	<i>Paratya improvisa</i>	Freshwater shrimp	108	0.028	Juvenile	-	-	24	N.D.(2.7)	24	-
					Vertebrata	Osteichthyes	Anguilliformes	Anguillidae	<i>Anguilla japonica</i>	Japanese eel	1	0.87	Mature fish	Fish	Viscera removed	80.7	5.7	75	0.14
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	170	1.2	Immature fish	-	-	23.9	1.9	22	0.24
					Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Misgurnus anguillicaudatus</i>	Oriental weatherfish	3	0.029	Immature fish,Mature fish	-	-	9.6	N.D.(1.6)	9.6	-
					Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Plecoglossus altivelis altivelis</i>	Sweetfish	73	0.39	Immature fish	-	-	49.5	3.5	46	-
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Yamame trout	414	1.5	Immature fish	-	-	18.4	1.4	17	0.14
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius flumineus</i>	Rhinogobius flumineus	24	0.044	Immature fish	-	-	21.8	1.8	20	-
					Course Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.23	-	-	-	53.8	3.8	50	-

*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.