

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-2	○	○	○	-	○	-
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)	37.7348°	140.8102°	2021/8/27	11:30	11:45	24.9	24.1	Sand sediment	7.5Y2/2	Plant pieces	2.5	2.5
G-1(Bottom layer)						23.9						
G-2(Surface layer)	37.7267°	140.8223°		09:35	09:50	25.2	17.0	Sediment	7.5Y4/2	Plant pieces	15.4	3.0
G-2(Bottom layer)						17.1						
G-4	37.7382°	140.8035°	13:30	13:45	22.4	22.2	Sand	7.5Y4/3	Plant pieces	0.5	>1.0	

<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 (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)												
G-1(Surface layer)	37.7348°	140.8102°	2021/8/27	11:30	7.7	0.5	4.1	10.4	7.4	0.05	2.0	2	1.5	N.D.(0.0014)	0.011	-
G-1(Bottom layer)					7.4	<0.5	3.3	9.3	8.0	0.04	1.5	6	4.8	N.D.(0.0014)	0.014	0.00074
G-2(Surface layer)	37.7267°	140.8223°		09:35	7.8	0.9	4.3	10.1	7.6	0.04	2.4	1	1.4	N.D.(0.0014)	0.010	-
G-2(Bottom layer)					6.8	<0.5	3.6	1.9	8.1	0.04	1.6	6	4.6	0.0031	0.061	-
G-4	37.7382°	140.8035°	13:30	7.5	<0.5	3.4	9.0	7.6	0.04	1.1	13	2.8	N.D.(0.0013)	0.019	-	

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

<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 E _{NHIE} (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)
G-1	37.7348°	140.8102°	2021/8/27	11:45	7.5	306	32.6	6.6	10.2	2.623	0.7	2.1	17.6	42.4	27.4	9.8	0.11	4.8	33	820	0.85
G-2	37.7267°	140.8223°		09:50	7.2	160	39.8	7.6	19.4	2.563	0.7	1.4	4.6	26.8	46.9	19.6	0.040	9.5	55	1500	-
G-4	37.7382°	140.8035°		13:45	7.7	218	35.4	6.1	15.8	2.623	0.1	0.1	3.5	47.8	36.7	11.8	0.079	4.8	34	880	-

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

<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° 37.7267° 37.7302°	140.8102° 140.8223° 140.8307°	2021/8/27	Algae/plant	-	-	-	-	Plankton (Planktonic algae)	-	0.023	-	-	-	N.D.	N.D.(1.2)	N.D.(1.1)	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	1	0.37	Mature fish	Fish	Viscera removed	28.2	1.2	27	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius auratus</i>	Carassius auratus langsdorfii	2	1.7	Mature fish	Obscure digesta	Viscera removed	28	N.D.(1.5)	28	1.1
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus salmoides</i>	Largemouth bass	1	0.18	Immature fish	Obscure digesta	Viscera removed	28	N.D.(2.4)	28	-
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus salmoides</i>	Largemouth bass	1	1.8	Mature fish	Bluegill,Red swamp crawfish	Viscera removed	90.6	3.6	87	1.2
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	4	0.76	Immature fish	Fish,Caterpillar,Grasshopper	Viscera removed	30	N.D.(1.4)	30	-
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	2	1.6	Mature fish	Bluegill	Viscera removed	52.3	2.3	50	0.43
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Lepomis macrochirus</i>	Bluegill	55	1.2	Immature fish,Mature fish	Obscure digesta	Viscera removed	11	N.D.(1.7)	11	0.43
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Lepomis macrochirus</i>	Bluegill	12	0.31	Immature fish,Mature fish	Plant piece,Polyzoan dormant	Viscera removed	13	N.D.(1.3)	13	-
					Vertebrata	Osteichthyes	Siluriformes	Siluridae	<i>Silurus asotus</i>	Amur catfish	1	0.88	Mature fish	Obscure digesta	Viscera removed	43	N.D.(1.7)	43	-
G-4	Inflowing rivers	37.7382°	140.8035°	2021/8/27	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.0020	-	-	-	160	N.D.(24)	160	-
					Arthropoda	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	Macromia amphigena	53	0.014	Larva(Dragonfly larva)	-	-	8.9	N.D.(5.9)	8.9	-
					Arthropoda	Insecta	Odonata	Cordulegastridae	<i>Anotogaster sieboldii</i>	Anotogaster sieboldii									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Melligomphus viridicostus</i>	Melligomphus viridicostus									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	Sieboldius albardae									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	Davidius									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Asiagomphus melaenops</i>	Asiagomphus melaenops									
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Phoxinus lagowskii steindachneri</i>	Amur minnow	22	0.047	Immature fish,Mature fish	-	-	7.6	N.D.(3.8)	7.6	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	39	0.25	Immature fish	-	-	14	N.D.(1.4)	14	-
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Yamame trout	2	0.028	Immature fish	-	-	8.6	N.D.(5.1)	8.6	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius fluviatilis</i>	Rhinogobius fluviatilis	5	0.034	Mature fish	-	-	9.6	N.D.(4.4)	9.6	-
					Vertebrata	Amphibia	Anura	-	-	Frog	22	0.0059	Larva(Tadpole)	-	-	396	16	380	-
					Vertebrata	Amphibia	Anura	Bufonidae	<i>Bufo japonicus formosus</i>	Japanese toad	1	0.10	Imago	Geotrupidae,Ant	-	39	N.D.(2.7)	39	-
					Vertebrata	Amphibia	Caudata	Salamandridae	<i>Cynops pyrrhogaster</i>	Cynops pyrrhogaster	3	0.025	Imago	-	-	22	N.D.(5.4)	22	-
									Coarse Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.24	-	-	-

*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.