

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

<Location G in Lake Hayama: Samples collected>

Items	General items		Radioactive materials			
	Water	Sediment	Water (Cs)	Water (Sr)	Sediment (Cs)	Sediment (Sr)
Locations						
G-1	○	○	○	○	○	○
G-2	○	○	○	-	○	-
G-4	○	○	○	-	○	-

<Location G in Lake Hayama: Site measurement item>

Items	Latitude and longitude of the location		Survey date and time			Water	Sediment				Other	
Locations	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)	37.7322°	140.8127°	2023/8/30	10:58	11:21	31.2	25.0	Ooze	7.5Y5/2	Plant pieces	5.1	2.0
G-1(Bottom layer)				11:04		28.4						
G-2(Surface layer)	37.7267°	140.8223°		09:55	10:04	31.5	29.1	Ooze	7.5Y5/1	Gravel	2.6	2.3
G-2(Bottom layer)				10:01		30.1						
G-4	37.7382°	140.8035°			13:30	13:34	30.6	30.2	Sand gravel	7.5Y5/2	Plant pieces	0.1

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

Items	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)	37.7322°	140.8127°	2023/8/30	10:58	7.4	0.9	4.2	8.2	9.6	0.05	2.2	4	3.3	N.D.(0.0014)	0.028	-
G-1(Bottom layer)				11:04	7.3	1.0	4.5	7.8	10.0	0.05	2.3	5	4.0	N.D.(0.0013)	0.031	0.00094
G-2(Surface layer)	37.7267°	140.8223°		09:55	7.8	0.7	4.1	8.2	9.5	0.05	2.3	2	2.1	N.D.(0.0014)	0.025	-
G-2(Bottom layer)				10:01	6.9	<0.5	3.0	1.5	9.2	0.05	1.5	3	2.6	N.D.(0.0014)	0.018	-
G-4	37.7382°	140.8035°		13:30	8.2	<0.5	2.6	8.0	10.7	0.06	1.4	<1	0.6	N.D.(0.0012)	0.0091	-

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	Latitude and longitude of the location		Survey date and time		pH	Redox potential E _{N,HLE} (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	37.7322°	140.8127°	2023/8/30	11:21	7.2	63	53.5	14.7	64.0	2.500	0.0	0.0	0.1	3.1	62.8	34.0	0.013	2.0	47	2600	2.3
G-2	37.7267°	140.8223°		10:04	7.2	118	39.8	9.4	34.0	2.560	4.4	4.8	7.7	12.1	48.4	22.6	0.032	4.8	37	1800	-
G-4	37.7382°	140.8035°		13:34	7.7	474	25.5	2.4	1.2	2.670	26.3	44.2	19.6	3.3	2.7	3.9	1.3	9.5	3.3	170	-

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	37.7322°	140.8127°	2023/8/30	Algae/plant	-	-	-	-	Plankton (Planktonic algae)	-	0.022	-	-	-	4.2	N.D.(1.7)	4.2	-
		37.7267°	140.8223°		Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Pseudaspius hakonensis</i>	Japanese dace	11	2.7	Mature fish	Obscure digesta	Viscera removed	59.6	1.6	58	0.29
		37.7302°	140.8307°		Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Cyprinus carpio</i>	Common carp	1	1.9	Mature fish	Obscure digesta	Viscera removed	27	N.D.(1.5)	27	0.44
					Vertebrata	Osteichthyes	Siluriformes	Siluridae	<i>Silurus asotus</i>	Amur catfish	1	1.1	Mature fish	Empty stomach	Viscera removed	89	N.D.(1.8)	89	0.61
G-4	Inflowing rivers	37.7382°	140.8035°	2023/8/29	Algae/plant	-	-	-	-	Sediment deposited on riverbed (Including algae)	-	0.025	-	-	-	56	N.D.(7.9)	56	-
					Arthropoda	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Caddisfly	104	0.015	Larva	-	-	13	N.D.(2.7)	13	-
					Arthropoda	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	Dragonfly	179	0.020	Larva (Dragonfly larva)	-	-	5.4	N.D.(2.0)	5.4	-
					Arthropoda	Insecta	Odonata	Cordulegastridae	<i>Anotogaster sieboldii</i>	Jumbo dragonfly									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Nihonogomphus viridis</i>	Dragonfly									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Sylogomphus suzukii</i>	Dragonfly									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Melligomphus viridicostus</i>	Dragonfly									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	Dragonfly									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Davidius</i> sp.	Dragonfly									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Asiogomphus melaenops</i>	Dragonfly									
					Arthropoda	Insecta	Odonata	Aeshnidae	<i>Boyeria maclachlani</i>	Jumbo dragonfly									
					Arthropoda	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	Dobsonfly	41	0.027	Larva	-	-	3.9	N.D.(1.8)	3.9	-
					Mollusca	Gastropoda	Discopoda	Pleuroceridae	<i>Semisulcospira libertina</i>	Freshwater snail	29	0.011	Juvenile,Imago	-	Molluscous part	6.5	N.D.(3.7)	6.5	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Pseudaspius hakonensis</i>	Japanese dace	93	1.6	Immature fish, Mature fish	Obscure digesta	Viscera removed	10	N.D.(2.0)	10	0.24
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Opsariichthys platypus</i>	Pale break	4	0.039	Immature fish	-	-	11	N.D.(2.8)	11	-
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu dolomieu</i>	Smallmouth bass	2	0.75	Immature fish, Mature fish	<i>Sieboldius albardae</i>	Viscera removed	79	N.D.(1.6)	79	-
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Lepomis macrochirus macrochirus</i>	Bluegill	6	0.13	Immature fish	<i>Paratya improvisa</i> , Phryganeidae, Heptagenioidea, <i>Physa acuta</i>	Viscera removed	13	N.D.(1.7)	13	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius flumineus</i>	Rhinogobius	128	0.12	Immature fish	-	-	7.1	N.D.(1.6)	7.1	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius fluviatilis</i>	Rhinogobius	13	0.057	Immature fish, Mature fish	-	-	11	N.D.(1.1)	11	-
					Vertebrata	Osteichthyes	Siluriformes	Siluridae	<i>Silurus asotus</i>	Amur catfish	1	0.58	Mature fish	Empty stomach	Viscera removed	52	N.D.(1.5)	52	-
					Coarse Particulate Organic Matter	-	-	-	-	Water-bottom leaf litter	-	0.27	-	-	-	32.2	1.2	31	-

*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.