

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	○	○	○	-	○	-
H-2	-	○	-	-	○	-
H-3	○	○	○	○	○	○
H-4	-	○	-	-	○	-
H-5	○	○	○	-	○	-

<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°	2016/8/19	09:49	10:07	24.9	15.5	Ooze	7.5Y 5/3	Plant pieces	14.0	1.2
H-1(Bottom layer)						17.3						
H-2	37.6616°	140.1226°		-	10:19	-	16.7	Ooze	7.5Y 5/2	None	-	-
H-3(Surface layer)	37.6653°	140.1329°		09:21	09:31	25.6	17.1	Sand sediment	7.5Y 4/3	Plant pieces	10.0	1.0
H-3(Bottom layer)						19.9						
H-4	37.6551°	140.1181°		-	10:29	-	21.8	Ooze	7.5Y 5/1	Plant pieces	-	-
H-5(Surface layer)	37.6523°	140.1568°		08:53	09:02	23.0	20.3	Sand sediment	7.5Y 4/2	Plant pieces	7.0	1.0
H-5(Bottom layer)						21.7						

<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°	2016/8/19	09:49	7.5	0.6	4.4	8.3	5.4	0.03	1.8	5	4.1	0.0054	0.030	-
H-1(Bottom layer)					6.8	<0.5	5.1	5.4	4.2	0.03	2.1	17	8.2	0.0048	0.026	-
H-3(Surface layer)	37.6653°	140.1329°		09:21	7.0	0.6	4.7	8.8	5.2	0.03	2.0	7	5.1	0.0061	0.029	-
H-3(Bottom layer)					6.9	0.5	7.1	7.4	4.2	0.03	3.2	16	8.9	0.0055	0.030	0.0015
H-5(Surface layer)	37.6523°	140.1568°		08:53	7.0	<0.5	5.4	7.9	5.2	0.03	2.4	7	4.9	0.0079	0.041	-
H-5(Bottom layer)					6.9	0.6	6.1	7.4	5.1	0.03	2.3	10	5.9	0.0094	0.054	-

<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 _{SHLE} (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°	2016/8/19	10:07	6.7	260	65.3	9.0	26.3	2.586	0.0	0.1	0.2	0.3	60.9	38.5	0.0081	2.0	18	100	-
H-2	37.6616°	140.1226°		10:19	6.9	108	75.1	12.4	43.0	2.502	0.0	0.1	0.2	2.3	53.8	43.6	0.0068	2.0	280	1400	-
H-3	37.6653°	140.1329°		09:31	6.8	148	71.6	14.3	47.7	2.431	0.0	0.1	0.3	15.0	41.1	43.5	0.0092	2.0	410	2200	1.7
H-4	37.6551°	140.1181°		10:29	7.1	174	67.5	8.2	25.2	2.585	0.0	0.2	1.0	3.9	52.6	42.3	0.0074	2.0	90	550	-
H-5	37.6523°	140.1568°		09:02	6.9	181	55.7	8.0	27.6	2.589	0.0	0.0	0.7	26.5	47.7	25.1	0.027	2.0	180	850	-

<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°	2016/9/5	Arthropoda	Malacostraca	Decapoda	Astacidae	<i>Pacifastacus leniusculus trowbridgii</i>	Signal crayfish	36	1.1	Imago	-	-	-	36.3	5.3	31	7.5								
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	15	2.5	Mature fish	Midge	Viscera removed	54.1	8.1	46	0.80									
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius auratus</i>	Carassius auratus langsdorffii	8	1.2	Mature fish	Obscure digesta	Viscera removed	59.8	9.8	50	1.2									
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Cyprinus carpio</i>	Common carp	1	0.90	Mature fish	Amorphous Residue	Viscera removed	29.7	4.7	25	-									
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Hemibarbus barbus</i>	Hemibarbus barbus	2	2.0	Mature fish	Amorphous Residue	Viscera removed	51.3	8.3	43	1.5									
					Vertebrata	Osteichthyes	Osmeriformes	Osmeridae	<i>Hypomesus nipponensis</i>	Japanese smelt	83	0.35	Mature fish	-	-	17.2	2.2	15	-									
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Seema	1	0.36	Immature fish	Japanese smelt	Viscera removed	41.2	6.2	35	-									
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	8	1.9	Immature fish, Mature fish	Japanese smelt, Common prawn, Common carp	Viscera removed	78	12	66	1.1									
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Lepomis macrochirus</i>	Bluegill	7	0.40	Immature fish, Mature fish	Common prawn	Viscera removed	49.6	6.6	43	-									
H-3	The confluence with Nakatsu River	37.6653°	140.1329°	2016/8/19	Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.25	-	-	-	56.5	9.5	47	-									
H-4	Within the lake and rivers in the vicinity	37.6551°	140.1181°	2016/8/19	Algae/plant	-	-	-	-	Plankton (Planktonic algae)	-	0.0092	-	-	-	41.3	6.3	35	-									
					Algae/plant	Monocotyledoneae	Alismatales	Hydrocharitaceae	<i>Elodea nuttallii</i>	Western Waterweed	-	0.34	-	-	-	54.1	8.1	46	-									
				2016/8/18	Arthropoda	Insecta	Odonata	Corduliidae	<i>Cordulia amurensis</i>	Cordulia amurensis	46	0.015	Larva (Dragonfly larva)	-	-	7.2	N.D.(2.6)	7.2	-									
					Arthropoda	Insecta	Odonata	Corduliidae	<i>Somatochlora uchidai</i>	Somatochlora uchidai																		
					Arthropoda	Insecta	Odonata	Cordulegastriidae	<i>Anotogaster sieboldii</i>	Anotogaster sieboldii																		
					Arthropoda	Insecta	Odonata	Libellulidae	<i>Sympetrum croceolum</i>	Sympetrum croceolum																		
					Arthropoda	Insecta	Odonata	Libellulidae	<i>Libellula quadrimaculata asahinai</i>	Libellula quadrimaculata asahinai																		
					Arthropoda	Insecta	Odonata	Aeshnidae	<i>Anax parthenope</i>	Anax parthenope																		
					Arthropoda	Insecta	Odonata	Aeshnidae	<i>Aeshna juncea</i>	Common Hawker																		
					Arthropoda	Malacostraca	Decapoda	Atyidae	<i>Paratya improvisa</i>	Freshwater shrimp										63	0.0099	Imago	-	-	18	N.D.(3.6)	18	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Phoxinus lagowskii steindachneri</i>	Amur Minnow										13	0.045	Immature fish, Mature fish	-	-	5.6	1.3	4.3	-
					Vertebrata	Amphibia	Anura	Ranidae	<i>Rana rugosa</i>	Wrinkled Frog										2	0.022	Imago	-	-	9.0	N.D.(2.2)	9.0	-
					Vertebrata	Amphibia	Anura	-	-	Frog										77	0.074	Larva (Tadpole)	-	-	21.0	3.0	18	-
					Vertebrata	Amphibia	Caudata	Salamandridae	<i>Cynops pyrrhogaster</i>	Cynops pyrrhogaster										4	0.015	Imago	-	-	9.8	N.D.(3.7)	9.8	-

*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.