

OResults of Radioactive Material Monitoring of Aquatic Organisms (Location O along the Tomioka River)

<Location O along the Tomioka River: Samples collected>

Locations	General items		Radioactive materials			
	Water	Sediment	Water (Cs)	Water (Sr)	Sediment (Cs)	Sediment (Sr)
O-1	○	○	○	○	○	○
O-2	○	○	○	-	○	-

<Location O along the Tomioka River: 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)	Transparency (cm)
O-1	37.3547°	140.9780°	2023/6/11	09:40	09:43	17.7	17.7	Sand gravel	7.5Y5/3	None	0.30	>100
O-2	37.3624°	140.9612°		11:30	11:35	18.3	17.7	Sand gravel	7.5Y5/3	None	0.20	>100

<Location O along the Tomioka River: General survey items/Analysis of radioactive materials Water>

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)
O-1	37.3547°	140.9780°	2023/6/11	09:40	7.3	0.6	3.0	9.1	9.8	0.05	1.0	7	2.2	N.D.(0.0014)	0.017	0.0013
O-2	37.3624°	140.9612°		11:30	7.4	0.7	2.9	9.1	8.9	0.05	1.1	5	3.4	N.D.(0.0015)	0.015	-

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

<Location O along the Tomioka River: General survey items/Analysis of radioactive materials Sediment>

Locations	Latitude and longitude of the location		Survey date and time		pH	Redox potential E _{NHLE} (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)			
O-1	37.3547°	140.9780°	2023/6/11	09:43	7.7	526	19.1	1.2	0.8	2.660	20.5	46.7	23.7	2.9	2.1	4.1	1.1	19	4.4	170	0.12
O-2	37.3624°	140.9612°		11:35	7.7	518	20.1	1.2	1.1	2.680	36.8	32.7	19.1	4.3	4.9	2.2	1.4	19	2.7	140	-

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

<Location O along the Tomioka River: 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	
O-1	The main stream of the Tomioka River	37.3547°	140.9780°	2023/6/11	Algae/plant	-	-	-	-	Sediment deposited on riverbed (including algae)	-	0.0029	-	-	-	43	N.D.(9.1)	43	-
					Arthropoda	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Caddisfly	93	0.0064	Larva	-	-	96	N.D.(16)	96	-
					Arthropoda	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	Dragonfly	42	0.011	Larva (Dragonfly larva)	-	-	8.7	N.D.(2.9)	8.7	-
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Stylogomphus suzukii</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>Asiagomphus melaenops</i>	Dragonfly									
					Arthropoda	Insecta	Odonata	Aeshnidae	<i>Boyeria maclachlani</i>	Jumbo dragonfly									
					Arthropoda	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	Dobsonfly	52	0.017	Larva	-	-	10	N.D.(1.8)	10	-
					Arthropoda	Malacostraca	Decapoda	Palaemonidae	<i>Palaemon paucidens</i>	Lake prawn	119	0.13	Imago	-	-	8.8	N.D.(1.9)	8.8	-
					Arthropoda	Malacostraca	Decapoda	Atyidae	<i>Paratya improvisa</i>	Freshwater shrimp	51	0.018	Juvenile, Imago	-	-	18	N.D.(3.1)	18	-
					Arthropoda	Malacostraca	Decapoda	Varunidae	<i>Eriocheir japonica</i>	Japanese mitten crab	12	0.039	Juvenile	-	-	15	N.D.(2.4)	15	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Pseudaspius hakonensis</i>	Japanese dace	2	0.036	Immature fish	-	-	17	N.D.(4.1)	17	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Opsariichthys platypus</i>	Pale break	1	0.016	Mature fish	-	-	19	N.D.(3.0)	19	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Candidia temminckii</i>	Dark chub	7	0.060	Immature fish, Mature fish	-	-	13	N.D.(2.9)	13	-
					Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Plecoglossus altivelis altivelis</i>	Ayu sweetfish	96	1.5	Immature fish, Mature fish	-	-	11	N.D.(1.2)	11	0.037
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius fluviatilis</i>	Rhinogobius	2	0.018	Mature fish	-	-	15	N.D.(3.3)	15	-
					Coarse Particulate Organic Matter	-	-	-	-	Water-bottom leaf litter	-	0.25	-	-	-	58	N.D.(1.6)	58	-
O-2	The main stream of the Tomioka River	37.3624°	140.9612°	2023/6/11	Algae/plant	-	-	-	-	Sediment deposited on riverbed (including algae)	-	0.0027	-	-	-	46	N.D.(12)	46	-
					Arthropoda	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	Dobsonfly	32	0.023	Larva	-	-	2.4	N.D.(2.0)	2.4	-
					Arthropoda	Malacostraca	Decapoda	Palaemonidae	<i>Palaemon paucidens</i>	Lake prawn	47	0.049	Juvenile, Imago	-	-	7.3	N.D.(1.1)	7.3	-
					Arthropoda	Malacostraca	Decapoda	Varunidae	<i>Eriocheir japonica</i>	Japanese mitten crab	8	0.13	Juvenile	-	-	15	N.D.(1.6)	15	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Pseudaspius hakonensis</i>	Japanese dace	94	1.5	Immature fish, Mature fish	-	-	21	N.D.(0.99)	21	0.26
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Opsariichthys platypus</i>	Pale break	3	0.061	Mature fish	-	-	20	N.D.(4.5)	20	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Candidia temminckii</i>	Dark chub	13	0.29	Immature fish, Mature fish	-	-	32	N.D.(1.2)	32	-
					Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Cobitis</i> sp.	Japanese striped loach	5	0.019	Mature fish	-	-	7.0	N.D.(2.1)	7.0	-
					Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Plecoglossus altivelis altivelis</i>	Ayu sweetfish	101	2.0	Immature fish, Mature fish	-	-	22	N.D.(1.2)	22	0.051
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou masou</i>	Masu salmon	78	1.5	Immature fish, Mature fish	Beetles, Caterpillar, Ant, Aquatic insect, Bee, Caddisfly(larva), Fish	Viscera removed	12	N.D.(0.94)	12	0.19
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius fluviatilis</i>	Rhinogobius	5	0.050	Mature fish	-	-	12	N.D.(1.1)	12	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Tridentiger brevispinis</i>	Dusky tripletooth goby	1	0.019	Mature fish	-	-	8.3	N.D.(2.1)	8.3	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Sicyopterus japonicus</i>	Monk goby	1	0.022	Mature fish	-	-	25	N.D.(5.9)	25	-
					Vertebrata	Amphibia	Anura	Lithobates	<i>Lithobates catesbeianus</i>	American bullfrog	1	0.34	Imago	-	-	50	N.D.(1.1)	50	-
					Coarse Particulate Organic Matter	-	-	-	-	Water-bottom leaf litter	-	0.24	-	-	-	59.6	1.6	58	-

*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.