

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

<Location O along the Tomioka River: Samples collected>

Items	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>

Items	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°	2022/8/20	14:35	14:40	19.7	20.4	Sand gravel	7.5Y3/2	None	0.50	>100
O-2	37.3624°	140.9612°		16:13	16:15	22.0	22.0	Sand gravel	7.5Y5/3	None	0.20	>100

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

Items	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)												
O-1	37.3547°	140.9780°	2022/8/20	14:35	7.5	<0.5	2.2	8.3	7.8	0.05	0.8	3	1.1	N.D.(0.0016)	0.023	0.0011
O-2	37.3624°	140.9612°		16:13	7.6	<0.5	2.3	8.4	7.9	0.05	0.9	2	1.2	N.D.(0.0015)	0.021	-

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>

Items	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°	2022/8/20	14:40	7.6	396	25.9	2.9	6.5	2.630	8.3	10.3	25.4	37.3	12.5	6.2	0.20	27	18	760	0.33
O-2	37.3624°	140.9612°		16:15	7.6	463	18.5	1.8	2.8	2.680	20.6	19.0	27.6	19.8	9.0	4.0	0.55	19	8.0	270	-

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°	2022/8/20	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.0061	-	-	-	75	N.D.(14)	75	-
					Arthropoda	Insecta	Ephemeroptera	Isonychiidae	<i>Isonychia valida</i>	<i>Isonychia valida</i>	102	0.0075	Larva	-	-	30	N.D.(4.7)	30	-
					Arthropoda	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	<i>Stenopsyche marmorata</i>	47	0.0096	Larva	-	-	31	N.D.(5.0)	31	-
					Arthropoda	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	<i>Protohermes grandis</i>	62	0.034	Larva	-	-	6.1	N.D.(1.3)	6.1	-
					Arthropoda	Malacostraca	Decapoda	Palaemonidae	<i>Palaemon paucidens</i>	Common prawn	30	0.039	Imago	-	-	15	N.D.(3.1)	15	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Opsarichthys platypus</i>	Pale chub	8	0.084	Immature fish, Mature fish	-	-	19	N.D.(2.4)	19	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Candidia temminckii</i>	Dark chub	14	0.10	Immature fish, Mature fish	-	-	16	N.D.(2.2)	16	-
					Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Plecoglossus altivelis altivelis</i>	Sweetfish	1	0.069	Mature fish	-	-	30	N.D.(4.6)	30	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius fluviatilis</i>	<i>Rhinogobius fluviatilis</i>	4	0.018	Mature fish	-	-	19	N.D.(3.9)	19	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Tridentiger brevispinis</i>	Dusky tripletooth goby	2	0.035	Mature fish	-	-	6.1	N.D.(1.7)	6.1	-
O-2	The main stream of the Tomioka River	37.3624°	140.9612°	2022/8/20	Coarse Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.25	-	-	-	40	N.D.(1.4)	40	-
					Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.0054	-	-	-	75	N.D.(20)	75	-
					Arthropoda	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	<i>Protohermes grandis</i>	40	0.020	Larva	-	-	7.5	N.D.(1.8)	7.5	-
					Arthropoda	Malacostraca	Decapoda	Palaemonidae	<i>Palaemon paucidens</i>	Common prawn	60	0.076	Imago	-	-	11	N.D.(1.3)	11	-
					Arthropoda	Malacostraca	Decapoda	Varunidae	<i>Eriocheir japonica</i>	Japanese mitten crab	11	0.23	Juvenile	-	-	19	N.D.(1.4)	19	-
					Vertebrata	Osteichthyes	Anguilliformes	Anguillidae	<i>Anguilla japonica</i>	Japanese eel	1	0.17	Mature fish	Empty stomach	Viscera removed	19	N.D.(2.1)	19	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	56	0.57	Immature fish, Mature fish	-	-	18	N.D.(1.3)	18	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Candidia temminckii</i>	Dark chub	18	0.23	Immature fish, Mature fish	-	-	32	N.D.(1.2)	32	-
					Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Plecoglossus altivelis altivelis</i>	Sweetfish	15	1.2	Mature fish	-	-	32	N.D.(1.5)	32	0.18
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou masou</i>	Yamame trout	7	0.17	Immature fish, Mature fish	Obscure digesta	Viscera removed	25	N.D.(1.8)	25	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius fluviatilis</i>	<i>Rhinogobius fluviatilis</i>	8	0.061	Mature fish	-	-	17	N.D.(2.5)	17	-
					Coarse Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.24	-	-	-	39	N.D.(1.6)	39	-

*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.