

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

<Location O along the Tomioka River: Samples collected>

Locations	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>

Locations	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°	2024/8/23	08:15	08:15	22.5	22.4	Sand	7.5Y5/3	None	0.63	>50
O-2		37.3624°	140.9612°		10:10	10:10	23.1	23.1	Sand	7.5Y4/1	Plant pieces	0.39	>50

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

Locations	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)												
O-1		37.3547°	140.9780°	2024/8/23	08:15	7.3	1.3	2.0	8.2	10.0	0.05	1.0	2	1.3	N.D.(0.0016)	0.017	0.0016
O-2		37.3624°	140.9612°		10:10	7.4	1.1	2.2	9.0	9.3	0.05	0.9	4	1.8	N.D.(0.0013)	0.016	-

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	Items	Latitude and longitude of the location		Survey date and time		pH	Redox potential E _{NHE} (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°	2024/8/23	08:15	7.4	391	23.6	1.6	1.7	2.680	9.4	50.8	38.5	1.0	0.3	1.0	9.5	2.4	180	0.18	
O-2		37.3624°	140.9612°		10:10	7.0	360	29.4	3.7	4.9	2.680	8.6	13.8	62.9	12.3	2.4	0.50	9.5	4.3	350	-	

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°	2024/8/23	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.0052	-	-	-	89	N.D.(22)	89	-					
					Arthropoda	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	<i>Stenopsyche marmorata</i>	81	0.022	Larva	-	-	-	92	N.D.(6.7)	92	-				
					Arthropoda	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	<i>Macromia amphigena</i>	182	0.035	Larva (Dragonfly larva)	-	-	-	9.7	N.D.(1.3)	9.7	-				
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Stylogomphus suzukii</i>	<i>Stylogomphus suzukii</i>														
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Meligomphus viridicostus</i>	<i>Meligomphus viridicostus</i>														
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	<i>Sieboldius albardae</i>														
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	<i>Davidius</i>														
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Sinogomphus flavolimbatus</i>	<i>Sinogomphus flavolimbatus</i>														
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Shaogomphus postocularis</i>	<i>Shaogomphus postocularis</i>														
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Asiagomphus melaeonops</i>	<i>Asiagomphus melaeonops</i>														
					Arthropoda	Insecta	Odonata	Aeshnidae	<i>Boyeria maclachlani</i>	<i>Boyeria maclachlani</i>														
					Arthropoda	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	<i>Protohermes grandis</i>														
					Arthropoda	Malacostraca	Decapoda	Palaemonidae	<i>Palaemon paucidens</i>	Common prawn	21	0.012	Larva	-	-	-	8.2	N.D.(3.9)	8.2	-				
					Arthropoda	Malacostraca	Decapoda	Palaemonidae	<i>Paratya improvisa</i>	Freshwater shrimp	81	0.12	Imago	-	-	-	12	N.D.(1.7)	12	-				
					Arthropoda	Malacostraca	Decapoda	Atyidae	<i>Paratya improvisa</i>	Freshwater shrimp	462	0.068	Juvenile	-	-	-	20	N.D.(4.4)	20	-				
					Arthropoda	Malacostraca	Decapoda	Varunidae	<i>Eriocheir japonica</i>	Japanese mitten crab	8	0.080	Juvenile	-	-	-	11	N.D.(2.0)	11	-				
					Vertebrata	Osteichthyes	Anguilliformes	Anguillidae	<i>Anguilla japonica</i>	Japanese eel	1	0.084	Immature fish	-	-	-	8.5	N.D.(1.4)	8.5	-				
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	16	0.17	Immature fish	-	-	-	13	N.D.(1.3)	13	-				
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Opsarichthys platypus</i>	Pale chub	9	0.036	Immature fish	-	-	-	12	N.D.(1.6)	12	-				
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Candidia temminckii</i>	Dark chub	38	0.36	Immature fish, Mature fish	-	-	-	19	N.D.(1.4)	19	-				
					Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Plecoglossus altivelis altivelis</i>	Sweetfish	39	1.3	Immature fish, Mature fish	-	-	-	52	N.D.(1.4)	52	0.18				
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Yamame trout	4	0.51	Immature fish, Mature fish	Isonychia japonica, Goera japonica, Terrestrial insect	Viscera removed	-	15	N.D.(1.3)	15	-				
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius fluviatilis</i>	<i>Rhinogobius fluviatilis</i>	10	0.033	Immature fish, Mature fish	-	-	-	11	N.D.(1.5)	11	-				
Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius nagoyae</i>	<i>Rhinogobius nagoyae</i>																			
Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Sicyopterus japonicus</i>	Monk goby	28	0.16	Immature fish, Mature fish	-	-	-	21	N.D.(1.6)	21	-									
					Coarse Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.23	-	-	-	54	N.D.(1.3)	54	-					
O-2	The main stream of the Tomioka River	37.3624°	140.9612°	2024/8/23	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.0088	-	-	-	74	N.D.(12)	74	-					
					Arthropoda	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	<i>Macromia amphigena</i>	60	0.021	Larva (Dragonfly larva)	-	-	-	27	N.D.(2.4)	27	-				
					Arthropoda	Insecta	Odonata	Cordulegastridae	<i>Anotogaster sieboldii</i>	<i>Anotogaster sieboldii</i>														
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Stylogomphus suzukii</i>	<i>Stylogomphus suzukii</i>														
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	<i>Sieboldius albardae</i>														
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	<i>Davidius</i>														
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Sinogomphus flavolimbatus</i>	<i>Sinogomphus flavolimbatus</i>														
					Arthropoda	Insecta	Odonata	Aeshnidae	<i>Boyeria maclachlani</i>	<i>Boyeria maclachlani</i>														
					Arthropoda	Insecta	Odonata	Aeshnidae	<i>Planaeschna milnei milnei</i>	<i>Planaeschna milnei milnei</i>														
					Arthropoda	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	<i>Protohermes grandis</i>														
					Arthropoda	Malacostraca	Decapoda	Palaemonidae	<i>Palaemon paucidens</i>	Common prawn											34	0.021	Larva	-
					Arthropoda	Malacostraca	Decapoda	Palaemonidae	<i>Palaemon paucidens</i>	Common prawn	237	0.37	Imago	-	-	-	11	N.D.(1.4)	11	-				
					Vertebrata	Osteichthyes	Anguilliformes	Anguillidae	<i>Anguilla japonica</i>	Japanese eel	1	1.0	Mature fish	Empty stomach	Viscera removed	-	41	N.D.(2.1)	41	0.085				
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	60	0.42	Immature fish, Mature fish	-	-	-	12	N.D.(1.2)	12	-				
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Candidia temminckii</i>	Dark chub	77	0.46	Immature fish, Mature fish	-	-	-	14	N.D.(1.3)	14	-				
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius curvieri</i>	Japanese crucian carp	1	0.49	Mature fish	Obscure digesta	Viscera removed	-	12	N.D.(1.6)	12	-				
					Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Plecoglossus altivelis altivelis</i>	Sweetfish	37	1.1	Immature fish, Mature fish	-	-	-	40	N.D.(1.5)	40	0.21				
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Yamame trout	18	0.26	Immature fish, Mature fish	Empty stomach	Viscera removed	-	10	N.D.(1.2)	10	-				
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius fluviatilis</i>	<i>Rhinogobius fluviatilis</i>	22	0.067	Immature fish, Mature fish	-	-	-	11	N.D.(2.8)	11	-				
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius nagoyae</i>	<i>Rhinogobius nagoyae</i>														
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Sicyopterus japonicus</i>	Monk goby	19	0.056	Immature fish	-	-	-	17	N.D.(3.8)	17	-				
										Coarse Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.24	-	-	-	34	N.D.(1.3)	34	-

*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.