

OResults of Radioactive Material Monitoring of Aquatic Organisms (Location C along the Uda River)

<Location C along the Uda River: Samples collected>

Locations	General items		Radioactive materials			
	Water	Sediment	Water (Cs)	Water (Sr)	Sediment (Cs)	Sediment (Sr)
C-1	o	o	o	-	o	-
C-2	o	o	o	-	o	-
C-3	o	-	o	-	-	-
C-4	o	o	o	o	o	o
C-5	o	o	o	-	o	-
C-6	o	o	o	-	o	-

<Location C along the Uda 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)		
C-1	37.7953°	140.7459°	2016/9/7	08:25	08:40	18.4	19.3	Sand with gravel	10YR4/3	None	0.31	>50		
C-2	37.7718°	140.7290°		09:25	09:35	19.8	20.7	Sediment with sand	2.5Y3/2	None	0.45	>50		
C-3	37.7792°	140.8040°		10:28	-	21.0	-	-	-	-	0.52	>50		
C-4	37.7687°	140.8443°		11:27	11:42	22.0	22.5	Sand	2.5Y4/2	None	0.61	>50		
C-5	37.7646°	140.8603°		13:15	13:30	22.9	23.1	Sand	2.5Y4/4	None	0.57	>50		
C-6	37.7764°	140.8877°		14:12	14:20	22.8	23.0	Sand	2.5Y4/2	None	0.48	>50		

<Location C along the Uda River: 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)												
C-1	37.7953°	140.7459°	2016/9/7	08:25	7.4	0.6	2.3	9.4	8.5	0.05	0.9	1	1.3	0.0062	0.033	-
C-2	37.7718°	140.7290°		09:25	7.2	0.8	5.8	8.0	8.2	0.05	2.4	8	4.9	0.022	0.12	-
C-3	37.7792°	140.8040°		10:28	7.4	0.7	4.1	9.1	7.2	0.04	1.4	4	4.0	0.016	0.089	-
C-4	37.7687°	140.8443°		11:27	7.6	0.7	3.9	9.3	7.0	0.04	1.4	7	4.5	0.0064	0.033	0.00083
C-5	37.7646°	140.8603°		13:15	7.6	0.7	3.9	9.1	7.1	0.04	1.3	14	6.0	0.0066	0.036	-
C-6	37.7764°	140.8877°		14:12	7.7	0.6	3.7	9.0	7.9	0.04	1.4	5	3.7	0.0042	0.021	-

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

Locations	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)			
C-1	37.7953°	140.7459°	2016/9/7	08:40	7.3	294	29.6	7.3	3.5	2.721	29.8	36.8	22.4	8.1	0.9	2.0	1.3	9.5	67	350	-
C-2	37.7718°	140.7290°		09:35	6.7	342	24.8	3.6	4.1	2.770	26.2	21.3	31.1	9.3	3.6	8.5	0.77	9.5	23	140	-
C-4	37.7687°	140.8443°		11:42	7.1	338	23.5	2.2	2.5	2.780	4.8	24.1	54.1	13.6	0.7	2.7	0.53	9.5	130	670	0.54
C-5	37.7646°	140.8603°		13:30	7.6	329	18.7	1.1	1.0	2.695	22.1	47.1	29.1	1.0	0.1	0.6	1.2	9.5	35	190	-
C-6	37.7764°	140.8877°		14:20	7.7	333	18.9	1.5	1.3	2.720	3.8	37.3	49.1	8.4	0.1	1.3	0.71	9.5	39	250	-

<Location C along the Uda 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	
C-6	-	37.7764°	140.8877°	2016/8/20	Arthropoda	Insecta	Odonata	Cordulegastriidae	<i>Anotogaster sieboldii</i>	Anotogaster sieboldii	70	0.012	Larva (Dragonfly larva)	-	-	10	N.D.(3.6)	10	-
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	Sieboldius albardae									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	<u>Davidius</u>									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Asiagomphus melaenops</i>	Asiagomphus melaenops									
					Arthropoda	Insecta	Odonata	Libellulidae	<i>Sympetrum sp.</i>	Sympetrum									
					Arthropoda	Insecta	Odonata	Aeshnidae	<i>Anax parthenope</i>	Anax parthenope									
					Arthropoda	Malacostraca	Decapoda	Atyidae	<i>Paratya improvisa</i>	Freshwater shrimp	203	0.055	Imago	-	-	10.3	1.7	8.6	-
					Arthropoda	Malacostraca	Decapoda	Varunidae	<i>Eriocheir japonica</i>	Japanese mitten crab	6	0.081	Imago	-	-	18.1	3.1	15	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	2	0.010	Immature fish	Obscure digesta	Viscera removed	N.D.	N.D.(5.2)	N.D.(4.1)	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Zacco platypus</i>	Pale chub	9	0.077	Immature fish,Mature fish	Obscure digesta	Viscera removed	4.0	N.D.(0.93)	4.0	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Nipponocypris temminckii</i>	Dark chub	118	0.60	Immature fish	-	-	6.44	0.84	5.6	-
					Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Cobitis biwae</i>	Cobitis biwae	43	0.036	Immature fish,Mature fish	-	-	5.6	1.2	4.4	-
					Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Misgurnus anguillicaudatus</i>	Oriental weatherfish	6	0.0036	Immature fish	-	-	8.7	N.D.(8.7)	8.7	-
					Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Plecoglossus altivelis</i>	Sweetfish	11	0.099	Immature fish	-	-	22.9	3.9	19	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Gymnogobius urotaenia</i>	Goby	22	0.023	Immature fish	Obscure digesta	Viscera removed	3.4	N.D.(2.1)	3.4	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius sp. CB</i>	Rhinogobius nagoyae	23	0.038	Immature fish,Mature fish	Obscure digesta	Viscera removed	13.2	2.2	11	-
					Vertebrata	Osteichthyes	Siluriformes	Bagridae	<i>Pseudobagrus tokiensis</i>	Cut-tailed bullhead	11	0.0055	Immature fish	-	-	9.5	N.D.(6.0)	9.5	-
					Vertebrata	Amphibia	Anura	-	-	Frog	28	0.019	Larva (Tadpole)	-	-	85	14	71	-
					Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.17	-	-	-	49.3	7.3	42	-

*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.