

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

<Location C along the Uda River: Samples collected>

Items	General items		Radioactive materials			
	Water	Sediment	Water (Cs)	Water (Sr)	Sediment (Cs)	Sediment (Sr)
C-6	○	○	○	○	○	○

<Location C along the Uda 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)
C-6	37.7764°	140.8877°	2019/6/7	08:35	08:38	19.8	19.3	Sand	2.5Y4/2	None	0.33	>50

<Location C along the Uda 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)		(mg/L)	(mg/L)	(mg/L)	(mS/m)		(mg/L)	(mg/L)	(FNU)	(Bq/L)	(Bq/L)	(Bq/L)
C-6	37.7764°	140.8877°	2019/6/7	08:35	7.1	1.6	3.6	8.0	12.9	0.07	1.5	4	3.6	N.D.(0.0013)	0.019	0.0011

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

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

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)			
C-6	37.7764°	140.8877°	2019/6/7	08:38	7.5	278	22.8	1.8	2.0	2.692	8.9	43.0	33.7	7.9	2.7	3.8	0.89	4.8	11	140	0.64

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

<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	The main stream of the Uda River	37.7764°	140.8877°	2019/6/2	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.0062	-	-	-	28	N.D.(5.3)	28	-
					Algae/plant	Zygnematophyceae	Zygnematales	Zygnemataceae	<i>Spirogyra sp.</i>	Spirogyra	-	0.34	-	-	-	8.49	0.69	7.8	-
					Arthropoda	Insecta	Ephemeroptera	Potamanthidae	<i>Potamanthus formosus</i>	Potamanthus formosus	1504	0.051	Larva	-	-	19.4	1.4	18	-
					Arthropoda	Insecta	Ephemeroptera	Siphonuridae	<i>Siphonuridae</i>	<i>Siphonuridae</i>									
					Arthropoda	Insecta	Ephemeroptera	Ephemeridae	<i>Ephemera orientalis</i>	Ephemera orientalis									
					Arthropoda	Insecta	Ephemeroptera	Ephemeridae	<i>Ephemera japonica</i>	Ephemera japonica									
					Arthropoda	Insecta	Ephemeroptera	Ephemeridae	<i>Ephemera strigata</i>	Mont mayfly									
					Arthropoda	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Stenopsyche marmorata	180	0.0072	Larva	-	-	70.2	5.2	65	-
					Arthropoda	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	Macromia amphigena	74	0.0082	Larva(Dragonfly larva)	-	-	4.4	N.D.(3.8)	4.4	-
					Arthropoda	Insecta	Odonata	Cordulegastridae	<i>Anotogaster sieboldii</i>	Anotogester sieboldii									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Stylogomphus suzukii</i>	Stylogomphus suzukii									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Melligomphus viridicostus</i>	Melligomphus viridicostus									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	Sieboldius albardae									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	<i>Davidius</i>									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Anisogomphus maacki</i>	Anisogomphus maacki									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Asiagomphus melaenops</i>	Asiagomphus melaenops									
					Arthropoda	Malacostraca	Decapoda	Cambaridae	<i>Procambarus clarkii</i>	Red swamp crawfish	4	0.036	Imago	-	-	7.2	N.D.(1.7)	7.2	-
					Arthropoda	Malacostraca	Decapoda	Atyidae	<i>Paratya improvisa</i>	Freshwater shrimp	83	0.021	Juvenile,Imago	-	-	5.5	N.D.(2.0)	5.5	-
					Arthropoda	Malacostraca	Decapoda	Varunidae	<i>Eriocheir japonica</i>	Japanese mitten crab	8	0.18	Juvenile	-	-	6.83	0.53	6.3	-
					Vertebrata	Osteichthyes	Anguilliformes	Anguillidae	<i>Anguilla japonica</i>	Japanese eel	1	0.29	Mature fish	Japanese mitten Crab	Viscera removed	9.05	0.65	8.4	-
					Vertebrata	Osteichthyes	Scorpaeniformes	Cottidae	<i>Cottus reinii</i>	Sculpin	1	0.050	Immature fish	Paragnetina	Viscera removed	14.1	1.1	13	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	4	0.025	Immature fish	-	-	6.1	N.D.(2.6)	6.1	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Pseudogobio esocinus esocinus</i>	Pseudogobio esocinus esocinus	4	0.027	Immature fish	-	-	3.7	N.D.(1.7)	3.7	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Candidia temminckii</i>	Dark chub	5	0.048	Immature fish	-	-	9.4	1.1	8.3	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius auratus</i>	Carassius auratus langsdorfii	2	0.048	Immature fish	-	-	8.8	N.D.(1.1)	8.8	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Gnathopogon elongatus elongatus</i>	Gnathopogon elongatus elongatus	1	0.0090	Mature fish	-	-	12	N.D.(4.3)	12	-
					Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Cobitis biwae</i>	Cobitis biwae	12	0.027	Immature fish,Mature fish	-	-	3.6	N.D.(2.0)	3.6	-
					Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Misgurnus anguillicaudatus</i>	Oriental weatherfish	4	0.029	Immature fish,Mature fish	-	-	3.2	N.D.(2.1)	3.2	-
					Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Plecoglossus altivelis altivelis</i>	Sweetfish	8	0.10	Immature fish	-	-	17.2	1.2	16	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Gymnogobius urotaenia</i>	Goby	12	0.072	Immature fish	-	-	11.97	0.97	11	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius fluviatilis</i>	Rhinogobius fluviatilis	30	0.090	Mature fish	-	-	10.30	0.90	9.4	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius nagoyae</i>	<i>Rhinogobius nagoyae</i>									
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Tridentiger brevispinis</i>	Dusky tripletooth goby	1	0.032	Mature fish	-	-	9.7	N.D.(1.8)	9.7	-
					Vertebrata	Osteichthyes	Siluriformes	Bagridae	<i>Tachysurus tokiensis</i>	Cut-tailed bullhead	3	0.032	Immature fish,Mature fish	-	-	4.7	N.D.(1.7)	4.7	-
					Vertebrata	Cephalaspidomorphi	Petromyzontiformes	Petromyzontidae	<i>Lethenteron reissneri</i>	Far eastern brook lamprey	3	0.011	Ammocoetes(larva)	-	-	3.7	N.D.(3.1)	3.7	-
					Vertebrata	Amphibia	Anura	-	-	Frog	198	0.12	Larva(Tadpole)	-	-	84.1	7.1	77	-
					Vertebrata	Amphibia	Anura	Lithobates	<i>Lithobates catesbeianus</i>	American bullfrog	2	0.0048	Imago	-	-	7.5	N.D.(6.0)	7.5	-
					Vertebrata	Amphibia	Anura	Glandirana	<i>Glandirana rugosa</i>	Wrinkled frog									
					Coarse Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.25	-	-	-	14.1	1.1	13	-

*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.