

Results of Radioactive Material Monitoring of Aquatic Organisms (Location E along the Niida River)

<Location E along the Niida River: Samples collected>

Items	General items		Radioactive materials			
	Water	Sediment	Water (Cs)	Water (Sr)	Sediment (Cs)	Sediment (Sr)
E-2 a	○	○	○	○	○	○

<Location E along the Niida 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)
E-2 a	37.6640°	140.9447°	2021/6/17	14:20	14:40	23.2	23.7	Silt	10YR4/4	None	0.50	16

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

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)												
E-2 a	37.6640°	140.9447°	2021/6/17	14:20	7.4	1.0	5.1	8.8	7.8	0.05	1.5	46	42.5	0.0077	0.20	0.0017

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

<Location E along the Niida 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)			
E-2 a	37.6640°	140.9447°	2021/6/17	14:40	7.4	330	40.4	7.5	22.4	2.591	4.6	6.3	11.8	16.6	45.1	15.6	0.050	9.5	97	2200	0.84

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

<Location E along the Niida 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							
E-2 b	The main stream of the Niida River	37.6635°	140.9452°	2021/6/15	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.0037	-	-	-	120	N.D.(16)	120	-						
					Arthropoda	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Stenopsyche marmorata	101	0.011	Larva	-	-	-	239.3	9.3	230	-					
					Arthropoda	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	Macromia amphigena	31	0.011	Larva(Dragonfly larva)	-	-	-	24	N.D.(6.0)	24	-					
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Melligomphus viridicostus</i>	Melligomphus viridicostus															
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	Davidius															
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Asiagomphus melaenops</i>	Asiagomphus melaenops															
					Arthropoda	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	Protohermes grandis	85	0.053	Larva	-	-	-	12	N.D.(4.2)	12	-					
					Arthropoda	Malacostraca	Decapoda	Cambaridae	<i>Procambarus clarkii</i>	Red swamp crayfish	11	0.18	Imago	-	-	-	17	N.D.(1.4)	17	-					
					Arthropoda	Malacostraca	Decapoda	Palaemonidae	<i>Palaemon paucidens</i>	Common prawn	25	0.029	Juvenile,Imago	-	-	-	12	N.D.(4.7)	12	-					
					Arthropoda	Malacostraca	Decapoda	Atyidae	<i>Paratya improvisa</i>	Freshwater shrimp	105	0.030	Juvenile,Imago	-	-	-	110	N.D.(4.3)	110	-					
					Arthropoda	Malacostraca	Decapoda	Varunidae	<i>Eriocheir japonica</i>	Japanese mitten crab	28	0.27	Juvenile	-	-	-	27	N.D.(1.3)	27	-					
					Vertebrata	Osteichthyes	Anguilliformes	Anguillidae	<i>Anguilla japonica</i>	Japanese eel	1	0.29	Mature fish	Red swamp crawfish	Viscera removed	37.7	1.7	36	-						
					Vertebrata	Osteichthyes	Scorpaeniformes	Cottidae	<i>Cottus pollux</i>	Japanese fluvial sculpin	11	0.26	Immature fish	-	-	-	14	N.D.(1.3)	14	-					
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	60	0.46	Immature fish	-	-	-	13	N.D.(1.2)	13	-					
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Opsarichthys platypus</i>	Pale chub	119	0.29	Immature fish	-	-	-	15	N.D.(1.3)	15	-					
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Pseudogobio esocinus esocinus</i>	Pseudogobio esocinus esocinus	10	0.063	Immature fish	-	-	-	8.5	N.D.(2.5)	8.5	-					
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Sarcocheilichthys variegatus variegatus</i>	Sarcocheilichthys variegatus variegatus	2	0.023	Immature fish,Mature fish	-	-	-	11	N.D.(1.8)	11	-					
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Candidia temminckii</i>	Dark chub	52	0.12	Immature fish	-	-	-	15	N.D.(2.0)	15	-					
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Cyprinus carpio</i>	Common carp	1	0.13	Immature fish	Obscure digesta	Viscera removed	9.7	N.D.(2.1)	9.7	-						
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Gnathopogon elongatus elongatus</i>	Gnathopogon elongatus elongatus	32	0.088	Immature fish	-	-	-	14	N.D.(2.5)	14	-					
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Hemibarbus barbus</i>	Hemibarbus barbus	1	1.8	Mature fish	Obscure digesta	Viscera removed	29.2	1.2	28	1.2						
					Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Cobitis biwae</i>	Cobitis biwae	5	0.0083	Immature fish,Mature fish	-	-	-	10	N.D.(4.5)	10	-					
					Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Misgurnus anguillicaudatus</i>	Oriental weatherfish	1	0.023	Mature fish	-	-	-	17	N.D.(5.3)	17	-					
					Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Plecoglossus altivelis altivelis</i>	Sweetfish	3	0.029	Immature fish	-	-	-	23	N.D.(3.5)	23	-					
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius fluviatilis</i>	Rhinogobius fluviatilis	16	0.057	Mature fish	-	-	-	23	N.D.(4.0)	23	-					
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius nagoyae</i>	Rhinogobius nagoyae															
					Vertebrata	Osteichthyes	Siluriformes	Siluridae	<i>Silurus asotus</i>	Amur catfish	3	2.9	Immature fish,Mature fish	Fish	Viscera removed	85.8	3.8	82	1.0						
										Coarse Particulate Organic Matter	-	-	-	-	-	-	0.24	-	-	82.8	3.8	79	-		
					E-3	The main stream of the Niida River	37.6444°	141.0018°	2021/6/15	Arthropoda	Malacostraca	Decapoda	Varunidae	<i>Eriocheir japonica</i>	Japanese mitten crab	1	0.019	Juvenile	-	-	-	18	N.D.(4.0)	18	-
										Vertebrata	Osteichthyes	Anguilliformes	Anguillidae	<i>Anguilla japonica</i>	Japanese eel	2	0.018	Immature fish	Obscure digesta	Viscera removed	6.9	N.D.(1.8)	6.9	-	
Vertebrata	Osteichthyes	Scorpaeniformes	Cottidae	<i>Cottus reinii</i>						Sculpin	10	0.0064	Immature fish	-	-	-	N.D.	N.D.(7.3)	N.D.(4.5)	-					
Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Opsarichthys platypus</i>						Pale chub	95	0.12	Immature fish	-	-	-	17	N.D.(1.8)	17	-					
Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Candidia temminckii</i>						Dark chub	14	0.032	Immature fish	-	-	-	5.5	N.D.(1.3)	5.5	-					
Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius auratus</i>						Carassius auratus langsdorfii	2	0.035	Immature fish	-	-	-	17	N.D.(4.3)	17	-					
Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Plecoglossus altivelis altivelis</i>						Sweetfish	135	0.89	Immature fish	-	-	-	24	N.D.(5.3)	24	0.14					
Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Gymnogobius urotaenia</i>						Goby	9	0.014	Immature fish	-	-	-	11	N.D.(3.5)	11	-					
Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius fluviatilis</i>						Rhinogobius fluviatilis	25	0.013	Immature fish	-	-	-	3.4	N.D.(3.1)	3.4	-					
Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius nagoyae</i>						Rhinogobius nagoyae															
Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Tridentiger brevispinis</i>						Dusky tripletooth goby	8	0.052	Immature fish,Mature fish	-	-	-	12	N.D.(2.7)	12	-					
Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Acanthogobius flavimanus</i>						Yellowfin Goby	1	0.023	Mature fish	-	-	-	7.7	N.D.(1.9)	7.7	-					
Vertebrata	Osteichthyes	Perciformes	Mugilidae	<i>Mugil cephalus cephalus</i>						Flathead mullet	7	0.010	Immature fish	-	-	-	57	N.D.(9.1)	57	-					

*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.