

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

<Location E along the Niida River: Samples collected>

Locations	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>

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)
E-2 a	37.6640°	140.9447°	2020/8/25	14:15	14:34	26.3	26.0	Sand	10YR4/4	None	0.57	>50

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

Locations	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)		
E-2 a	37.6640°	140.9447°	2020/8/25	14:15	7.8	<0.5	2.5	9.7	7.6	0.04	0.9	2	1.8	N.D.(0.0014)	0.024	0.0015

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>

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)			
E-2 a	37.6640°	140.9447°	2020/8/25	14:34	7.4	456	18.8	1.1	2.4	2.673	6.8	52.0	32.3	6.7	2.2	0.98	9.5	12	240	0.18

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°	2020/8/7	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.0030	-	-	-	160	N.D.(26)	160	-	
				2020/8/22	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	<i>Isonychia valida</i>	Isonychia valida	303	0.021	Larva	-	-	-	178.5	8.5	170	-
				Arthropoda	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Stenopsyche marmorata	21	0.0035	Larva	-	-	-	80	N.D.(14)	80	-	
				Arthropoda	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	Protohermes grandis	67	0.033	Larva	-	-	-	13	N.D.(6.1)	13	-	
				Arthropoda	Malacostraca	Decapoda	Cambaridae	<i>Procambarus clarkii</i>	Red swamp crawfish	1	0.012	Imago	-	-	-	23	N.D.(9.4)	23	-	
				Arthropoda	Malacostraca	Decapoda	Palaemonidae	<i>Palaemon paucidens</i>	Common prawn	56	0.061	Imago	-	-	-	15	N.D.(4.2)	15	-	
				Arthropoda	Malacostraca	Decapoda	Varunidae	<i>Eriocheir japonica</i>	Japanese mitten crab	15	0.15	Juvenile	-	-	-	32	N.D.(1.3)	32	-	
				Vertebrata	Osteichthyes	Anguilliformes	Anguillidae	<i>Anguilla japonica</i>	Japanese eel	2	0.55	Immature fish, Mature fish	Obscure digesta	Viscera removed	57.0	3.0	54	-		
				Vertebrata	Osteichthyes	Scorpaeniformes	Cottidae	<i>Cottus pollux</i>	Japanese fluvial sculpin	2	0.031	Immature fish	-	-	-	14	N.D.(4.9)	14	-	
				Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	68	0.12	Immature fish	-	-	-	17	N.D.(2.0)	17	-	
				Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Opsariichthys platypus</i>	Pale chub	26	0.16	Immature fish, Mature fish	-	-	-	13	N.D.(1.1)	13	-	
				Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Sarcocheilichthys variegatus variegatus</i>	Sarcocheilichthys variegatus variegatus	1	0.0078	Immature fish	-	-	-	18	N.D.(18)	18	-	
				Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Candidia temminckii</i>	Dark chub	1	0.031	Mature fish	-	-	-	18	N.D.(4.0)	18	-	
				Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius auratus</i>	Carassius auratus langsdorffii	1	0.027	Mature fish	-	-	-	24	N.D.(3.9)	24	-	
				Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Hemibarbus barbus</i>	Hemibarbus barbus	31	0.039	Immature fish	-	-	-	6.4	N.D.(3.9)	6.4	-	
				Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Cobitis biwae</i>	Cobitis biwae	3	0.0091	Immature fish, Mature fish	-	-	-	21	N.D.(9.1)	21	-	
				Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Misgurnus anguillicaudatus</i>	Oriental weatherfish	3	0.026	Immature fish, Mature fish	-	-	-	17	N.D.(5.2)	17	-	
				Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Plecoglossus altivelis altivelis</i>	Sweetfish	15	0.37	Immature fish, Mature fish	-	-	-	80.0	3.0	77	-	
				Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius fluviatilis</i>	Rhinogobius fluviatilis	16	0.055	Mature fish	-	-	-	24	N.D.(4.4)	24	-	
				Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius nagoyae</i>	Rhinogobius nagoyae											
				Vertebrata	Osteichthyes	Siluriformes	Siluridae	<i>Silurus asotus</i>	Amur catfish	2	2.0	Mature fish	Empty stomach	Viscera removed	76.0	4.0	72	0.93		
Vertebrata	Cephalaspidomorphi	Petromyzontiformes	Petromyzontidae	<i>Lethenteron reissneri</i>	Far eastern brook lamprey	9	0.024	Ammocoetes(larva)	-	-	-	14	N.D.(6.3)	14	-					
Vertebrata	Amphibia	Anura	-	-	Frog	116	0.12	Larva(Tadpole)	-	-	-	538	28	510	-					
Vertebrata	Plantae	-	-	-	Bottom fallen leaves	-	0.21	-	-	-	-	40.7	1.7	39	-					
E-3	The main stream of the Niida River	37.6444°	141.0018°	2020/8/25	Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Pseudogobio esocinus esocinus</i>	Pseudogobio esocinus esocinus	2	0.045	Mature fish	-	-	6.1	N.D.(3.6)	6.1	-	
				Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Plecoglossus altivelis altivelis</i>	Sweetfish	19	0.61	Immature fish, Mature fish	-	-	38.9	1.9	37	-		

*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.