

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

<Location E along the Niida River: Samples collected>

Items 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>

Items 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°	2018/6/7	13:56	14:20	21.5	22.0	Silt with sand	2.5Y3/3	Plant pieces,Tubifex	0.53	>50

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

Items 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)	(nS/m)	(mg/L)	(mg/L)	(FNU)	(Bq/L)	(Bq/L)	(Bq/L)		
E-2 a	37.6640°	140.9447°	2018/6/7	13:56	7.0	<0.5	2.4	9.7	8.1	0.05	1.0	3	2.4	0.0037	0.031	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>

Items Locations	Latitude and longitude of the location		Survey date and time		pH	Redox potential E _h (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°	2018/6/7	14:20	7.0	122	21.9	3.0	4.5	2.693	15.2	15.0	36.1	19.0	6.6	8.1	0.38	19	150	1500	0.36

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°	2018/6/2	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.0094	-	-	-	226	26	200	-	
					Algae/plant	Monocotyledoneae	Poales	Poaceae	<i>Phragmites australis</i>	Common reed	-	0.17	-	-	-	22.3	2.3	20	-	
					Arthropoda	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Stenopsyche marmorata	89	0.015	Larva	-	-	-	105	10	95	-
					Arthropoda	Malacostraca	Decapoda	Cambaridae	<i>Procambarus clarkii</i>	Red swamp crawfish	9	0.081	Juvenile, Imago	-	-	-	56.4	5.4	51	-
					Arthropoda	Malacostraca	Decapoda	Palaemonidae	<i>Palaemon paucidens</i>	Common prawn	44	0.079	Imago	-	-	-	25.6	2.6	23	-
					Arthropoda	Malacostraca	Decapoda	Atyidae	<i>Paratya improvisa</i>	Freshwater shrimp	353	0.078	Juvenile, Imago	-	-	-	39.4	3.4	36	-
					Arthropoda	Malacostraca	Decapoda	Varunidae	<i>Eriocheir japonica</i>	Japanese mitten crab	8	0.037	Juvenile	-	-	-	40.5	4.5	36	-
					Mollusca	Gastropoda	Discopoda	Pleuroceridae	<i>Semisulcospira libertina</i>	Semisulcospira libertina	30	0.022	Imago	-	-	-	75	13	62	-
					Vertebrata	Osteichthyes	Anguilliformes	Anguillidae	<i>Anguilla japonica</i>	Japanese eel	1	0.42	Mature fish	Empty stomach	-	-	92.7	8.7	84	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	20	0.23	Immature fish, Mature fish	-	-	-	30.9	2.9	28	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Opsarichthys platypus</i>	Pale chub	10	0.11	Immature fish	-	-	-	39.8	3.8	36	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Pseudogobio esocinus esocinus</i>	Pseudogobio esocinus esocinus	17	0.44	Immature fish, Mature fish	-	-	-	26.4	1.4	25	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Sarcocheilichthys variegatus variegatus</i>	Sarcocheilichthys variegatus variegatus	5	0.047	Immature fish, Mature fish	-	-	-	21.5	2.5	19	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius auratus</i>	Carassius auratus langsdorffii	1	0.060	Mature fish	Obscure digesta	-	-	26.5	2.5	24	-
					Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Misgurnus anguillicaudatus</i>	Oriental weatherfish	3	0.037	Mature fish	-	-	-	31.7	2.7	29	-
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Yamame trout	1	0.093	Immature fish	Orthoptera, Ecdyonurus yoshidae, Siphonuridae, Apatania, Simulium vittatum	-	-	30.4	3.4	27	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius fluviatilis</i>	Rhinogobius fluviatilis	5	0.038	Mature fish	-	-	-	51.1	6.1	45	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius nagoyae</i>	Rhinogobius nagoyae	4	2.3	Mature fish	-	-	-	83.3	7.3	76	0.71
					Vertebrata	Osteichthyes	Siluriformes	Siluridae	<i>Silurus asotus</i>	Amur catfish	1	1.4	Mature fish	Freshwater shrimp, Plant pieces	-	-	130	10	120	1.0
					Vertebrata	Osteichthyes	Siluriformes	Siluridae	<i>Silurus asotus</i>	Amur catfish	1	1.4	Mature fish	Red swamp crawfish	-	-	130	10	120	1.0
					Vertebrata	Amphibia	Anura	-	-	Frog	22	0.013	Larva (Tadpole)	-	-	-	287	27	260	-
					Vertebrata	Amphibia	Anura	Lithobates	<i>Lithobates catesbeianus</i>	American Bullfrog	2	0.90	Imago	-	-	-	32.8	4.8	28	0.69
					Vertebrata	Amphibia	Anura	Glandirana	<i>Glandirana rugosa</i>	Wrinkled Frog	5	0.028	Imago	-	-	-	33.0	3.0	30	-
Vertebrata	Amphibia	Anura	Pelophylax	<i>Pelophylax porosus porosus</i>	Tokyo Daruma pond frog	5	0.028	Imago	-	-	-	33.0	3.0	30	-					
Coarse Particulate Organic Matter	-	-	-	-	-	-	-	-	Bottom fallen leaves	-	-	0.25	-	-	86.9	7.9	79	-		
E-3	The main stream of the Niida River	37.6444°	141.0018°	2018/7/1	Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Plecoglossus altivelis altivelis</i>	Sweetfish	143	3.1	Immature fish, Mature fish	-	-	47.9	4.9	43	0.25	

*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.