

OResults of Radioactive Material Monitoring of Aquatic Organisms (Location N along the Ukedo River)

<Location N along the Ukedo River: Samples collected>

Locations	General items		Radioactive materials			
	Water	Sediment	Water (Cs)	Water (Sr)	Sediment (Cs)	Sediment (Sr)
N-1	○	○	○	○	○	○
N-2	○	○	○	-	○	-
N-3	○	○	○	-	○	-

<Location N along the Ukedo 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)
N-1	37.4998°	140.9835°	2024/8/24	08:00	08:00	23.9	23.7	Sand gravel	7.5Y5/2	None	0.35	>50
N-2	37.5070°	140.9456°		10:10	10:10	26.5	26.5	Sand gravel	7.5Y6/3	None	0.50	>50
N-3	37.4754°	140.9598°		12:40	12:40	26.6	26.3	Sand	7.5Y5/3	None	0.52	>50

<Location N along the Ukedo 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)												
N-1	37.4998°	140.9835°	2024/8/24	08:00	6.7	1.1	3.7	7.4	7.5	0.04	1.9	1	1.6	N.D.(0.0017)	0.11	0.0026
N-2	37.5070°	140.9456°		10:10	7.1	1.3	4.1	8.5	6.1	0.04	2.2	2	1.9	0.0021	0.18	-
N-3	37.4754°	140.9598°		12:40	7.4	1.0	2.0	8.2	8.3	0.05	0.9	3	1.1	N.D.(0.0015)	0.023	-

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

<Location N along the Ukedo 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)
N-1	37.4998°	140.9835°	2024/8/24	08:00	6.9	432	18.6	0.8	0.7	2.650	24.3	28.6	35.5	10.5	1.1	0.92	19	30	2100	0.18
N-2	37.5070°	140.9456°		10:10	7.3	472	18.6	0.7	0.4	2.640	46.2	39.3	11.7	0.3	2.5	1.9	19	26	1800	-
N-3	37.4754°	140.9598°		12:40	7.2	471	23.0	1.2	1.0	2.650	5.5	10.9	75.1	7.4	1.1	0.49	9.5	26	1600	-

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

<Location N along the Ukedo 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		
N-1	The main stream of the Ukedo River	37.4998°	140.9835°	2024/8/24	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.0037	-	-	-	510	N.D.(38)	510	-	
					Algae/plant	Monocotyledoneae	Najadales	Potamogetonaceae	<i>Potamogeton crispus</i>	Curly-leaf pondweed	-	0.22	-	-	-	26	N.D.(1.2)	26	-	
					Arthropoda	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	<i>Stenopsyche marmorata</i>	80	0.020	-	-	-	210	N.D.(9.5)	210	-	
					Arthropoda	Malacostraca	Decapoda	Palaemonidae	<i>Palaemon paucidens</i>	Common prawn	20	0.035	Imago	-	-	-	72	N.D.(6.3)	72	-
					Arthropoda	Malacostraca	Decapoda	Varunidae	<i>Eriocheir japonica</i>	Japanese mitten crab	27	0.089	Juvenile	-	-	-	120	N.D.(3.0)	120	-
					Vertebrata	Osteichthyes	Anguilliformes	Anguillidae	<i>Anguilla japonica</i>	Japanese eel	1	0.45	Mature fish	Empty stomach	Viscera removed	294.5	4.5	290	-	
					Vertebrata	Osteichthyes	Scorpaeniformes	Cottidae	<i>Cottus reinii</i>	Sculpin	5	0.030	Immature fish	-	-	-	59	N.D.(5.3)	59	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	22	0.17	Immature fish, Mature fish	Obscure digesta	Viscera removed	110	N.D.(2.6)	110	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Opsarichthys platypus</i>	Pale chub	102	0.32	Immature fish	-	-	57	N.D.(1.2)	57	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Cyprinus carpio</i>	Common carp	1	3.7	Mature fish	Obscure digesta	Viscera removed	131.6	1.6	130	1.1	
					Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Plecoglossus altivelis altivelis</i>	Sweetfish	47	0.22	Immature fish, Mature fish	-	-	283.4	3.4	280	-	
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius nagoyae</i>	<i>Rhinogobius nagoyae</i>	46	0.067	Immature fish	-	-	73	N.D.(4.4)	73	-	
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius</i> sp.	Rhinogobius			73	N.D.(4.4)	73	-				
										Coarse Particulate Organic Matter	-	-	-	Bottom fallen leaves	-	0.20	-	-	142.0	2.0
N-2	The main stream of the Ukedo River	37.5070°	140.9456°	2024/8/24	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.0036	-	-	-	17	N.D.(9.4)	17	-	
					Arthropoda	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	<i>Macromia amphigena</i>	58	0.016	Larva (Dragonfly larva)	-	-	57	N.D.(13)	57	-	
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Melligomphus viridicostus</i>	<i>Melligomphus viridicostus</i>										
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	<i>Sieboldius albardae</i>										
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Davidius</i> sp.	<i>Davidius</i>										
					Arthropoda	Malacostraca	Decapoda	Atyidae	<i>Paratya improvisa</i>	Freshwater shrimp	151	0.010	Juvenile	-	-	48	N.D.(4.6)	48	-	
					Vertebrata	Osteichthyes	Anguilliformes	Anguillidae	<i>Anguilla japonica</i>	Japanese eel	4	0.032	Immature fish	-	-	75	N.D.(7.4)	75	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	13	0.016	Immature fish	-	-	50	N.D.(8.9)	50	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Opsarichthys platypus</i>	Pale chub	135	0.30	Immature fish	-	-	59	N.D.(1.3)	59	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Pseudorasbora parva</i>	Stone moroko	14	0.011	Immature fish, Mature fish	-	-	32	N.D.(6.4)	32	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Cobitis biwae</i>	<i>Cobitis biwae</i>	7	0.011	Immature fish, Mature fish	-	-	50	N.D.(13)	50	-	
					Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Plecoglossus altivelis altivelis</i>	Sweetfish	101	0.47	Immature fish, Mature fish	-	-	356.5	6.5	350	-	
					Vertebrata	Osteichthyes	Siluriformes	Siluridae	<i>Silurus asotus</i>	Amur catfish	1	1.0	Mature fish	Empty stomach	Viscera removed	356.3	6.3	350	-	
										Coarse Particulate Organic Matter	-	-	-	Bottom fallen leaves	-	0.25	-	-	780	10
N-3	The main stream of the Takase River	37.4754°	140.9598°	2024/8/24	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.0023	-	-	-	280	N.D.(46)	280	-	
					Arthropoda	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	<i>Stenopsyche marmorata</i>	55	0.010	Larva	-	-	46	N.D.(11)	46	-	
					Arthropoda	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	<i>Macromia amphigena</i>	54	0.012	Larva (Dragonfly larva)	-	-	23	N.D.(5.1)	23	-	
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Nihogomphus viridis</i>	<i>Nihogomphus viridis</i>										
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Melligomphus viridicostus</i>	<i>Melligomphus viridicostus</i>										
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	<i>Sieboldius albardae</i>										
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Davidius</i> sp.	<i>Davidius</i>										
					Arthropoda	Insecta	Odonata	Libellulidae	<i>Orthetrum albistylum speciosum</i>	Common skimmer										
					Arthropoda	Insecta	Odonata	Aeshnidae	<i>Boyeria maclachlani</i>	<i>Boyeria maclachlani</i>										
					Arthropoda	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	<i>Protohermes grandis</i>	36	0.020	Larva	-	-	5.8	N.D.(1.9)	5.8	-	
					Arthropoda	Malacostraca	Decapoda	Atyidae	<i>Paratya improvisa</i>	Freshwater shrimp	288	0.030	Juvenile	-	-	18	N.D.(2.9)	18	-	
					Arthropoda	Malacostraca	Decapoda	Varunidae	<i>Eriocheir japonica</i>	Japanese mitten crab	36	0.31	Juvenile	-	-	47	N.D.(1.5)	47	-	
					Vertebrata	Osteichthyes	Scorpaeniformes	Cottidae	<i>Cottus reinii</i>	Sculpin	19	0.14	Immature fish	-	-	20	N.D.(1.8)	20	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Opsarichthys platypus</i>	Pale chub	6	0.025	Immature fish	-	-	31	N.D.(4.4)	31	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Candidia temminckii</i>	Dark chub	10	0.040	Immature fish, Mature fish	-	-	33	N.D.(4.7)	33	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Nemacheilus toni</i>	Stone loach	86	0.18	Immature fish	-	-	12	N.D.(1.3)	12	-	
					Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Plecoglossus altivelis altivelis</i>	Sweetfish	136	1.5	Immature fish, Mature fish	-	-	35	N.D.(1.3)	35	0.27	
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius nagoyae</i>	<i>Rhinogobius nagoyae</i>	24	0.037	Immature fish, Mature fish	-	-	22	N.D.(4.8)	22	-	
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Sicyopterus japonicus</i>	Monk goby	36	0.10	Immature fish	-	-	30	N.D.(3.0)	30	-	
Vertebrata	Osteichthyes	Siluriformes	Bagridae	<i>Tachysurus tokiensis</i>	Cut-tailed bullhead	1	0.067	Mature fish	Freshwater shrimp	Viscera removed	38	N.D.(1.6)	38	-						
					Coarse Particulate Organic Matter	-	-	-	Bottom fallen leaves	-	0.17	-	-	40	N.D.(1.5)	40	-			

*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.