

OResults of Radioactive Material Monitoring of Aquatic Organisms (Location D along the Mano River)

<Location D along the Mano River: Samples collected>

Locations	Items	General items		Radioactive materials			
		Water	Sediment	Water (Cs)	Water (Sr)	Sediment (Cs)	Sediment (Sr)
D-4 a		○	○	○	○	○	○

<Location D along the Mano River: Site measurement item>

Locations	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)
D-4 a		37.7308°	140.9081°	2023/6/15	08:25	08:40	16.9	17.5	Sand	10YR3/2	None	0.45	>50

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

Locations	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)												
D-4 a		37.7308°	140.9081°	2023/6/15	08:25	7.2	0.5	3.4	9.4	11.8	0.06	1.6	3	2.1	N.D.(0.0013)	0.0066	0.0013

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

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

Items	Latitude and longitude of the location		Survey date and time		pH	Redox potential E _{NHLE} (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)
Locations																					
D-4 a	37.7308°	140.9081°	2023/6/15	08:40	7.6	496	16.8	2.5	3.8	2.700	34.3	34.3	15.2	6.8	5.7	3.7	1.4	9.5	3.0	130	0.62

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

<Location D along the Mano 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	
D-3	The main stream of the Mano River	37.7051°	140.9623°	2023/6/16	Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Pseudaspius hakonensis</i>	Japanese dace	10	0.18	Immature fish	-	-	4.1	N.D.(0.34)	4.1	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Opsariichthys platypus</i>	Pale break	66	1.0	Immature fish, Mature fish	-	-	3.4	N.D.(0.44)	3.4	0.18
					Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Plecoglossus altivelis altivelis</i>	Ayu sweetfish	106	1.8	Immature fish	-	-	5.7	N.D.(0.59)	5.7	0.066
D-4 b	The main stream of the Mano River	37.7312°	140.9096°	2023/6/9	Algae/plant	-	-	-	-	Sediment deposited on riverbed (including algae)	-	0.0032	-	-	-	110	N.D.(21)	110	-
					Arthropoda	Malacostraca	Decapoda	Cambaridae	<i>Procambarus clarkii</i>	Red swamp crawfish	13	0.15	Juvenile,Imago	-	-	11	N.D.(2.0)	11	-
					Arthropoda	Malacostraca	Decapoda	Palaemonidae	<i>Palaemon paucidens</i>	Lake prawn	52	0.073	Imago	-	-	2.9	N.D.(0.50)	2.9	-
					Arthropoda	Malacostraca	Decapoda	Atyidae	<i>Paratya improvisa</i>	Freshwater shrimp	289	0.087	Juvenile,Imago	-	-	4.8	N.D.(0.60)	4.8	-
					Arthropoda	Malacostraca	Decapoda	Varunidae	<i>Eriocheir japonica</i>	Japanese mitten crab	11	0.16	Juvenile	-	-	5.1	N.D.(0.47)	5.1	-
					Mollusca	Bivalvia	Unionoida	Unionidae	<i>Inversiumio jokohamensis</i>	Inversiumio	8	0.037	Juvenile	-	Molluscous part	5.0	N.D.(1.1)	5.0	-
					Mollusca	Gastropoda	Discopoda	Pleuroceridae	<i>Semisulcospira libertina</i>	Freshwater snail	25	0.027	Juvenile,Imago	-	Molluscous part	11	N.D.(2.3)	11	-
					Vertebrata	Osteichthyes	Anguilliformes	Anguillidae	<i>Anguilla japonica</i>	Japanese eel	1	0.062	Immature fish	Obscure digesta	Viscera removed	5.6	N.D.(0.69)	5.6	-
					Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Plecoglossus altivelis altivelis</i>	Ayu sweetfish	17	0.23	Immature fish	-	-	7.0	N.D.(1.2)	7.0	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius fluviatilis</i>	Rhinogobius	13	0.038	Immature fish, Mature fish	-	-	4.7	N.D.(1.1)	4.7	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius nagoyae</i>	Rhinogobius									
					Vertebrata	Amphibia	Anura	Ranidae	<i>Rana japonica</i>	Japanese brown frog	1	0.024	Imago	-	-	6.8	N.D.(1.6)	6.8	-
D-5	The main stream of the Mano River	37.7214°	140.8889°	2023/6/16	Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou masou</i>	Masu salmon	6	0.49	Immature fish, Mature fish	Aquatic insect,Frog	Viscera removed	101.0	2.0	99	-

*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.