

OResults of Radioactive Material Monitoring of Aquatic Organisms (Location M off Iwaki City)

< Location M off Iwaki City (Hisanohama): Samples collected >

Items	General items		Radioactive materials			
	Water	Sediment	Water (Cs)	Water (Sr)	Sediment (Cs)	Sediment (Sr)
M-1	○	○	—	—	○	—
M-2	○	○	○	○	○	○
M-3	—	—	—	—	—	—
M-4	—	—	—	—	—	—

< Location M off Iwaki City (Hisanohama): 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)	Secchi disk depth (m)
M-1	37.1740°	141.0797°	2014/12/12	—	8:20	—	14.9	Fine sand	10Y3/2	Shell fragments	—	—
M-2	37.1993°	141.0842°		8:45	9:05	15.9	15.0	Fine sand	10Y3/2	Shell fragments	41.0	14.9
M-3	37.2321°	141.0932°	—	—	9:33	—	15.0	Fine sand	10Y3/2	Shell fragments	—	—
M-4	37.1547°	141.0016°	—	—	—	—	—	—	—	—	—	—

< Location M off Iwaki City (Hisanohama): 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)	Electrical (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												
M-2 (Surface layer)	37.1993°	141.0842°	2014/12/12	8:45	8.1	<0.5	1.2	8.3	5.270	34.36	0.7	3	0.5	N.D.(0.0012)	0.0035	—
M-2 (Deep layer)				8:35	8.1	<0.5	1.2	7.8	5.210	34.24	0.7	2	<0.2	N.D.(0.0012)	0.0043	0.00082

< Location M off Iwaki City (Hisanohama): General survey items/Analysis of radioactive materials Sediment >

Items	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							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)
M-1	37.1740°	141.0797°	2014/12/12	8:20	8.1	191	26.4	2.1	1.6	2.766	0.0	0.6	1.7	85.0	6.5	6.2	0.15	2	22	72	—
M-2				9:05	8.2	257	25.7	2.0	1.5	2.797	0.0	2.6	3.7	88.1	1.4	4.2	0.16	2	10	39	N.D.(0.16)
M-3				9:33	8.2	254	26.2	2.1	1.2	2.793	0.0	4.1	5.2	84.7	1.8	4.2	0.16	2	22	74	—

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

< Location M off Iwaki City (Hisanohama): Survey items Aquatic organisms >

Location	Latitude and longitude of the location		Sampling Date	Division	Class	Order	Family	Species name	English name	Population	Sample weight (kg-wet)	Note			Cs-134 (Bq/kg-wet)	Cs-137 (Bq/kg-wet)	Sr-90 (Bq/kg-wet)			
	Latitude	Longitude										Growth stage	Stomach contents	Measurement site						
M-1 M-2 M-3 M-4	Hisanohama Coastal areas	37.1740° 37.1993° 37.2321°	141.0797° 141.0842° 141.0932°	2014/12/12	Phaeophyta	Phaeophyceae	Laminariales	Alariaceae	<i>Undaria undarioides</i>	Undaria undarioides (Yendo)	considerable number	0.24	—	—	—	0.70	2.1	—		
					Echinoderm	Echinoidea	Echinoidea	Strongylocentrotidae	<i>Strongylocentrotus nudus</i>	Northern sea urchin	37	3.1	Imago	—	—	—	0.46	1.4	3.7	
					Mollusca	Gastropoda	Archaeogastropoda	Haliotis asinina	<i>Haliotis discus</i>	Abalone	6	0.92	Imago	—	—	—	N.D.(0.32)	N.D.(0.30)	—	
					Vertebrata	Osteichthyes	Pleuronectiformes	Pleuronectiformes	<i>Pseudopleuronectes herzensteini</i>	Yellow striped flounder	5	2.0	Mature fish (3-year-old)	Annelida	—	—	—	1.4	3.9	0.044
					Vertebrata	Osteichthyes	Pleuronectiformes	Pleuronectiformes	<i>Pleuronectes yokohamae</i>	Marbled sole	4	2.6	Mature fish (3-year-old)	Crustaceans, Clams	—	—	—	0.96	2.8	0.024
					Vertebrata	Osteichthyes	Pleuronectiformes	Paralichthyidae	<i>Paralichthys olivaceus</i>	Bastard halibut	3	2.5	Mature fish (4-year-old)	Empty stomach	—	—	—	0.45	1.1	N.D.(0.017)
					Vertebrata	Osteichthyes	Perciformes	Lateolabridae	<i>Lateolabrax japonicus</i>	Japanese sea bass	1	2.0	Mature fish (5-year-old)	Fish	—	—	—	4.1	14	—
					Vertebrata	Osteichthyes	Perciformes	Sparidae	<i>Eysynnys japonica</i>	Crimson sea-bream	1	0.90	Mature fish (5-year-old)	Crustaceans	—	—	—	0.37	1.5	—
					Vertebrata	Chondrichthyes	Rajiformes	Rajidae	<i>Okamejei kenojei</i>	Skate	3	2.1	Mature fish	Fish, crustaceans	—	—	—	5.0	16	0.16
Vertebrata	Chondrichthyes	Carcharhiniformes	Triakidae	<i>Mustelus manazo</i>	Starspotted smooth-hound	3	2.4	Mature fish	Crustaceans	—	—	—	0.43	1.7	N.D.(0.016)					

*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 name of the dominant one largest in number is selected.

*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: A statement in red in the "Growth stage" column shows the age assessed based on squama or otolith

*6: Plankton (suspended algae) is the residue remaining after the filtration of lake water or seawater with a plankton net (40µm-mesh).

*7: 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.

*8: N.D. means to be below the detection limit and figures in parentheses show the detection limit.

*9: Activity concentrations include counting errors, but the details are omitted here.