

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

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

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

< Location M off Iwaki City (Hisanohama): Site measurement item >

Locations	Latitude and longitude of the location		Survey date and time			Water					Sediment		Other	
	Scheduled latitude	Scheduled longitude	Date	Time (water)	Time (sediment)	Water temperature (degrees C)	Sediment temperature (degrees C)	Property	Color	Contaminants	Water depth (m)	Transparency (m)		
M-1	37.1736°	141.0788°	2015/10/23	-	08:10	-	18.1	Fine sand	10Y3/2	Shell fragment	-	-		
M-2(Surface layer)	37.1996°	141.0853°		08:55	09:10	18.1	18.0	Fine sand	10Y3/2	Shell fragment	46.5	7.0		
M-2(Deep layer)	37.1996°	141.0853°		08:30	-	18.1	1.5	-	-	-	-	-		
M-3	37.2324°	141.0935°		-	09:35	-	18.1	Fine sand	10Y3/2	Shell fragment	-	-		

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

Locations	Latitude and longitude of the location		Survey date and time		pH	BOD	COD	DO	Electrical conductivity	Salinity	TOC	SS	Turbidity	Cs-134	Cs-137	Sr-90
	Scheduled latitude	Scheduled longitude	Date	Time (water)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(ns/m)	(%)	(mg/L)	(mg/L)	(FNU)	(Bq/L)	(Bq/L)	(Bq/L)
M-2(Surface layer)	37.1996°	141.0853°	2015/10/23	8:55	8.1	<0.5	1.5	7.8	5140	33.51	0.9	3	0.5	0.0031	0.016	-
M-2(Deep layer)	37.1996°	141.0853°		8:30	8.0	<0.5	1.2	7.6	5200	33.82	1.0	3	1.1	0.0025	0.014	0.0010

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

Locations	Latitude and longitude of the location		Survey date and time		pH	Redox potential EN,H.E (mV)	Water content (%)	IL (%)	TOC (mg/g-dry)	Soil particle density (g/cm3)	Grain size distribution						Cs-134 (Bq/kg-dry)	Cs-137 (Bq/kg-dry)	Sr-90 (Bq/kg-dry)		
	Scheduled latitude	Scheduled 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 (0.005-0.0075mm) (%)	Clay (Less than 0.005mm) (%)				Median grain diameter	Maximum grain diameter
M-1	37.1736°	141.0788°	2015/10/23	8:10	7.9	284	29.1	2.3	1.9	2.736	0.0	-	1.2	76.4	14.6	7.8	0.12	0.85	22	95	-
M-2	37.1996°	141.0853°		9:10	7.9	298	24.0	1.8	1.1	2.858	0.0	-	3.2	92.8	2.1	1.9	0.14	0.85	8.6	36	N.D.(0.15)
M-3	37.2324°	141.0935°		9:35	7.9	302	27.9	1.9	1.3	2.784	0.0	-	2.8	93.1	2.1	2.0	0.14	0.85	6.7	27	-

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

Location	Sampling point	Latitude and longitude of the location		Sampling Date	Division	Class	Order	Family	Species 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 sit	Cs-134	Cs-137		
M-1 M-2 M-3	Offshore of Hisanohama	37.1736° 37.1996° 37.2324°	141.0788° 141.0853° 141.0935°	2015/10/23	Arthropod	Malacostraca	Decapoda	Portunidae	<i>Portunus trituberculatus</i>	Japanese blue crab	2	0.84	Imago	-	-	-	1.0	4.3	0.053
					Vertebrata	Osteichthyes	Scorpaeniformes	Triglididae	<i>Chelidomichthys spinosus</i>	Gurnard	5	2.8	Mature fish (9-year-old)	Empty stomach	Viscera removed	0.45	1.6	0.031	
					Vertebrata	Osteichthyes	Pleuronectiformes	Pleuronectiformes	<i>Kareius bicoloratus</i>	Stone flounder	2	0.62	Mature fish (2-year-old)	Ragworm	Viscera removed	N.D.(0.45)	1.1	-	
					Vertebrata	Osteichthyes	Pleuronectiformes	Paralichthyidae	<i>Paralichthys olivaceus</i>	Bastard halibut	3	4.9	Mature fish (4-year-old)	Empty stomach	Viscera removed	N.D.(0.43)	0.67	N.D.(0.020)	
					Vertebrata	Osteichthyes	Pleuronectiformes	Pleuronectiformes	<i>Pleuronectes yokohamae</i>	Marbled sole	2	0.99	Mature fish (3-year-old)	Ragworm	Viscera removed	N.D.(0.87)	2.4	N.D.(0.021)	
					Vertebrata	Osteichthyes	Perciformes	Lateolabracidae	<i>Lateolabrax japonicus</i>	Japanese sea bass	8	5.0	Mature fish (3-year-old)	Anchovy	Viscera removed	0.42	2.0	0.022	
					Vertebrata	Osteichthyes	Perciformes	Sparidae	<i>Erymnis japonica</i>	Crimson sea-bream	3	1.5	Mature fish (5-year-old)	Empty stomach	Viscera removed	N.D.(0.53)	2.7	0.037	
					Vertebrata	Osteichthyes	Tetraodontiformes	Tetraodontidae	<i>Takifugu noelemonus</i>	Pufferfish	3	1.1	Mature fish	Crabs, Shellfish	Viscera removed	N.D.(0.83)	N.D.(0.82)	0.061	
					Vertebrata	Chondrichthyes	Rajiformes	Rajidae	<i>Okamejei kenoei</i>	Skate	2	1.5	Mature fish	Shrimp	Viscera removed	2.1	9.7	0.24	
					Vertebrata	Chondrichthyes	Carcharhiniformes	Triakidae	<i>Mustelus manazo</i>	Starspotted smooth-hound	3	2.6	Mature fish	Ragworm	Viscera removed	0.80	3.1	0.023	
M-4	Hisanohama Coastal areas	-	-	2015/10/22	Brown algae	Phaeophyceae	Laminariales	Lessoniaceae	<i>Eisenia bicyclis</i>	Eisenia	-	0.29	-	-	-	0.40	0.85	-	
					Mollusca	Gastropoda	Archaeogastropoda	Haliotis asinina	-	abalone	4	0.54	Imago	-	-	0.58	1.7	-	
					Echinoderm	Echinoidea	Echinoidea	Strongylocentrotidae	<i>Strongylocentrotus nudus</i>	Northern sea urchin	5	0.45	Imago	-	-	N.D.(0.36)	0.73	-	

*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 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: 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.