

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

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

Items Locations	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 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)	
M-1	37.17313°	141.07577°	2014/9/5	—	8:15	—	20.8	Fine sand	10Y3/2	Shell fragments	—	—	
M-2	37.19920°	141.08567°		8:40	9:20	20.2	19.5	Fine sand	10Y4/2	Shell fragments	40.5	9.5	
M-3	37.23214°	141.09353°		—	—	9:45	—	18.5	Fine sand	10Y4/1	Shell fragments	—	—
M-4	37.15465°	141.00155°		—	—	—	—	—	—	—	—	—	—

General survey items/Analysis of radioactive materials Water >

Items Locations	Latitude and longitude of the location		Survey date and time		pH	BOD (mg/L)	COD (mg/L)	DO (mg/L)	Electrical 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												
M-2 (Surface layer)	37.19920°	141.08567°	2014/9/5	8:40	8.1	<0.5	1.5	8.2	5,180	33.05	1.1	3	0.6	0.0034	0.0099	—
M-2 (Deep layer)				8:50	8.1	<0.5	1.8	9.1	5,250	33.60	0.9	3	0.6	0.0013	0.0044	0.0010

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

Items Locations	Latitude and longitude of the location		Survey date and time		pH	Redox potential E <sub>NHLE</sub> (mV)	Water content (%)	IL (%)	TOC (mg/g-dry)	Soil particle density (g/cm <sup>3</sup> )	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	37.17313°	141.07577°	2014/9/5	8:15	7.9	245	28.6	2.0	1.9	2,738	0.0	0.0	0.4	1.6	82.7	7.5	7.8	0.15	2	30	130	—
M-2	37.19920°	141.08567°		9:20	8.0	238	26.5	1.8	1.7	2,776	0.9	0.8	2.7	92.0	1.6	2.0	0.16	9.5	24	84	N.D.(0.18)	
M-3	37.23214°	141.09353°		9:45	8.0	243	27.9	2.1	1.8	2,753	1.2	0.7	2.6	87.2	4.1	4.2	0.16	9.5	42	130	—	
M-4	37.15465°	141.00155°		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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						
Hisanohama Coastal areas Hisanohama Coastal areas Offshore of Hisanohama Offshore of Hisanohama Offshore of Hisanohama Offshore of Hisanohama Offshore of Hisanohama Offshore of Hisanohama Offshore of Hisanohama Offshore of Hisanohama Offshore of Hisanohama Offshore of Hisanohama Offshore of Hisanohama Offshore of Hisanohama Offshore of Hisanohama Hisanohama Coastal areas	37.17313° 37.19920° 37.23214° 37.15465°	141.07577° 141.08567° 141.09353° 141.00155°	2014/9/5	Brown algae	Phaeophyceae	Laminariales	Lessoniaceae	<i>Eisenia bicyclis</i>	Eisenia	Considerable number	0.32	—	—	—	N.D.(0.29)	0.50	—			
				Echinoderm	Echinoida	Echinoida	Strongylocentrotidae	<i>Strongylocentronus nudus</i>	Northern sea urchin	30	3.0	Imago	—	—	—	0.78	2.3	—	12	
				Echinodermata	Asteroida	Forcipulatida	Asteriidae	<i>Distolasterias nipon</i>	Japan starfish	6	1.5	Imago	—	—	—	N.D.(0.32)	0.44	—	—	
				Arthropod	Malacostraca	Decapoda	Portunidae	<i>Portunus trituberculatus</i>	Japanese blue crab	1	0.17	Imago	—	—	—	N.D.(0.59)	0.93	—	—	
				Vertebrata	Osteichthyes	Scorpaeniformes	Triglidae	<i>Chelidonichthys spinosus</i>	Gurnard	18	1.5	Mature fish (3-year-old)	—	—	—	Viscera removed	0.43	0.74	—	—
				Vertebrata	Osteichthyes	Pleuronectiformes	Pleuronectiformes	<i>Kareius bicoloratus</i>	Stone flounder	2	0.63	Mature fish (3-year-old)	Some (details unknown)	—	—	Viscera removed	0.83	2.3	—	—
				Vertebrata	Osteichthyes	Pleuronectiformes	Pleuronectiformes	<i>Pleuronectes yokohamae</i>	Marbled sole	3	1.3	Mature fish (3-year-old)	Annelida	—	—	Viscera removed	1.6	4.4	—	—
				Vertebrata	Osteichthyes	Pleuronectiformes	Pleuronectiformes	<i>Pseudopleuronectes herzensteini</i>	Yellow striped flounder	2	0.080	Immature fish (1-year-old)	Some (details unknown)	—	—	Viscera removed	1.3	1.7	—	—
				Vertebrata	Osteichthyes	Pleuronectiformes	Paralichthyidae	<i>Paralichthys olivaceus</i>	Bastard halibut	2	1.7	Mature fish (2-year-old)	Some (details unknown)	—	—	Viscera removed	N.D.(0.38)	1.1	—	—
				Vertebrata	Osteichthyes	Pleuronectiformes	Paralichthyidae	<i>Pseudorhombus cinnamomeus</i>	Cinnamon flounder	2	0.092	Mature fish (1-year-old)	Some (details unknown)	—	—	Viscera removed	1.1	1.5	—	—
				Vertebrata	Osteichthyes	Perciformes	Sparidae	<i>Evynnis japonica</i>	Crimson sea-bream	4	1.6	Mature fish (4-year-old)	Some (details unknown)	—	—	Viscera removed	0.99	2.8	—	—
				Vertebrata	Osteichthyes	Perciformes	Sparidae	<i>Pagrus major</i>	Red seabream	2	2.0	Mature fish (5-year-old)	Shellfish	—	—	Viscera removed	1.3	3.4	0.036	—
				Vertebrata	Osteichthyes	Perciformes	Sciaenidae	<i>Pennahia argentata</i>	White croaker	1	0.29	Mature fish (4-year-old)	Some (details unknown)	—	—	Viscera removed	0.77	2.0	—	—
				Vertebrata	Osteichthyes	Zeiformes	Zeidae	<i>Zeus faber</i>	John dory	1	0.35	Mature fish	—	—	—	Viscera removed	0.56	0.86	—	—
				Vertebrata	Osteichthyes	Tetraodontiformes	Tetraodontidae	<i>Takifugu snyderi</i>	Obscure Puffer	19	3.1	Mature fish	Crustaceans, shellfish	—	—	Viscera removed	1.1	3.7	—	—
				Vertebrata	Chondrichthyes	Rajiformes	Rajidae	<i>Okamejei kenojei</i>	Skate	3	5.0	Mature fish	Crustaceans	—	—	Viscera removed	7.4	23	0.20	—
Vertebrata	Chondrichthyes	Carcharhiniformes	Triakidae	<i>Mustelus manazo</i>	Starspotted smooth-hound	3	3.9	Mature fish	Crustaceans	—	—	Viscera removed	2.6	7.5	0.040	—				
Hisanohama Coastal areas			2014/9/6	Mollusca	Gastropoda	Archaeogastropoda	Haliotis asinina	<i>Haliotis discus</i>	Abalone	5	1.1	Imago	—	—	Molluscan body	N.D.(0.35)	0.57	—		

\*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.