

FY2011 Yamagata Prefecture Survey Results

[Survey Dates]

Survey	Rivers	Lakes	Sea Areas	Bathing Areas
1 st Time	Oct. 24-26, 2011	Oct. 25-27, 2011	—	—

[Survey Results]

Water Quality (Lower detection limit: 1Bq/L)

- Radioactive iodine (I-131) was not detectable at any of the locations tested
- Radioactive cesium (Cs-134, Cs-137) was not detectable at any of the locations tested

Sediment

- Radioactive iodine (I-131) was not detectable at any of the locations tested (Lower detection limit: 30Bq/kg (dried mud))
- Radioactive cesium

Rivers

Cs-134: ND-67Bq/kg (dried mud) (Lower detection limit: 10Bq/kg (dried mud))

Cs-137: ND-65Bq/kg (dried mud) (Lower detection limit: 10Bq/kg (dried mud))

Lakes and headwaters

Cs-134: ND-190Bq/kg (dried mud) (Lower detection limit: 10Bq/kg (dried mud))

Cs-137: 34-280Bq/kg (dried mud)

Surrounding Environment

- Radioactive iodine (I-131) was not detectable at any of the locations tested (Lower detection limit: 30Bq/kg (dry))

- Radioactive cesium

Rivers

Cs-134: ND-300Bq/kg (dry) (Lower detection limit: 10Bq/kg (dried mud))

Cs-137: ND-370Bq/kg (dry) (Lower detection limit: 10Bq/kg (dried mud))

Lakes and headwaters

Cs-134: 84-180Bq/kg (dry)

Cs-137: 100-260Bq/kg (dry)

- Spatial dose

Rivers 0.11-0.24μSv/h

Lakes and headwaters 0.14-0.17μSv/h

River: Water Quality Monitoring Results

Sampling point				Sampling date	Weather	Air temperature	Full depth m	Water quality										Remarks	
No.	Water body	Point	Municipality					General items							Radioactive material concentrations (Bq/L)				
								Water temperature	Sampling depth m	Color	Odor	Transparency cm	Electrical conductivity	SSmg/L	Turbidity	Radioactive iodine-131	Radioactive cesium		
										Radioactive iodine-131	Cs-134	Cs-137							
1	Mogamigawa River System	Hagurogawa River	Hagurogawabashi Bridge	Yonezawashi City	2011/10/26	Sunny	10.9	0.35	14.8	0.0	Colorless transparent	None	100 or more	4.5	3	2.1	<1	<1	<1
2		Hottategawa River	Yoshitsukebashi Bridge	Yonezawashi City	2011/10/26	Cloudy	11.4	0.25	12.2	0.0	Colorless transparent	None	100 or more	11.5	6	5.0	<1	<1	<1
3		Mogamigawa River	Niidabashi Bridge (Kaminida)	Yonezawashi City	2011/10/26	Cloudy	10.7	0.50	12.3	0.0	Colorless transparent	None	100 or more	11.6	5	4.5	<1	<1	<1
4		Tennogawa River	Tennogawabashi Bridge	Yonezawashi City	2011/10/26	Cloudy	9.1	0.90	12.5	0.0	Colorless transparent	Faint mud	100 or more	7.8	5	5.0	<1	<1	<1
5		Mogamigawa River	Nukanomebashi Bridge (Nukanome)	Fakahatamachi Town	2011/10/25	Cloudy	14.5	0.45	16.3	0.0	Colorless transparent	None	100 or more	12.6	5	3.9	<1	<1	<1
6		Omonogawa River	Yoshijimabashi Bridge	Kawanishimachi Town	2011/10/25	Cloudy	16.9	0.80	16.1	0.0	Colorless transparent	None	100 or more	9.3	2	1.8	<1	<1	<1
7		Yashirogawa River	Yashirobashi Bridge	Fakahatamachi Town	2011/10/25	Rain	17.5	0.15	17.0	0.0	Colorless transparent	None	100 or more	7.1	3	1.9	<1	<1	<1
8		Yoshinogawa River	Yanababashi Bridge	Fakahatamachi Town	2011/10/24	Cloudy	17.8	0.50	16.9	0.0	Colorless transparent	None	72	10.6	8	8.0	<1	<1	<1
9		Mamigasakigawa River	Ryokenji	Yamagatashi City	2011/10/24	Cloudy	18.9	0.30	16.0	0.0	Colorless transparent	None	100 or more	7.9	1	0.5	<1	<1	<1
10		Mamigasakigawa River	Shirakawabashi Bridge	Yamagatashi City	2011/10/24	Cloudy	15.1	0.30	15.0	0.0	Colorless transparent	None	100 or more	11.3	8	5.3	<1	<1	<1

Note: Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.

River: Sediment Monitoring Results

Sampling point				Sampling date	Weather	Air temperature	Full depth m	Sediment															Remarks		
No.	Water body	Point	Municipality					General items										Concentration of radioactive material (Bq/kg)							
								Moist temperature	Moisture depth cm	Color	Odor	Mechanical composition					Moist content	Specific gravity	Property	Radioactive iodine-131	Radioactive cesium				
										Coarse gravel	Medium gravel	Fine gravel	Coarse sand	Medium sand	Fine sand	Silt	Clay	Moist content	Specific gravity	Property	Radioactive iodine-131	Cs-134	Cs-137		
1	Mogamigawa River System	Hagurogawa River	Hagurogawabashi Bridge	Yonezawashi City	2011/10/26	Sunny	10.9	0.35	14.7	5	Dark grayish yellow	None	—	0.3	5.4	37.6	54.0	2.1	0.6	81.4	2.635	Sand with gravel	<30	<10	<10
2		Hottategawa River	Yoshitsukebashi Bridge	Yonezawashi City	2011/10/26	Cloudy	11.4	0.25	12.3	3	Dark brown	None	—	16.2	9.9	37.2	35.0	1.4	0.3	82.8	2.662	Sand with gravel	<30	15	24
3		Mogamigawa River	Niidabashi Bridge (Kaminida)	Yonezawashi City	2011/10/26	Cloudy	10.7	0.50	12.8	5	Dark grayish yellow	None	—	6.0	9.4	25.1	48.3	9.1	2.1	80.8	2.647	Sand	<30	18	23
4		Tennogawa River	Tennogawabashi Bridge	Yonezawashi City	2011/10/26	Cloudy	9.1	0.90	12.8	5	Olive brown	None	—	2.5	1.5	10.2	77.5	8.1	0.2	79.4	2.638	Sand	<30	28	31
5		Mogamigawa River	Nukanomebashi Bridge (Nukanome)	Fakahatamachi Town	2011/10/25	Cloudy	14.5	0.45	16.2	5	Grayish olive	None	—	15.8	15.9	19.7	43.1	5.3	0.2	82.7	2.639	Sand with gravel	<30	<10	<10
6		Omonogawa River	Yoshijimabashi Bridge	Kawanishimachi Town	2011/10/25	Cloudy	16.9	0.80	15.9	5	Olive black	None	—	—	—	24.5	73.4	1.7	0.4	85.1	2.657	Sand	<30	<10	<10
7		Yashirogawa River	Yashirobashi Bridge	Fakahatamachi Town	2011/10/25	Rain	17.5	0.15	17.0	5	Dark grayish yellow	None	—	7.0	4.3	34.6	52.2	1.3	0.6	83.9	2.653	Sand with gravel	<30	<10	10
8		Yoshinogawa River	Yanababashi Bridge	Fakahatamachi Town	2011/10/24	Cloudy	17.8	0.50	17.0	10	Dark brown	None	—	8.9	25.5	30.9	27.6	4.1	3.0	84.1	2.632	Sand with gravel	<30	67	65
9		Mamigasakigawa River	Ryokenji	Yamagatashi City	2011/10/24	Cloudy	18.9	0.30	16.1	5	Grayish olive	None	—	0.9	12.0	47.3	37.0	2.2	0.6	82.8	2.675	Sand	<30	34	43
10		Mamigasakigawa River	Shirakawabashi Bridge	Yamagatashi City	2011/10/24	Cloudy	15.1	0.30	15.2	5	Grayish olive	None	—	21.0	23.0	23.7	19.3	9.1	3.9	85.7	2.656	Sand with gravel	<30	41	55

Note: Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.

River: Surrounding Environment (River Terrace (Left Bank)) Monitoring Results

Sampling point				Sampling date	Weather	Air temperature	Surrounding environment (soil/herb/air dose)										Remarks
							Left bank										
No.	Water body	Point	Municipality				Soil			Herb				Air dose (μSv/h)			
							General items			Concentration of radioactive material (Bq/kg)		Concentration of radioactive material (Bq/kg)			Concentration of radioactive material (Bq/kg)		
							Color	Odor	Property	Radioactive iodine-131	Radioactive cesium		Radioactive iodine-131	Radioactive cesium			
										Cs-134	Cs-137		Cs-134	Cs-137			
1	Hagurogawa River	Hagurogawabashi Bridge	Yonezawashi City	2011/10/26	Sunny	10.9	Dark grayish yellow	Faint earth	Loamy	<30	42	58	<30	<10	<10	0.13	
2	Hottategawa River	Yoshitsukebashi Bridge	Yonezawashi City	2011/10/26	Cloudy	11.4	Brownish black	Faint earth	Loamy	<30	77	99	<30	<10	<10	0.13	
3	Mogamigawa River	Niidabashi Bridge (Kaminida)	Yonezawashi City	2011/10/26	Cloudy	10.7	Brownish black	Faint earth	Clay-loamy	<30	30	30	<30	<10	<10	0.15	
4	Tennogawa River	Tennogawabashi Bridge	Yonezawashi City	2011/10/26	Cloudy	9.1	Brownish black	Faint earth	Clay-loamy	<30	43	61	<30	<10	<10	0.15	
5	Mogamigawa River	Nukanomebashi Bridge (Nukanome)	Takahatamachi Town	2011/10/25	Cloudy	14.5	Brownish black	Faint earth	Loamy	<30	150	190	<30	<10	<10	0.13	
6	System	Omonogawa River	Yoshijimbashi Bridge	Kawanishimachi Town	2011/10/25	Cloudy	16.9	Brownish black	Faint earth	Loamy	<30	130	200	<30	<10	<10	0.16
7	Yashirogawa River	Yashirobashi Bridge	Takahatamachi Town	2011/10/25	Rain	17.5	Brownish black	Faint earth	Loamy	<30	24	54	<30	<10	<10	0.15	
8	Yoshinogawa River	Yanababashi Bridge	Takahatamachi Town	2011/10/24	Cloudy	17.8	Brownish black	Faint earth	Loamy	<30	46	65	<30	<10	<10	0.16	
9	Mamigasakigawa River	Ryokenji	Yamagatashi City	2011/10/24	Cloudy	18.9	Dark brown	Faint earth	Loamy	<30	300	370	<30	31	39	0.24	
10	Mamigasakigawa River	Shirakawabashi Bridge	Yamagatashi City	2011/10/24	Cloudy	15.1	Olive brown	None	Sandy	<30	<10	<10	<30	<10	<10	0.11	

Note: • Air dose was measured with a survey meter, Model 5000 of Health Physics Instruments.

• Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.

River: Surrounding Environment (River Terrace (Right Bank)) Monitoring Results

Sampling point				Sampling date	Weather	Air temperature	Surrounding environment (soil/herb/air dose)										Remarks
							Right bank										
No.	Water body	Point	Municipality				Soil			Herb				Air dose (μSv/h)			
							General items			Concentration of radioactive material (Bq/kg)		Concentration of radioactive material (Bq/kg)			Concentration of radioactive material (Bq/kg)		
							Color	Odor	Property	Radioactive iodine-131	Radioactive cesium		Radioactive iodine-131	Radioactive cesium			
										Cs-134	Cs-137		Cs-134	Cs-137			
1	Hagurogawa River	Hagurogawabashi Bridge	Yonezawashi City	2011/10/26	Sunny	10.9	Dark grayish yellow	Faint earth	Loamy	<30	150	190	<30	<10	<10	0.13	
2	Hottategawa River	Yoshitsukebashi Bridge	Yonezawashi City	2011/10/26	Cloudy	11.4	Dark brown	Faint earth	Loamy	<30	32	40	<30	<10	<10	0.13	
3	Mogamigawa River	Niidabashi Bridge (Kaminida)	Yonezawashi City	2011/10/26	Cloudy	10.7	Brownish black	Faint earth	Loamy	<30	71	110	<30	<10	<10	0.13	
4	Tennogawa River	Tennogawabashi Bridge	Yonezawashi City	2011/10/26	Cloudy	9.1	Dark brown	Faint earth	Clay-loamy	<30	120	160	<30	<10	<10	0.14	
5	Mogamigawa River	Nukanomebashi Bridge (Nukanome)	Takahatamachi Town	2011/10/25	Cloudy	14.5	Brownish black	Faint earth	Loamy	<30	44	58	<30	<10	<10	0.14	
6	System	Omonogawa River	Yoshijimbashi Bridge	Kawanishimachi Town	2011/10/25	Cloudy	16.9	Brownish black	Faint earth	Clay-loamy	<30	120	170	<30	<10	<10	0.15
7	Yashirogawa River	Yashirobashi Bridge	Takahatamachi Town	2011/10/25	Rain	17.5	Brownish black	Faint earth	Loamy	<30	110	140	<30	<10	<10	0.16	
8	Yoshinogawa River	Yanababashi Bridge	Takahatamachi Town	2011/10/24	Cloudy	17.8	Brownish black	Faint earth	Loamy	<30	190	260	<30	<10	<10	0.17	
9	Mamigasakigawa River	Ryokenji	Yamagatashi City	2011/10/24	Cloudy	18.9	Dark brown	Faint earth	Loamy	<30	260	330	<30	<10	<10	0.23	
10	Mamigasakigawa River	Shirakawabashi Bridge	Yamagatashi City	2011/10/24	Cloudy	15.1	Dark olive brown	Faint earth	Loamy	<30	270	370	<30	<10	<10	0.16	

Note: • Air dose was measured with a survey meter, Model 5000 of Health Physics Instruments.

• Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.

Lake and Headwater: Water Quality Monitoring Results

Sampling point				Sampling date	Weather	Air temperature	Full depth m	Water quality											Remarks		
No.	Water body	Point	Municipality					General items								Radioactive material concentrations (Bq/L)					
								Water temperature	Sampling depth m	Color	Odor	Secchi disk depth m	Electrical conductivity μS/cm	SS mg/L	Turbidity	Radioactive iodine-131	Radioactive cesium				
															Cs-134	Cs-137					
11	Zao Dam Reservoir		Yamagata City	2011/10/25	Cloudy	16.9	32.1	13.4	0.5	Dark grayish yellow green	None	2.5	3.5	1	2.5	<1	<1	<1			
		1 m from the bottom	—	—	—	—	—	11.8	31.1	—	—	—	4.5	10	11	<1	<1	<1			
12	Mizukubo Dam Reservoir		Yonezawa City	2011/10/27	Sunny	10.2	12.1	13.6	0.5	Greenish brown	None	0.9	5.4	8	14	<1	<1	<1			
		1 m from the bottom	—	—	—	—	—	10.6	11.1	—	—	—	5.7	73	82	<1	<1	<1			

Note: Sampling points are listed from north to south.

Lake and Headwater: Sediment Monitoring Results

Sampling point				Sampling date	Weather	Air temperature	Full depth m	Sediment																	Remarks
No.	Water body	Point	Municipality					General items											Concentration of radioactive material (Bq/kg)						
								Moisture	Moist sampling depth cm	Color	Odor	Mechanical composition					Moist content	Shrinkage ratio	Property	Radioactive iodine-131	Radioactive cesium				
								Course gravel	Medium gravel	Fine gravel	Coarse sand	Medium sand	Fine sand	Silt	Clay										
11	Zao Dam Reservoir		Yamagata City	2011/10/25	Cloudy	16.9	32.1	11.6	10	Olive black	Faint hydrogen sulfide	—	—	—	—	—	8.4	61.6	30.0	42.2	2.593	Silt with sand	<30	190	280
		1 m from the bottom	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12	Mizukubo Dam Reservoir		Yonezawa City	2011/10/27	Sunny	10.2	12.1	9.0	15	Grayish olive	Faint hydrogen sulfide	—	—	0.2	0.7	0.7	0.6	24.6	73.2	35.9	2.608	Silt with sand	<30	<10	34
		1 m from the bottom	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

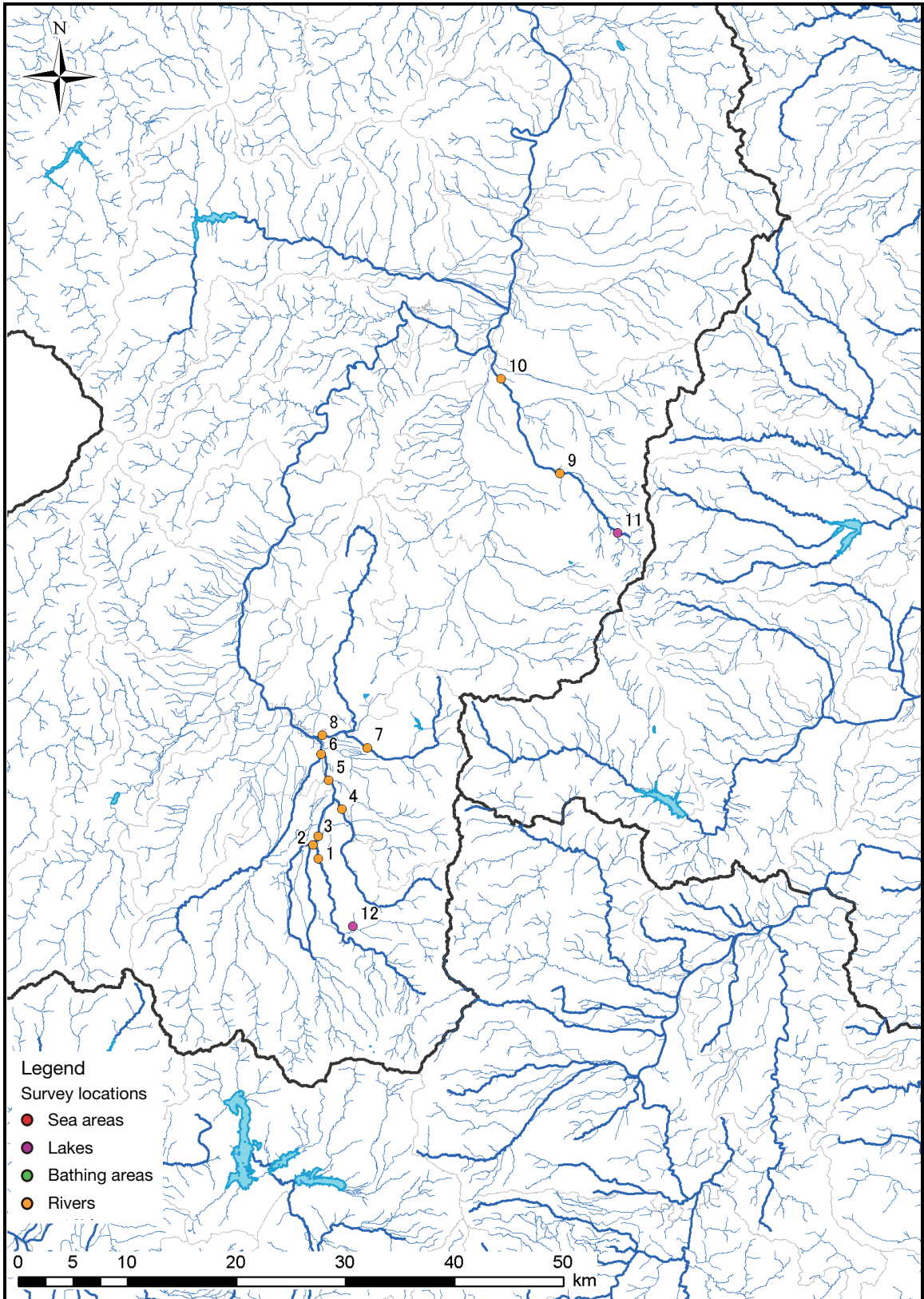
Note: Sampling points are listed from north to south.

Lake and Headwater: Surrounding Environment (Lake Shore) Monitoring Results

Sampling point				Sampling date	Weather	Air temperature	Surrounding environment (soil/herb/air dose)											Remarks
No.	Water body	Point	Municipality				Soil			Concentration of radioactive material (Bq/kg)			Concentration of radioactive material (Bq/kg)			Air dose (μSv/h)		
							Color	Odor	Property	Radioactive iodine-131	Radioactive cesium		Radioactive iodine-131	Radioactive cesium				
11	Zao Dam Reservoir		Yamagata City	2011/10/25	Cloudy	16.9	Brownish black	Faint earth	Loamy	<30	180	260	<30	<10	12	0.14		
		1 m from the bottom	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
12	Mizukubo Dam Reservoir		Yonezawa City	2011/10/27	Sunny	10.2	Brownish black	Faint earth	Loamy	<30	84	100	<30	<10	<10	0.17		
		1 m from the bottom	—	—	—	—	—	—	—	—	—	—	—	—	—	—		

Note: • Air dose was measured with a survey meter, Model 5000 of Health Physics Instruments.

• Sampling points are listed from north to south.



Survey Locations (Yamagata Prefecture)