

Results of Radionuclide Analysis of Aquatic Organisms, Radioactive Material Monitoring in the Water Environment (2013 December Survey)

○ Results (water)

Location			2013 December Survey													
			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)		
Abukuma River System	A-1 (Surface layer)	37.621167°	140.522083°	7.6	0.5	2.9	12.5	19.1	0.09	1.3	2	1.3	0.0061	0.015	0.00095	
	A-1 (Deep layer)			7.6	0.6	2.8	12.2	20.2	0.10	1.3	2	1.4	0.0056	0.011	—	
	A-2	37.565450°	140.394383°	7.6	<0.5	1.7	12.5	11.4	0.06	0.7	2	1.0	0.023	0.057	—	
	B-1	37.784150°	140.492083°	8.1	<0.5	2.6	13.9	19.6	0.10	1.2	3	1.8	0.0054	0.013	—	
	B-2	37.812000°	140.505800°	7.9	<0.5	2.7	13.5	17.3	0.09	1.2	3	1.9	0.0090	0.021	—	
	B-3	37.816350°	140.471933°	7.7	<0.5	2.6	12.1	7.7	0.04	1.2	1	1.1	0.0035	0.0078	—	
Uda River	C-1	37.795467°	140.745783°	7.3	<0.5	1.6	12.4	10.6	0.06	0.6	<1	0.5	0.011	0.028	—	
	C-2	37.771000°	140.727667°	7.2	<0.5	2.8	12.4	8.3	0.04	0.9	8	3.1	0.033	0.073	—	
	C-3	37.779100°	140.804100°	7.5	<0.5	1.8	12.2	8.7	0.05	0.8	<1	0.6	0.0098	0.027	—	
	C-4	37.769250°	140.844233°	7.6	<0.5	1.7	12.5	8.7	0.05	0.7	<1	0.4	0.0058	0.014	0.0010	
	C-5	37.764550°	140.860267°	7.7	<0.5	1.5	12.4	8.8	0.05	0.7	<1	0.3	0.0068	0.018	—	
	C-6	37.776450°	140.887483°	7.7	<0.5	1.6	12.9	9.7	0.05	0.8	<1	0.4	0.0065	0.012	—	
Mano River	D-1	37.733217°	140.925233°	7.7	1.0	2.3	14.0	10.1	0.05	1.2	2.3	<1	0.6	0.017	0.041	0.0014
	D-2	37.709450°	140.944783°	7.4	0.8	2.2	13.9	11.7	0.06	1.2	<1	0.9	0.022	0.047	—	
	D-3	37.704950°	140.962083°	7.2	0.8	2.2	13.6	12.4	0.06	1.1	<1	0.9	0.0073	0.018	—	
	D-4 a	37.730883°	140.907717°	7.4	0.6	2.3	11.9	10.2	0.05	1.1	<1	0.5	0.041	0.092	—	
	D-4 b	37.731133°	140.909500°	7.5	0.6	2.5	12.4	10.0	0.05	1.1	<1	1.1	0.031	0.076	—	
	D-5	37.721733°	140.889850°	7.5	0.8	2.6	12.8	9.0	0.05	1.3	<1	0.7	0.032	0.072	—	
Niida River	E-1	37.661500°	140.911500°	7.3	0.7	2.3	12.7	6.8	0.04	0.8	<1	0.6	0.038	0.088	0.0021	
	E-2 a	37.664283°	140.945433°	7.4	0.5	2.3	13.1	7.1	0.04	0.9	1	0.9	0.035	0.080	—	
	E-2 b	37.664033°	140.945867°	7.4	0.5	2.2	12.9	7.0	0.05	0.8	1	0.7	0.031	0.072	—	
	E-3	37.644733°	141.001533°	7.3	0.9	2.3	12.4	9.4	0.05	0.9	<1	0.7	0.030	0.066	—	
	E-4	37.646267°	140.965817°	7.5	0.6	2.0	12.2	7.6	0.04	0.8	<1	0.6	0.027	0.069	—	
	E-5	37.665150°	140.917533°	7.4	<0.5	1.9	13.3	6.9	0.04	0.8	<1	0.5	0.033	0.072	—	
Ota River	F-1	37.597483°	140.924900°	7.2	<0.5	2.2	12.1	6.2	0.03	1.0	<1	0.4	0.12	0.28	—	
	F-2	37.601500°	140.943633°	7.0	<0.5	2.2	12.2	7.3	0.04	1.1	<1	0.6	0.088	0.20	0.0042	
	F-3	37.604517°	140.964100°	7.3	<0.5	2.5	12.7	7.4	0.04	1.0	<1	0.5	0.088	0.21	—	
	F-4	37.606967°	140.972033°	6.6	<0.5	1.1	8.8	9.1	0.05	0.5	<1	0.3	0.040	0.090	—	
	F-5	37.602200°	140.987367°	7.0	<0.5	1.8	11.0	10.1	0.05	0.8	2	0.2	0.057	0.13	—	
	F-6	37.595283°	141.012733°	7.1	<0.5	2.9	12.1	10.3	0.54	1.3	3	1.5	0.063	0.14	—	
Lake Hayama (Mano Dam)	G-1 (Surface layer)	37.734190°	140.809720°	7.4	0.7	3.7	10.3	7.2	0.04	1.8	2	1.6	0.11	0.25	—	
	G-1 (Deep layer)			7.3	1.1	4.1	10.2	7.3	0.04	2.0	3	2.5	0.046	0.10	0.0018	
	G-3 (Surface layer)	37.729433°	140.831667°	7.3	0.9	3.6	9.9	7.5	0.04	1.9	2	1.5	0.037	0.090	—	
	G-3 (Deep layer)			7.4	1.5	4.4	10.0	7.5	0.04	2.4	3	2.5	0.048	0.10	—	
	G-5 (Surface layer)			7.4	1.0	3.9	10.0	7.3	0.04	2.0	2	1.6	0.035	0.086	—	
	G-5 (Deep layer)			7.4	1.2	5.0	10.3	7.3	0.04	2.4	2	2.8	0.041	0.093	—	
Lake Akimoto	H-1 (Surface layer)	37.657533°	140.126433°	7.2	<0.5	3.5	10.2	5.3	0.03	1.8	2	1.9	0.0079	0.017	—	
	H-1 (Deep layer)			7.2	0.7	3.6	10.2	5.2	0.03	1.4	3	2.1	0.0098	0.021	—	
	H-3 (Surface layer)	37.665333°	140.132933°	7.2	0.5	3.6	9.9	5.2	0.03	1.6	2	2.2	0.0070	0.017	—	
	H-3 (Deep layer)			7.2	0.5	3.8	10.5	5.2	0.03	1.4	3	2.2	0.029	0.059	0.0015	
	H-5 (Surface layer)			7.2	<0.5	3.2	10.5	5.4	0.03	1.4	3	1.6	0.011	0.029	—	
	H-5 (Deep layer)			7.3	0.9	3.6	10.8	5.4	0.03	1.5	3	1.9	0.015	0.035	—	
Lake Inawashiro	I-1 (Surface layer)	37.504683°	140.114333°	6.9	<0.5	1.5	10.7	11.4	0.06	0.7	2	0.9	0.0080	0.022	—	
	I-1 (Deep layer)			6.1	<0.5	1.6	11.0	12.6	0.07	0.6	3	1.0	0.0098	0.022	0.00095	
	I-3 (Surface layer)	37.507700°	140.026250°	6.7	<0.5	1.4	10.8	11.3	0.06	0.6	2	0.8	0.0078	0.022	—	
	I-3 (Deep layer)			6.7	<0.5	1.7	11.0	11.3	0.06	0.6	4	1.9	0.0076	0.022	—	
	J-1 (Surface layer)			6.7	0.6	2.1	11.3	11.4	0.06	1.3	2	1.0	0.0093	0.021	—	
	J-1 (Deep layer)			6.7	0.6	2.0	11.2	11.4	0.06	1.1	2	1.4	0.014	0.031	—	
Off the mouth of the Abukuma River (Off Watari Town)	K-2 (Surface layer)	38.045867°	140.940067°	8.1	<0.5	1.2	9.4	4.960	32.38	1.0	1	0.4	0.0034	0.0095	—	
	K-2 (Deep layer)			8.1	<0.5	1.7	8.7	5.220	33.25	1.0	7	2.9	0.0093	0.023	0.00088	
Off Soma City (Matsukawaura)	L-2	37.815483°	140.976400°	8.1	0.6	1.4	9.1	4.980	32.54	1.3	2	1.1	0.0064	0.017	0.00078	
	L-3	37.821650°	140.976383°	8.1	0.7	1.4	9.2	5.080	32.57	0.9	2	0.9	0.0062	0.018	—	
Off Iwaki City (Hisanohama)	M-2 (Surface layer)	37.199467°	141.085667°	8.1	<0.5	1.0	8.1	5.280	33.79	0.8	1	0.4	N.D.(<0.0022)	0.0094	—	
	M-2 (Deep layer)			8.1	0.6	1.2	8.5	5.240	33.79	0.9	4	0.6	0.0035	0.0086	0.0012	

Note) N.D. means to be below the detection limit.

Results of Radionuclide Analysis of Aquatic Organisms, Radioactive
Material Monitoring in the Water Environment (2013 December Survey)

○ Results (sediments)

	Location		2013 December Survey																		
	Latitude	Longitude	pH	Redox potential E _h (mV)	Water content (%)	IL (%)	TOC (mg/g-dry)	Soil particle density (g/cm ³)	Grain size distribution						Median grain diameter (mm)	Maximum grain diameter (mm)	Cs-134 (Bq/kg-dry)	Cs-137 (Bq/kg-dry)	Sr-90 (Bq/kg-dry)		
									Gravel	Course sand	Medium sand	Fine sand	Silt	Clay							
									(2-75mm)	(0.85-2mm)	(0.25-0.85mm)	(0.075-0.25mm)	(0.005-0.075mm)	(Less than 0.005mm)							
Abukuma River System	A-1	37.621167°	140.522083°	7.5	160	21.0	0.9	<1	2.702	12.6	46.4	33.7	4.3	1.4	1.6	1.0	19	86	190	N.D.(<0.16)	
	A-2	37.565450°	140.294283°	7.3	131	25.0	2.4	3	2.696	16.4	60.6	20.7	1.1	0.5	0.7	1.2	9.5	95	220	—	
	B-1	37.784150°	140.492083°	7.6	189	31.1	2.6	4	2.080	7.5	18.6	24.5	2.6	37.7	4.6	7.1	0.25	19	200	480	—
	B-2	37.812000°	140.505800°	7.5	128	30.2	1.5	<1	2.752	0	0.7	63.2	28.4	3.9	3.8	0.29	2	87	230	—	
	B-3	37.816350°	140.471933°	7.5	119	23.9	1.4	<1	2.682	31.4	44.8	20.0	1.4	1.2	0.9	1.4	9.5	120	280	—	
Uda River	C-1	37.795467°	140.745783°	6.9	114	18.4	2.1	<1	2.762	68.3	27.3	2.6	0.8	0.5	0.5	2.4	9.5	160	400	—	
	C-2	37.771000°	140.727667°	6.9	90	30.8	4.0	5	2.794	26.1	19.6	29.1	11.4	5.9	7.9	0.71	9.5	270	640	—	
	C-4	37.769250°	140.844233°	7.1	121	22.4	1.5	<1	2.748	29.4	32.1	33.3	4.2	0.5	0.5	1.2	19	290	700	0.61	
	C-5	37.764550°	140.860267°	7.0	152	26.6	1.8	2	2.717	18.7	21.3	28.0	13.2	9.1	9.7	0.59	9.5	170	430	—	
	C-6	37.776450°	140.887483°	7.2	142	20.4	1.2	<1	2.756	18.0	39.8	35.5	5.3	0.5	0.9	1.0	19	190	440	—	
	D-1	37.733217°	140.925233°	7.0	137	18.2	1.4	<1	2.726	24.1	41.6	28.8	1.4	4.2	0.4	0.9	1.2	19	400	1,000	1.2
Mano River	D-2	37.709450°	140.944783°	7.2	142	21.8	1.2	<1	2.714	15.9	47.0	35.2	1.2	0.2	0.5	1.1	9.5	250	580	—	
	D-3	37.704950°	140.962083°	7.1	144	20.2	1.2	<1	2.706	41.5	39.7	18.0	0.4	0.2	0.2	1.7	19	54	130	—	
	D-4 a	37.730883°	140.907717°	7.3	145	25.9	2.0	1	2.734	12.9	27.4	51.5	6.5	0.7	1.0	0.71	19	460	1,200	—	
	D-5	37.721733°	140.889850°	7.3	148	26.9	2.4	1	2.715	2.9	13.9	67.7	10.7	1.4	3.4	0.52	9.5	490	1,200	—	
	E-1	37.661500°	140.915000°	7.2	115	19.0	0.8	<1	2.662	39.0	55.6	4.2	0	1.0	0.2	1.8	9.5	370	880	N.D.(<0.17)	
Niida River	E-2 a	37.664283°	140.945433°	6.8	42	56.5	10.7	26	2.565	18.1	7.2	11.3	12.9	22.1	28.4	0.070	19	5,600	13,000	—	
	E-3	37.644733°	141.001533°	7.0	145	21.5	1.0	<1	2.659	5.1	23.8	62.7	6.6	1.3	0.5	0.64	9.5	180	450	—	
	E-4	37.644733°	140.965817°	7.2	157	22.8	0.9	<1	2.684	5.1	29.5	61.1	3.3	0.8	0.2	0.70	9.5	260	600	—	
	E-5	37.665150°	140.917533°	7.1	153	19.6	1.8	2	2.678	43.8	39.4	13.9	1.9	0.6	0.4	1.8	19	680	1,600	—	
	F-1	37.597483°	140.924900°	6.9	189	19.1	1.3	2	2.680	37.8	32.9	21.5	4.5	1.7	1.6	1.5	19	2,300	5,600	—	
Ota River	F-2	37.601500°	140.943633°	6.9	183	17.5	0.8	<1	2.661	43.6	43.4	10.9	1.1	0.4	0.6	1.8	9.5	1,500	3,800	0.21	
	F-3	37.604517°	140.964100°	6.8	187	20.4	0.8	<1	2.661	25.3	33.5	27.7	10.6	1.7	1.2	1.1	19	1,700	4,000	—	
	F-4	37.606967°	140.972033°	6.7	234	19.5	0.5	<1	2.666	31.9	44.1	20.5	0.5	2.8	0.4	0.3	1.5	19	430	1,100	—
	F-5	37.602200°	140.987367°	6.8	212	21.9	0.5	<1	2.673	29.1	44.6	23.9	1.3	0.5	0.6	1.4	19	200	480	—	
	G-1	37.734190°	140.809720°	6.6	154	87.9	74.3	310	2.038	0	24.2	8.2	9.2	23.6	34.8	0.039	2	3,600	8,600	3.8	
Lake Hayama (Mano Dam)	G-2	37.725833°	140.821383°	6.8	25	71.1	19.6	73	2.436	5.0	2.0	3.2	5.3	61.1	23.4	0.018	9.5	3,200	7,600	—	
	G-3	37.729433°	140.831667°	7.1	11	51.0	8.0	11	2.623	15.3	9.7	16.6	15.6	19.4	23.4	0.15	19	1,700	4,000	—	
	G-4	37.732000°	140.803450°	7.4	85	26.6	3.0	3	2.693	7.5	23.3	54.1	9.9	1.6	3.6	0.61	19	1,300	3,100	—	
	G-5	37.733660°	140.808110°	7.0	78	76.3	24.7	96	2.389	0	4.0	4.0	14.9	48.9	28.2	0.018	2	8,200	19,000	—	
	H-1	37.657533°	140.126433°	6.9	-11	66.7	8.4	21	2.609	0	0.2	0	1.2	54.9	43.7	0.0063	2	71	210	—	
Lake Akimoto	H-2	37.661550°	140.122550°	6.9	16	77.4	11.7	43	2.516	0	1.0	1.0	1.5	55.4	41.1	0.0088	2	350	900	—	
	H-3	37.665333°	140.132933°	6.7	-15	72.3	15.3	46	2.598	0	0.3	0.1	13.6	48.8	37.2	0.011	2	970	2,300	2.2	
	H-4	37.65067°	140.118050°	6.8	8	71.8	8.3	21	2.573	2.2	1.5	2.2	5.7	45.4	45.0	0.0069	9.5	550	1,300	—	
	H-5	37.652333°	140.156833°	6.6	-10	64.9	8.8	30	2.596	0	0.1	0.2	10.8	53.9	35.0	0.012	2	600	1,400	—	
	I-1	37.504683°	140.114333°	6.8	0	77.8	9.4	19	2.538	0	0.6	5.1	44.0	20.1	30.2	0.073	2	380	860	N.D.(<0.24)	
Lake Inawashiro	I-2	37.499467°	140.140883°	6.8	-68	69.4	7.9	18	2.581	2.0	1.0	1.8	34.5	30.0	30.7	0.037	9.5	510	1,200	—	
	I-3	37.507700°	140.026250°	6.8	0	68.5	10.2	17	2.586	0	0.1	2.5	26.9	45.1	25.4	0.030	2	35	99	—	
	I-4	37.515967°	140.109167°	6.5	-15	30.1	3.3	2	2.717	23.3	14.1	30.2	6.7	12.1	13.6	0.54	19	22	59	—	
	J-1	37.420333°	140.100833°	6.8	156	30.3	1.6	1	2.676	1.3	5.6	76.9	1.6	14.7	0.6	0.9	0.34	4.75	51	140	—
	K-1	38.045717°	140.930000°	7.7	172	20.7	1.6	<1	2.747	0	8.8	46.2	38.8	3.3	2.9	0.28	2	34	88	—	
Lake Inawashiro	K-2	38.045867°	140.940667°	7.6	136	42.9	4.2	5	2.716	0	1.7	52.9	24.2	21.2	0.094	0.850	180	490	N.D.(<0.20)		
	K-3	38.045517°	140.952117°	7.6	118	53.4	6.5	9	2.703	0	0.2	0.3	13.3	59.7	26.5	0.024	2	240	540	—	
	L-1	37.820950°	140.961067°	7.7	102	28.1	2.6	2	2.721	10.5	20.8	38.8	14.3	6.6	9.0	0.46	9.5	44	120	—	
Off Soma City (Matsukawaura)	L-2	37.815483°	140.976400°	7.9	98	32.8	2.7	3	2.692	0	0.3	31.0	48.1	7.2	13.4	0.19	2	99	230	N.D.(<0.19)	
	L-3	37.821650°	140.976383°	8.0	112	23.8	1.2	<1	2.721	0	0.7	56.2	38.1	1.6	3.4	0.27	2	11	40	—	
Off Iwaki City (Hisanoama)	M-1	37.173567°	141.078833°	7.9	182	28.3	1.7	<1	2.787	0	0.4	1.9	89.9	4.9	2.9	0.16	2	56	140	—	
	M-2	37.199467°	141.085667°	7.8	168	27.2	1.8	<1	2.781	0	0.8	3.9	91.8	0.8	2.7	0.16	2	64	170	N.D.(<0.19)	
	M-3	37.232550°	141.093717°	7.9	172	23.6	2.1	<1	2.784	0	1.1	4.8	87.8	3.4	2.9	0.17	2	48	120	—	

Note) N.D. means to be below the detection limit.

Results of Radionuclide Analysis of Aquatic Organisms, Radioactive
Material Monitoring in the Water Environment (2013 December Survey)

Location	Sampling Date	Division	Class	Order	Family	Species name	English name	Population	Sample weight	Note		Radioactive cesium (Bq/kg-wet)			Sr-90 (Bq/kg-wet)	
										Growth stage	Stomach contents	Total	Cs-134	Cs-137		
Aokuma River system	A-2 (Harase River)	2013/12/6	Algae/plant	—	—	—	Attached algae	—	0.099	—	—	284	84	200	—	
			Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Stenopsyche marmorata	269	0.064	Larva	—	41	13	28	—
			Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche sauteri</i>	Parastenopsyche sauteri								
			Arthropod	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	Macromia amphigena	82	0.059	Larva	—	57	18	39	—
			Arthropod	Insecta	Odonata	Cordulegastriidae	<i>Anotogaster sieboldii</i>	Anotogaster sieboldii								
			Arthropod	Insecta	Odonata	Gomphidae	<i>Asiagomphus melaenops</i>	Asiagomphus melaenops								
			Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius nanus</i>	Davidius nanus								
			Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	Davidius								
			Arthropod	Insecta	Odonata	Gomphidae	<i>Onychogomphus viridicostus</i>	Onychogomphus viridicostus								
			Arthropod	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	Sieboldius albardae								
			Arthropod	Insecta	Odonata	Aeshnidae	<i>Anax parthenope julius</i>	Anax parthenope								
			Arthropod	Malacostraca	Atyidae	Atyidae	<i>Neocaridina sp.</i>	Neocaridina sp.								
			Mollusca	Gastropoda	Sorbeconcha	Pleuroceridae	<i>Semislucospira libertina</i>	Semislucospira libertina								
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Phoxinus lagoskii steindachneri</i>	Amur Minnow	20	0.25	3-year-old fish	—	31	8.9	22	—
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	3	0.048	2-year-old fish	Some (details unknown)	45	13	32	—
	Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Misgurnus anguillicaudatus</i>	Oriental weatherfish	35	0.035	Imago	—	22	6.3	16	—		
	Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Yamame trout	6	0.23	1-year-old fish	Aquatic insects	38	11	27	—		
	Vertebrata	Amphibia	Anura	—	—	Fadpole	21	0.015	Larva	—	330	100	230	—		
	Vertebrata	Amphibia	Caudata	Salamandridae	<i>Cynops pyrrhogaster</i>	Cynops pyrrhogaster	10	0.069	Imago	—	20	5.9	14	—		
	Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Hemibarbus barbus</i>	Hemibarbus barbus	1	1.5	3-year-old fish	Some (details unknown)	49	14	35	0.39		
	B-3 (Surikami River)	2013/12/7	Algae/plant	—	—	—	Attached algae	—	0.097	—	—	134	38	96	—	
			Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Stenopsyche marmorata	274	0.012	Young larva	—	152	42	110	—
			Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Stenopsyche marmorata	329	0.067	Oldest larva	—	50	15	35	—
			Arthropod	Insecta	Megaloptera	Corydalidae	<i>Parachauliodes continentalis</i>	Parachauliodes continentalis Weele	67	0.073	Larva	—	11	3.2	7.7	—
			Arthropod	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	Protohermes grandis								
			Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius nanus</i>	Davidius nanus	47	0.014	Larva	—	73	22	51	—
			Arthropod	Insecta	Odonata	Gomphidae	<i>Onychogomphus viridicostus</i>	Onychogomphus viridicostus								
			Arthropod	Insecta	Odonata	Gomphidae	<i>Sinogomphus flavolimbatas</i>	Sinogomphus flavolimbatas								
			Arthropod	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	Macromia amphigena								
			Arthropod	Insecta	Odonata	Gomphidae	<i>Asiagomphus melaenops</i>	Asiagomphus melaenops								
Vertebrata			Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	10	0.31	3-year-old fish	—	44	13	31	—	
Vertebrata			Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Yamame trout	2	0.13	2-year-old fish	Aquatic insects	109	32	77	—	
Vertebrata			Osteichthyes	—	—	—	CPOMs (fallen leaves)	—	0.50	—	—	76	22	54	—	

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)
										Growth stage	Stomach contents	Total	Cs-134	Cs-137	
Ube River	2013/12/10	Algae/plant	—	—	—	Attached algae	—	0.079	—	—	360	110	250	—	
		Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Stenopsyche marmorata	140	0.021	Larva	—	110	29	81	—
		Arthropod	Insecta	Megaloptera	Corydalidae	<i>Parachauliodes continentalis</i>	Parachauliodes continentalis Weele	16	0.0098	Larva	—	27	9.1	18	—
		Arthropod	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	Protohermes grandis								
		Arthropod	Insecta	Odonata	Gomphidae	<i>Asiagomphus melaenops</i>	Asiagomphus melaenops	46	0.014	Larva	—	66	21	45	—
		Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius nanus</i>	Davidius nanus								
		Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	Davidius								
		Arthropod	Insecta	Odonata	Gomphidae	<i>Onychogomphus viridicostus</i>	Onychogomphus viridicostus								
		Arthropod	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	Sieboldius albardae								
		Arthropod	Insecta	Odonata	Gomphidae	<i>Sinogomphus flavolimbatas</i>	Sinogomphus flavolimbatas								
		Arthropod	Insecta	Odonata	Gomphidae	<i>Stylogomphus suzukii</i>	Stylogomphus suzukii								
		Arthropod	Insecta	Odonata	Libellulidae	<i>Macromia amphigena amphigena</i>	Scarlet Skimmer								
		Arthropod	Malacostraca	Decapoda	Atyidae	Atyidae	Freshwater shrimp								
		Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Nipponocypris temminckii</i>	Dark chub								
		Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius</i>	Rhinogobius	10	0.047	Mature fish	—	77	25	52	—
		Vertebrata	Osteichthyes	—	—	—	CPOMs (fallen leaves)	—	0.36	—	—	33	9.8	23	—

Results of Radionuclide Analysis of Aquatic Organisms, Radioactive
Material Monitoring in the Water Environment (2013 December Survey)

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)		
										Growth stage	Stomach contents	Total	Cs-134	Cs-137			
Muro River	D-4a D-4b	2013/12/11	Algae/plant	—	—	—	Attached algae	—	0.079	—	—	910	250	660	—		
			Streptophyta	Zygnematales	Zygnematales	Zygnematales	<i>Spirogyra sp.</i>	Spirogyra	—	0.023	—	—	N.D.	N.D.<(-1.6)	N.D.<(-1.4)	—	
			Angiospermae	Monocotyledoneae	Poales	Poaceae	<i>Phragmites australis</i>	Common reed	—	1.3	—	—	64	19	45	—	
			Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Stenopsyche marmorata	473	0.039	Larva	—	440	120	320	—	
			Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche sauteri</i>	Parastenopsyche sauteri	103	0.065	Larva	—	44	12	32	—	
			Arthropod	Insecta	Megaloptera	Corydalidae	<i>Parachauliodes continentalis</i>	Parachauliodes continentalis Weele									
			Arthropod	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	Protohermes grandis	159	0.049	Larva	—	108	32	76	—	
			Arthropod	Insecta	Odonata	Cordulidae	<i>Macromia amphigena amphigena</i>	Macromia amphigena									
			Arthropod	Insecta	Odonata	Cordulegastriidae	<i>Anotogaster sieboldii</i>	Anotogaster sieboldii									
			Arthropod	Insecta	Odonata	Gomphidae	<i>Anisogomphus maacki</i>	Anisogomphus maacki									
			Arthropod	Insecta	Odonata	Gomphidae	<i>Asiagomphus melaenops</i>	Asiagomphus melaenops									
			Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius nanus</i>	Davidius nanus									
			Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	Davidius									
			Arthropod	Insecta	Odonata	Gomphidae	<i>Nihonogomphus viridis</i>	Nihonogomphus viridis									
			Arthropod	Insecta	Odonata	Gomphidae	<i>Onychogomphus viridicostus</i>	Onychogomphus viridicostus									
			Arthropod	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	Sieboldius albardae									
			Arthropod	Insecta	Odonata	Gomphidae	<i>Sinogomphus flavolimbatu</i>	Sinogomphus flavolimbatu									
			Arthropod	Insecta	Odonata	Gomphidae	<i>Sivlogomphus suzuki</i>	Sivlogomphus suzuki									
			Arthropod	Insecta	Odonata	Libellulidae	<i>Crocothemis servilia mariannae</i>	Scarlet Skimmer									
			Arthropod	Insecta	Odonata	Libellulidae	<i>Orthetrum albistylum speciosum</i>	Common skimmer									
			Arthropod	Insecta	Odonata	Aeshnidae	<i>Anax parthenope julius</i>	Anax parthenope									
			Arthropod	Insecta	Odonata	Aeshnidae	<i>Boyeria maclachlani</i>	Boyeria maclachlani									
			Arthropod	Malacostraca	Decapoda	Atyidae	Atyidae	Freshwater shrimp									304
			Mollusca	Gastropoda	Sorboconcha	Pleuroceridae	<i>Semisulcospira libertina</i>	Semisulcospira libertina	15	0.029	Imago	—	28	8.8	19	—	
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Zacco platypus</i>	Zacco platypus	20	0.12	2-year-old fish	Some (details unknown)	90	27	63	—	
			Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius sp.</i>	R. sp. CB	19	0.042	Mature fish	—	205	65	140	—	
			Amphibia	Amphibia	Anura	Ranidae	<i>Rana catesbeiana</i>	American Bullfrog (tadpole)	10	0.032	Larva	—	610	190	420	—	
						coarse particulate organic matters (CPOMs)	—	—	—	CPOMs(fallen leaves)	—	0.76	—	188	58	130	—

Results of Radionuclide Analysis of Aquatic Organisms, Radioactive
Material Monitoring in the Water Environment (2013 December Survey)

Location	Sampling Date	Division	Class	Order	Family	Species name	English name	Population	Sample weight	Note		Radioactive cesium (Bq/kg-wet)			Sr-90 (Bq/kg-wet)		
										Growth stage	Stomach contents	Total	Cs-134	Cs-137			
Nida River	E-1 E-2a E-2b	2013/12/8	Algae/plant	—	—	—	Attached algae	—	0.068	—	—	1,810	510	1,300	—		
			Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	<i>Stenopsyche marmorata</i>	382	0.071	Larva	—	800	240	560	—	
			Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche sauteri</i>	<i>Parastenopsyche sauteri</i>									
			Arthropoda	Insecta	Plecoptera	Perlidae	<i>Kamimura tibialis</i>	<i>Kamimura tibialis</i>									
			Arthropod	Insecta	Plecoptera	Perlidae	<i>Neoperla sp.</i>	<i>Neoperla geniculata</i>	571	0.038	Larva	—	32	10	22	—	
			Arthropod	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	<i>Macromia amphigena</i>									
			Arthropod	Insecta	Odonata	Cordulegastriidae	<i>Anotogaster sieboldii</i>	<i>Anotogaster sieboldii</i>									
			Arthropod	Insecta	Odonata	Gomphidae	<i>Asiagomphus melaeonops</i>	<i>Asiagomphus melaeonops</i>									
			Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius nanus</i>	<i>Davidius nanus</i>									
			Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	<i>Davidius</i>	81	0.025	Larva	—	203	63	140	—	
			Arthropod	Insecta	Odonata	Gomphidae	<i>Onychogomphus viridicostus</i>	<i>Onychogomphus viridicostus</i>									
			Arthropod	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	<i>Sieboldius albardae</i>									
			Arthropod	Insecta	Odonata	Gomphidae	<i>Stylogomphus suzuki</i>	<i>Stylogomphus suzuki</i>									
			Arthropod	Insecta	Odonata	Aeshnidae	<i>Anax parthenope julius</i>	<i>Anax parthenope</i>									
			Arthropod	Malacostraca	Decapoda	Atyidae	<i>Atyidae</i>	<i>Freshwater shrimp</i>	277	0.045	Imago	—	360	110	250	—	
			Arthropod	Malacostraca	Decapoda	Grapsidae	<i>Eriocheir japonica</i>	<i>Japanese mitten crab</i>	16	0.13	Imago	—	306	96	210	—	
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius auratus</i>	<i>Carassius auratus langsdorfii</i>	6	0.31	4-year-old fish	Some (details unknown)	254	74	180	—	
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Cyprinus carpio</i>	<i>Common carp</i>	5	0.36	1-year-old fish	Some (details unknown)	217	67	150	—	
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	<i>Japanese dace</i>	55	0.16	1-year-old fish	Some (details unknown)	197	57	140	—	
						coarse particulate organic matters (CPOMs)	—	—	—	CPOMs(fallen leaves)	—	0.55	—	400	120	280	—

Results of Radionuclide Analysis of Aquatic Organisms, Radioactive
Material Monitoring in the Water Environment (2013 December Survey)

Location	Sampling Date	Division	Class	Order	Family	Species name	English name	Population	Sample weight	Note		Radioactive cesium (Bq/kg-wet)			Sr-90 (Bq/kg-wet)		
										Growth stage	Stomach contents	Total	Cs-134	Cs-137			
Lake Akimoto	H-1 H-2 H-3	2013/12/3	Algae/plant	—	—	—	—	—	0.049	—	—	169	49	120	—		
			Streptophyta	—	—	—	<i>Spirogyra sp.</i>	Spirogyra	—	0.064	—	—	4.2	1.2	3.0	—	
			Angiospermae	—	—	—	<i>Elodea nuttallii</i>	Western Waterweed	—	0.22	—	—	54	16	38	—	
			Mollusca	Gastropoda	Sorbeoconcha	Pleuroceridae	<i>Semisulcospira libertina</i>	Semisulcospira libertina	52	0.024	Imago	—	—	18	6.8	11	—
			Vertebrata	Osteichthyes	Oserniformes	Osernidae	<i>Hypomesus nipponensis</i>	Japanese smelt	57	0.30	Mature fish	—	—	51	15	36	—
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius auratus</i>	Carassius auratus langsdorfii	5	2.2	6-year-old fish	Some (details unknown)	93	27	66	—	
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Cyprinus carpio</i>	Common carp	1	2.3	7-year-old fish	None	69	19	50	1.3	
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Hemibarbus barbus</i>	Hemibarbus barbus	6	3.5	4-year-old fish	Some (details unknown)	79	23	56	1.4	
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	27	3.4	4-year-old fish	Some (details unknown)	130	37	93	0.95	
			Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Seema	6	1.8	3-year-old fish	Some (details unknown)	76	22	54	0.20	
			Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Salvelinus leucomaenis</i>	Char	8	1.9	4-year-old fish	Aquatic insects	103	32	71	0.43	
			Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	7	4.2	4-year-old fish	Some (details unknown)	212	62	150	0.99	
			Vertebrata	Amphibia	Caudata	Salamandridae	<i>Cynops pyrrhogaster</i>	Cynops pyrrhogaster	31	0.19	Imago	—	—	21	6.2	15	—
			H-4(Near the dam)	Arthropod	Malacostraca	Decapoda	Astacidae	<i>Pacifastacus leniusculus trowbridgii</i>	Signal crayfish	25	2.1	Imago	—	—	73	23	50
	Lake Inawashiro	J-1, L-2(north lakeside)	2013/12/4	coarse particulate organic matters (CPOMs)	—	—	—	—	—	0.45	—	—	42	12	30	—	
J-1 (south lakeside)		Algae/plant		—	—	—	—	—	0.068	—	—	2.0	N.D.(<0.82)	2.0	—		
		Mollusca		Gastropoda	Sorbeoconcha	Pleuroceridae	<i>Semisulcospira libertina</i>	Semisulcospira libertina	50	0.053	Imago	—	8.5	2.7	5.8	—	
		Mollusca		Gastropoda	Architaenioglossa	Viviparidae	<i>Bellamya japonica</i>	Japanese mysterysnail	37	0.21	Imago	—	N.D.	N.D.(<0.82)	N.D.(<0.80)	—	
		Vertebrata		Osteichthyes	Cypriniformes	Cobitidae	<i>Misgurnus anguillicaudatus</i>	Oriental weatherfish	30	0.14	Mature fish	—	2.7	0.95	1.7	—	
amphibians	Amphibia	Anura	Ranidae	Ranidae	Rana	13	0.079	Imago	—	—	38	12	26	—			
Off the mouth of the Abukuma River (Off Watarai Town)	Surrounding water area off the mouth of the Abukuma River	2013/12/13	Arthropod	Malacostraca	Decapoda	Portunidae	<i>Ovalipes punctatus</i>	Ovalipes punctatus	10	2.0	Imago	—	2.2	0.52	1.7	0.22	
			Vertebrata	Osteichthyes	Pleuronectiformes	Pleuronectiformes	<i>Kareius bicoloratus</i>	Stone flounder	3	2.5	2-year-old fish	None	3.1	1.0	2.1	0.019	
			Vertebrata	Osteichthyes	Pleuronectiformes	Paralichthyidae	<i>Paralichthys olivaceus</i>	Bastard halibut	1	3.2	6-year-old fish	Small fish	13	3.7	9.4	0.055	
			Vertebrata	Osteichthyes	Perciformes	Lateolabracidae	<i>Lateolabrax japonicus</i>	Japanese sea bass	1	2.8	5-year-old fish	Some (details unknown)	4.1	1.3	2.8	0.036	
			Vertebrata	Osteichthyes	Scorpaeniformes	Sebastidae	<i>Sebastes schlegelii</i>	Black rockfish	2	1.7	3-year-old fish	Crustacean fragments	2.3	0.52	1.8	N.D.(<0.017)	
			Vertebrata	Osteichthyes	Puffer	Thread-sail filefish	<i>Thamnaconus modestus</i>	Filefish	5	1.7	Mature fish	Some (details unknown)	0.99	N.D.(<0.55)	0.99	—	
			Vertebrata	Cartilage fish	Skate	Skate	<i>Okamejei konojoi</i>	Common Skete	5	5.1	Mature fish	None	3.4	0.79	2.6	N.D.(<0.019)	
Off Soma City	L-1 L-2 L-3 (Matsukawaura)	2013/12/10	Chlorophyta	Ulvophyceae	Ulvales	Ulvaceae	<i>Ulva pertusa</i>	Ulva pertusa	—	0.48	—	—	N.D.	N.D.(<0.34)	N.D.(<0.32)	—	
			Angiospermae	Monocotyledoneae	Najadales	Zosteraceae	<i>Zostera marina</i>	eel grass	—	0.25	—	—	N.D.	N.D.(<1.1)	N.D.(<1.2)	—	
			Arthropod	Malacostraca	Mysida	Mysidae	Mysidae	Mysidae	Many	0.13	Imago	—	5.0	1.4	3.6	—	
			Arthropod	Malacostraca	Malacostraca	Varunidae	<i>Hemigrapsus</i>	Hemigrapsus	132	0.068	Imago	—	13	3.8	8.9	—	
			Mollusca	Bivalvia	Pterioida	Ostreidae	<i>Crassostrea gigas</i>	Japanese oyster (molluscos part)	18	0.19	Imago	—	1.8	0.61	1.2	—	
			Mollusca	Bivalvia	Veneroidea	Veneridae	<i>Ruditapes philippinarum</i>	Japanese littleneck (molluscos part)	55	0.36	Imago	—	4.3	1.3	3.0	—	

