

○ Results (water)

Location				2013 July Survey											
		Latitude	Longitude	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)	37.620967°	140.522150°	7.4	1.5	6.5	8.7	16.8	0.09	3.0	19	11.7	0.13	0.27	0.0013
	A-1 (Deep layer)			7.4	1.6	8.0	8.3	16.7	0.09	3.1	39	15.5	0.28	0.56	—
	A-2	37.567300°	140.394567°	7.4	0.9	5.2	8.8	15.7	0.08	1.8	12	5.0	0.054	0.12	—
	B-1	37.784233°	140.492133°	7.5	1.3	4.9	9.3	18.8	0.10	2.9	17	10.6	0.11	0.23	—
	B-2	37.812083°	140.505917°	7.5	1.1	5.7	8.4	17.1	0.09	2.5	14	7.8	0.079	0.16	—
Udagawa River	B-3	37.816700°	140.471417°	7.6	0.9	5.5	9.5	10.2	0.06	1.9	6	3.8	0.019	0.037	—
	C-1	37.795517°	140.745700°	7.4	1.2	2.8	9.5	12.7	0.07	1.1	2	1.3	0.025	0.051	—
	C-2	37.770933°	140.727683°	7.1	0.9	7.1	8.4	11.7	0.06	3.8	8	4.2	0.066	0.13	—
	C-3	37.733217°	140.804033°	7.8	0.6	2.8	9.3	11.3	0.06	1.0	3	1.8	0.050	0.10	—
	C-4	37.769233°	140.844167°	7.8	<0.5	2.8	9.4	11.1	0.06	0.9	1	1.0	0.019	0.039	0.00096
	C-5	37.764550°	140.859900°	7.2	0.9	3.5	8.3	11.6	0.06	1.4	2	0.9	0.013	0.027	—
Manogawa River	C-6	37.776450°	140.887467°	7.7	0.6	3.4	9.4	13.7	0.07	1.3	2	1.3	0.022	0.048	—
	D-1	37.733217°	140.925250°	8.1	0.5	3.3	12.1	11.2	0.06	1.3	<1	0.7	0.025	0.049	0.0019
	D-2	37.709467°	140.956500°	7.2	0.9	3.9	8.7	12.1	0.07	1.5	3	1.4	0.019	0.038	—
	D-3	37.704950°	140.962117°	7.0	0.7	3.4	10.6	13.2	0.07	1.4	2	1.4	0.021	0.042	—
	D-4 a	37.730933°	140.907800°	7.2	0.6	3.0	9.2	11.1	0.06	1.3	2	1.2	0.034	0.066	—
	D-4 b	37.731100°	140.909000°	7.3	0.7	2.7	9.3	11.1	0.06	1.1	1	1.1	0.031	0.064	—
Niida River	D-5	37.721567°	140.889400°	7.4	0.7	3.5	9.7	9.3	0.05	1.5	1	1.1	0.047	0.092	—
	E-1	37.661533°	140.911500°	7.4	0.5	3.2	9.1	7.6	0.04	1.5	5	2.3	0.17	0.37	0.0027
	E-2 a	37.664583°	140.945450°	7.2	0.5	3.4	10.3	8.2	0.05	1.6	5	2.6	0.20	0.39	—
	E-2 b	37.664067°	140.945783°	7.4	0.6	3.1	10.2	8.1	0.05	2.1	4	2.4	0.15	0.30	—
	E-3	37.644483°	141.001017°	7.2	1.3	3.3	8.8	10.9	0.06	1.8	4	2.2	0.12	0.24	—
	E-4	37.646233°	140.965800°	7.8	0.6	3.3	9.8	8.9	0.05	1.4	3	1.8	0.089	0.18	—
Ota River	E-5	37.665033°	140.917483°	7.5	0.6	3.5	9.9	7.8	0.04	1.6	3	2.1	0.16	0.32	—
	F-1	37.597483°	140.925117°	7.2	0.7	2.8	9.1	6.5	0.04	1.4	2	0.7	0.26	0.53	—
	F-2	37.601483°	140.943650°	7.0	0.5	2.9	8.3	7.5	0.04	1.3	2	0.7	0.22	0.44	0.0051
	F-3	37.604483°	140.964250°	7.3	0.8	3.0	8.6	7.6	0.04	1.3	3	1.4	0.31	0.64	—
	F-4	37.606983°	140.972000°	6.6	<0.5	1.4	9.0	8.1	0.05	0.6	<1	0.5	0.083	0.17	—
	F-5	37.602250°	140.987317°	6.9	0.7	2.9	9.1	9.3	0.05	1.0	4	1.8	0.13	0.28	—
Lake Hayama (Mano Dam)	F-6	37.595117°	141.012617°	6.9	0.9	4.9	7.9	199	1.07	2.2	6	3.5	0.14	0.28	—
	G-1 (Surface layer)	37.732050°	140.812717°	7.7	1.0	6.1	9.2	7.8	0.05	1.9	5	4.1	0.038	0.080	—
	G-1 (Deep layer)			8.3	1.3	6.3	9.8	8.0	0.04	2.1	6	4.5	0.039	0.080	0.0017
	G-3 (Surface layer)	37.730167°	140.830667°	8.8	0.8	5.8	10.2	7.6	0.04	2.3	4	3.3	0.027	0.057	—
	G-3 (Deep layer)			8.7	1.1	5.6	10.1	7.7	0.04	2.0	4	3.7	0.033	0.070	—
	G-5 (Surface layer)	37.734117°	140.808833°	8.8	1.0	5.9	8.5	7.6	0.05	2.2	5	3.7	0.031	0.069	—
G-5 (Deep layer)	8.8			0.9	5.8	9.3	7.6	0.04	1.9	4	3.6	0.029	0.059	—	
Lake Akimoto	H-1 (Surface layer)	37.657533°	140.126433°	7.3	0.8	3.6	8.7	4.7	0.03	1.7	2	1.5	0.0083	0.019	—
	H-1 (Deep layer)			6.9	0.7	3.2	8.8	4.2	0.03	1.6	1	1.3	0.0096	0.017	—
	H-3 (Surface layer)	37.665333°	140.132933°	7.3	0.8	3.5	8.4	4.8	0.03	2.1	1	1.2	0.0079	0.016	—
	H-3 (Deep layer)			6.8	0.8	3.1	8.2	4.2	0.03	1.6	2	1.3	0.0069	0.015	0.0017
	H-5 (Surface layer)	37.652333°	140.156833°	7.2	1.9	3.2	8.2	4.8	0.03	2.0	2	1.3	0.011	0.023	—
	H-5 (Deep layer)			7.0	0.8	3.7	8.2	4.1	0.03	1.7	2	1.6	0.0069	0.013	—
Lake Inawashiro	I-1 (Surface layer)	37.504683°	140.114333°	7.2	1.7	3.7	9.4	12.3	0.07	1.0	3	2.1	0.012	0.026	—
	I-1 (Deep layer)			6.5	<0.5	1.8	9.9	12.3	0.07	0.5	3	1.1	0.014	0.026	0.0010
	I-3 (Surface layer)	37.507700°	140.026250°	6.9	<0.5	1.6	8.6	11.6	0.09	0.6	<1	0.7	0.012	0.024	—
	I-3 (Deep layer)			6.9	<0.5	2.1	9.9	12.4	0.07	0.7	2	1.2	0.013	0.028	—
	J-1 (Surface layer)	37.420333°	140.100833°	6.9	<0.5	1.5	9.1	11.8	0.06	0.5	<1	0.5	0.019	0.041	—
	J-1 (Deep layer)			6.8	<0.5	2.0	9.5	11.6	0.06	0.5	<1	0.8	0.015	0.032	—
Off the mouth of the Abukuma River (Off Watari Town)	K-2 (Surface layer)	38.045633°	140.939850°	8.4	1.8	2.1	9.7	4,060	26.42	2.3	6	4.7	0.0073	0.016	—
	K-2 (Deep layer)			8.1	0.7	1.4	7.8	5,040	32.35	1.2	2	1.1	0.017	0.035	0.0021
Off Soma City (Matsukawaura)	L-2	37.815583°	140.976450°	8.1	1.0	1.8	7.6	4,130	25.50	2.0	1	0.9	0.016	0.035	0.0017
	L-3	37.821683°	140.976567°	8.1	1.4	1.9	7.6	4,060	25.01	1.9	<1	0.6	0.022	0.044	—
Off Iwaki City (Hisanohama)	M-2 (Surface layer)	37.199283°	141.085317°	8.1	<0.5	1.3	8.6	5,050	32.47	1.3	1	0.8	0.0023	0.0059	—
	M-2 (Deep layer)			8.1	<0.5	1.0	8.7	5,310	33.56	1.1	<1	0.3	0.0058	0.013	0.0010

○ Results (sediments)

Location		2013 July Survey																		
		Latitude	Longitude	pH	Redox potential E _{NHE} (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)	
										Gravel	Coarse sand	Medium sand	Fine sand	Silt	Clay	dian grain diam				num grain diam
										(2-75mm) (%)	(0.85-2mm) (%)	(0.25-0.85mm) (%)	(0.075-0.25mm) (%)	(0.005-0.075mm) (%)	(Less than 0.005mm) (%)	(mm)				(mm)
Abukuma River System	A-1	37.620967°	140.522150°	6.8	320	27.8	3.0	2	2.761	0	1.3	40.9	39.6	7.4	10.8	0.22	2	5.8	12	N.D.(<0.19)
	A-2	37.567300°	140.394567°	6.9	81	33.6	2.9	6	2.632	49.3	27.2	8.8	3.5	4.7	6.5	2.0	19	320	720	—
	B-1	37.784233°	140.492133°	7.2	274	39.1	3.2	6	2.737	1.7	2.1	31.0	45.3	9.1	10.8	0.20	4.75	520	1,000	—
	B-2	37.812083°	140.505917°	7.0	247	27.3	3.4	4	2.695	19.7	6.6	41.1	25.4	3.1	4.1	0.36	19	280	600	—
	B-3	37.816700°	140.471417°	6.9	263	18.6	1.1	<1	2.692	51.3	32.3	13.8	1.5	0.2	0.9	2.1	19	52	110	—
Uda River	C-1	37.795517°	140.745700°	7.0	230	28.6	5.1	2	2.815	41.7	26.5	21.2	4.2	2.4	4.0	1.5	19	310	620	—
	C-2	37.770933°	140.727683°	6.8	42	50.0	8.2	24	2.743	19.4	13.0	22.3	12.7	10.5	22.1	0.33	19	1,700	3,500	—
	C-4	37.769233°	140.844167°	7.2	276	18.4	2.2	<1	2.755	50.9	32.2	14.5	1.3	0.3	0.8	2.0	19	220	450	0.73
	C-5	37.764550°	140.859900°	6.8	242	29.2	3.2	1	2.747	4.1	27.0	56.9	6.8	2.1	3.1	0.62	9.5	500	1,100	—
Mano River	D-1	37.733217°	140.925250°	7.1	302	17.3	2.1	8	2.722	42.3	37.3	17.3	2.3	0.2	0.6	1.7	19	400	900	0.87
	D-2	37.709467°	140.956500°	7.1	342	16.2	1.7	18	2.724	41.2	30.7	19.8	5.4	1.3	1.6	1.6	19	220	450	—
	D-3	37.704950°	140.962117°	7.0	312	15.5	1.5	1	2.697	55.1	29.1	13.9	1.0	0.3	0.6	2.4	19	130	270	—
	D-4 a	37.730933°	140.907800°	7.3	286	21.5	2.7	22	2.734	39.2	26.4	27.8	4.7	0.8	1.1	1.4	19	640	1,300	—
	D-5	37.721567°	140.889400°	7.0	191	22.3	2.7	<1	2.725	34.8	19.9	35.0	6.7	1.6	2.0	1.0	19	600	1,300	—
Niida River	E-1	37.661533°	140.911500°	7.4	368	16.2	1.1	2	2.667	51.4	35.0	11.3	0.6	0.4	1.3	2.1	19	770	1,700	0.36
	E-2 a	37.664583°	140.945450°	7.3	402	40.0	3.6	6	2.667	13.8	8.7	34.0	25.7	7.9	9.9	0.30	19	2,400	5,100	—
	E-3	37.644483°	141.001017°	7.2	365	14.5	1.1	1	2.703	66.4	24.0	8.6	0.6	0.1	0.3	3.3	19	140	320	—
	E-4	37.646233°	140.965800°	7.2	408	13.3	1.6	1	2.702	44.6	14.2	31.6	7.4	0.4	1.8	1.4	19	470	960	—
	E-5	37.665033°	140.917483°	7.1	362	18.6	1.7	2	2.681	30.9	35.9	27.8	3.8	0.4	1.2	1.3	19	640	1,400	—
Ota River	F-1	37.597483°	140.925117°	7.4	397	30.8	3.2	<1	2.690	3.3	24.4	39.5	15.5	7.7	9.6	0.48	19	1,400	2,900	—
	F-2	37.601483°	140.943650°	7.4	401	13.8	1.0	<1	2.661	59.9	26.7	10.6	1.2	0.7	0.9	2.8	19	2,500	5,200	0.59
	F-3	37.604483°	140.964250°	7.4	426	14.8	1.2	2	2.670	54.1	28.0	12.2	2.5	1.3	1.9	2.3	19	2,700	5,700	—
	F-4	37.606983°	140.972000°	7.2	409	13.8	0.6	<1	2.688	42.9	32.3	19.5	3.5	0.8	1.0	1.7	19	500	1,100	—
	F-5	37.602250°	140.987317°	7.2	322	16.4	0.8	<1	2.703	40.8	23.3	28.1	5.0	1.5	1.3	1.4	19	560	1,100	—
Lake Hayama (Mano Dam)	G-1	37.732050°	140.812717°	6.9	147	69.4	18.5	88	2.543	0	0.4	6.0	51.6	19.7	22.3	0.10	2	4,400	9,300	5.3
	G-2	37.726733°	140.822333°	7.0	116	73.8	17.6	46	2.518	0	0.8	1.7	4.5	39.8	53.2	0.0023	2	11,000	23,000	—
	G-3	37.730167°	140.830667°	6.9	90	53.9	7.8	20	2.634	5.6	4.8	9.4	16.0	25.8	38.4	0.027	9.5	1,800	3,900	—
	G-4	37.738200°	140.803450°	7.3	212	28.3	3.2	3	2.690	12.3	35.2	31.7	10.3	3.6	6.9	0.80	19	1,500	3,100	—
	G-5	37.734117°	140.808833°	6.8	152	75.6	27.4	99	2.410	0	0.1	3.6	21.8	41.3	33.2	0.019	2.0	6,700	14,000	—
Lake Akimoto	H-1	37.657533°	140.126433°	6.7	68	64.1	9.0	24	2.648	0	0	0.2	0.1	57.6	42.1	0.0067	2	190	390	—
	H-2	37.661550°	140.122550°	6.7	38	77.3	14.5	51	2.518	0	0.1	0.1	0.2	46.8	52.8	0.0038	2	540	1,100	—
	H-3	37.665333°	140.132933°	6.6	43	63.9	11.2	29	2.561	0	0.1	0.2	10.7	50.6	38.4	0.011	2	770	1,600	1.6
	H-4	37.655067°	140.118050°	6.8	48	62.9	9.0	25	2.625	0.6	1.1	2.1	10.4	46.4	39.4	0.012	4.75	380	830	—
	H-5	37.652333°	140.156833°	6.7	29	55.1	6.8	24	2.684	0	0.1	1.4	32.4	38.3	27.8	0.031	4.75	540	1,200	—
Lake Inawashiro	I-1	37.504683°	140.114333°	6.7	33	42.7	3.2	<1	2.701	44.0	12.3	20.1	15.1	3.5	5.0	1.3	37.5	120	270	N.D.(<0.16)
	I-2	37.499467°	140.140883°	6.8	3	73.5	8.5	2	2.604	0.4	1.1	3.0	32.8	40.0	22.7	0.048	4.75	490	1,100	—
	I-3	37.507700°	140.026250°	6.7	80	74.0	11.4	1	2.631	0.6	0.1	0.9	22.4	52.4	23.6	0.023	4.75	66	170	—
	I-4	37.515967°	140.109167°	6.4	368	19.1	1.2	2	2.832	43.7	15.4	32.5	7.6	0.2	0.6	1.4	19	19	49	—
	J-1	37.420333°	140.100833°	6.6	392	27.9	1.5	1	2.765	6.6	8.1	50.0	32.9	0.6	1.8	0.31	9.5	56	130	—
Off the mouth of the Abukuma River (Off Watari Town)	K-1	38.045733°	140.928500°	7.6	186	21.0	1.3	<1	2.696	0	15.8	66.4	15.8	0.8	1.2	0.50	2	8.4	23	—
	K-2	38.045633°	140.939850°	7.7	175	30.7	2.4	<1	2.765	0	0.1	1.3	74.7	10.5	13.4	0.12	2	39	84	N.D.(<0.15)
	K-3	38.045917°	140.951983°	7.7	-11	56.3	8.0	14	2.688	0	0	0.1	5.4	51.3	43.2	0.0071	2	420	920	—
Off Soma City (Matsukawaura)	L-1	37.820983°	140.960800°	8.1	114	27.7	2.5	4	2.733	6.5	11.6	40.8	19.7	9.2	12.2	0.33	9.5	46	100	—
	L-2	37.815583°	140.976450°	7.9	99	27.1	1.9	2	2.723	0	0.2	23.2	68.7	0.6	7.3	0.18	2	26	53	N.D.(<0.15)
	L-3	37.821683°	140.976567°	8.0	141	21.1	1.1	<1	2.774	0	0.6	54.9	41.7	0.4	2.4	0.27	2	40	110	—
Off Iwaki City (Hisanohama)	M-1	37.173717°	141.078817°	7.7	220	27.3	1.9	<1	2.798	0	0	2.5	92.4	2.4	2.7	0.15	0.85	220	460	—
	M-2	37.199283°	141.085317°	7.8	216	27.0	2.2	1	2.814	0	0	3.2	90.8	0.5	5.5	0.15	0.85	70	140	N.D.(<0.20)
	M-3	37.232167°	141.093267°	7.8	220	25.6	2.2	2	2.769	0.9	1.4	3.6	90.1	1.0	3.0	0.16	4.75	50	110	—

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 July 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		
Abukuma River System	A-2 (Harase River)	2013/7/10	Algae/plant	—	—	—	Attached algae	—	0.044	—	—	730	230	500	—	
			Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Stenopsyche marmorata	103	0.029	Larva	—	202	62	140	—
			Arthropod	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	Macromia amphigena	244	0.12	Larva	—	39	13	26	—
			Arthropod	Insecta	Odonata	Cordulegastridae	<i>Anotogaster sieboldii</i>	Anotogaster sieboldii								
			Arthropod	Insecta	Odonata	Gomphidae	<i>Asiagomphus melaenops</i>	Asiagomphus melaenops								
			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	Libellulidae	<i>Orthetrum albistylum speciosum</i>	Common skimmer								
			Arthropod	Insecta	Odonata	Libellulidae	<i>Sympetrum sp.</i>	Sympetrum								
			Arthropod	Malacostraca	Malacostraca	Atyidae	<i>Neocaridina sp.</i>	Neocaridina sp.	998	0.15	Imago	—	76	24	52	—
			Mollusca	Gastropoda	Sorbococoncha	Pleuroceridae	<i>Semisulcospira libertina</i>	Semisulcospira libertina	39	0.056	Imago	—	28	8.5	19	—
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Phoxinus lagowskii steindachneri</i>	Amur Minnow	101	0.46	More than 1 year old	—	37	13	24	—
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	11	0.13	2-year-old fish	—	42	14	28	—
			Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Misgurnus anguillicaudatus</i>	Oriental weatherfish	63	0.076	More than 1 year old	—	32	11	21	—
			Vertebrata	Amphibia	Anura	Ranidae	<i>Rana porosa porosa</i>	Daruma pond frog	19	0.11	Imago	—	49	16	33	—
			Vertebrata	Amphibia	Anura	—	—	Tadpole	156	0.15	Larva	—	330	110	220	—
			Vertebrata	Amphibia	Caudata	Salamandridae	<i>Cynops pyrrhogaster</i>	Cynops pyrrhogaster	4	0.035	Imago	—	67	22	45	—
						coarse particulate organic matters (CPOMs)	—	—	—	CPOMs(fallen leaves)	—	0.73	—	—	830	270

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0.00

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		
Abukuma River System	B-2	2013/7/11	Vertebrata	Osteichthyes	Siluriformes	Ictaluridae	<i>Ictalurus punctatus</i>	Channel catfish(large)	2	4.1	3-year-old fish	Small fish (Pale chub)	108	33	75	0.25
		2013/7/14	Vertebrata	Osteichthyes	Siluriformes	Siluridae	<i>Silurus asotus</i>	Amur catfish	1	1.1	Yearling fish	Crustaceans (Red swamp crawfish)	274	84	190	—
		2013/7/20	Vertebrata	Osteichthyes	Osmeriformes	Osmeridae	<i>Plecoglossus altivelis</i>	Sweetfish (natural upstream)	33	1.1	Mature fish	Contents available (details unknown)	53	18	35	—
	B-3 (Surikami River)	2013/7/9	Vertebrata	Osteichthyes	Siluriformes	Ictaluridae	<i>Ictalurus punctatus</i>	Channel catfish(medium)	4	0.28	1-year-old fish	Aquatic insects (larva)	16	5.3	11	—
			Algae/plant	—	—	—	—	Attached algae	—	0.052	—	—	450	140	310	—
			Streptophyta	Zygnematomyxozoa	Zygnematales	Zygnemataceae	<i>Spirogyra sp.</i>	Spirogyra	—	0.029	—	—	N.D.	N.D.(<1.5)	N.D.(<1.2)	—
			Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Stenopsyche marmorata	295	0.0078	Young larva	—	198	68	130	—
			Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Stenopsyche marmorata	621	0.21	Last instar larva	—	132	44	88	—
			Arthropod	Insecta	Megaloptera	Corydalidae	<i>Parachauliodes continentalis</i>	<i>Parachauliodes continentalis</i> Weele	95	0.068	Larva	—	15	4.4	11	—
			Arthropod	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	<i>Protohermes grandis</i>	—	—	—	—	—	—	—	—
			Arthropod	Insecta	Odonata	Corduliidae	<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>Davidius sp.</i>	Davidius	77	0.037	Larva	—	23	7.8	15	—
			Arthropod	Insecta	Odonata	Gomphidae	<i>Onychogomphus viridicostus</i>	Onychogomphus viridicostus	—	—	—	—	—	—	—	—
			Arthropod	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	Sieboldius albardae	—	—	—	—	—	—	—	—
			Arthropod	Insecta	Odonata	Libellulidae	<i>Orthetrum albistylum speciosum</i>	Common skimmer	—	—	—	—	—	—	—	—
			Arthropod	Malacostraca	Decapoda	Procambarus	<i>Procambarus clarkii</i>	Red swamp crawfish	21	0.37	Imago	—	62	20	42	—
			Mollusca	Gastropoda	Sorbococoncha	Pleuroceridae	<i>Semisulcospira libertina</i>	Semisulcospira libertina	142	0.058	Imago	—	120	39	81	—
			Vertebrata	Osteichthyes	Osmeriformes	Osmeridae	<i>Plecoglossus altivelis</i>	Sweetfish (natural upstream)	7	0.14	Yearling fish	—	38	12	26	—
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	25	0.22	1 and 2-year-old fish	—	43	14	29	—
			Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Misgurnus anguillicaudatus</i>	Oriental weatherfish	14	0.066	More than 1 year old	—	46	15	31	—
			Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Seema	3	0.96	2-year-old fish	Insects	18	5.5	12	—
			Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Yamame trout (small)	12	0.16	Yearling fish	Insects	16	5.3	11	—
			Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Yamame trout (medium)	2	0.072	1-year-old fish	Insects	14	4.4	9.9	—
			Vertebrata	Amphibia	Anura	Ranidae	<i>Rana rugosa</i>	Wrinkled Frog	12	0.035	Imago	—	49	16	33	—
			Vertebrata	Amphibia	Anura	—	—	—	7	0.011	Larva	—	550	180	370	—
			coarse particulate organic matters (CPOMs)	—	—	—	—	—	—	0.26	—	—	165	55	110	—

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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		
Uda River	C-6	2013/7/14	Algae/plant	—	—	—	Attached algae	—	0.077	—	—	520	170	350	—	
			Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	<i>Stenopsyche marmorata</i>	283	0.051	Larva	—	283	67	150	—
			Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche sauteri</i>	<i>Parastenopsyche sauteri</i>	—	—	—	—	—	—	—	—
			Arthropod	Insecta	Megaloptera	Corydalidae	<i>Parachauliodes continentalis</i>	<i>Parachauliodes continentalis</i> Weele	59	0.024	Larva	—	59	18	40	—
			Arthropod	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	<i>Protohermes grandis</i>	—	—	—	—	—	—	—	—
			Arthropod	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	<i>Macromia amphigena</i>	—	—	—	—	—	—	—	—
			Arthropod	Insecta	Odonata	Cordulegastridae	<i>Anotogaster sieboldii</i>	<i>Anotogaster sieboldii</i>	—	—	—	—	—	—	—	—
			Arthropod	Insecta	Odonata	Gomphidae	<i>Asiagomphus melaenops</i>	<i>Asiagomphus melaenops</i>	—	—	—	—	—	—	—	—
			Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius nanus</i>	<i>Davidius nanus</i>	—	—	—	—	—	—	—	—
			Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	<i>Davidius</i>	231	0.059	Larva	—	21	7.2	14	—
			Arthropod	Insecta	Odonata	Gomphidae	<i>Nihonogomphus viridis</i>	<i>Nihonogomphus viridis</i>	—	—	—	—	—	—	—	—
			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 suzukii</i>	<i>Stylogomphus suzukii</i>	—	—	—	—	—	—	—	—
			Arthropod	Malacostraca	Decapoda	Procambarus	<i>Procambarus clarkii</i>	Red swamp crawfish	8	0.11	Imago	—	29	9.0	20	—
			Arthropod	Malacostraca	Decapoda	Grapsidae	<i>Eriocheir japonica</i>	Japanese mitten crab	7	0.22	Imago	—	55	16	39	—
			Arthropod	Malacostraca	Decapoda	Atyidae	<i>Atyidae</i>	Freshwater shrimp	233	0.049	Imago	—	43	14	29	—
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Nipponocypris temminckii</i>	Dark chub	12	0.13	More than 1 year old	—	45	15	30	—
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	3	0.078	4-year-old fish	Contents available (details unknown)	86	30	56	—
			Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius fluviatilis</i>	R. fluviatilis	24	0.098	More than 1 year old	—	141	42	99	—
Vertebrata	Amphibia	Anura	Ranidae	<i>Rana japonica</i>	Japanese Brown Frog	20	0.031	Imago	—	12	3.3	8.4	—			
Vertebrata	Amphibia	Anura	Hylidae	<i>Hyla japonica</i>	Japanese tree frog	42	0.021	Imago	—	16	4.5	11	—			
			coarse particulate organic matters (CPOMs)	—	—	—	CPOMs(fallen leaves)	—	0.91	—	205	65	140	—		

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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		
Mano River	D-1 D-2	2013/7/16	Vertebrata	Osteichthyes	Osmeriformes	Osmeridae	<i>Plecoglossus altivelis</i>	Sweetfish (stock)	42	1.5	Yearling fish	—	6	1.4	4.5	—
			Vertebrata	Osteichthyes	Osmeriformes	Osmeridae	<i>Plecoglossus altivelis</i>	Sweetfish (natural upstream)	106	1.1	Yearling fish	—	77	26	51	—
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Cyprinus carpio</i>	Common carp	1	1.1	5-year-old fish	—	30	9.3	21	—
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Zacco platypus</i>	Zacco platypus	3	0.053	Mature fish	—	30	9.6	20	—
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	1	0.026	Mature fish	—	37	13	24	—
		Amphibia	Amphibia	Anura	Ranidae	<i>Rana catesbeiana</i>	American Bullfrog (tadpole)	5	0.072	Larva	—	420	140	280	—	
		Algae/plant	—	—	—	—	Attached algae	—	0.095	—	—	1,610	510	1,100	—	
		Streptophyta	Zygnematophyceae	Zygnematales	Zygnemataceae	<i>Spirogyra sp.</i>	Spirogyra	—	0.39	—	—	14	4.4	9.1	—	
		Bryopsida	Sphagnopsida	Sphagnales	Sphagnaceae	<i>Sphagnum sp.</i>	Sphagnum	—	0.42	—	—	350	110	240	—	
		Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	<i>Stenopsyche marmorata</i>	432	0.11	Larva	—	222	72	150	—	
		Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche sauteri</i>	<i>Parastenopsyche sauteri</i>									
		Arthropod	Insecta	Megaloptera	Corydalidae	<i>Parachauliodes continentalis</i>	<i>Parachauliodes continentalis</i> Weele	150	0.087	Larva	—	150	15	29	—	
		Arthropod	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	<i>Protohermes grandis</i>	104	0.034	Larva	—	59	20	39	—	
		Arthropod	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	<i>Macromia amphigena</i>									
		Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius nanus</i>	<i>Davidius nanus</i>									
		Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	<i>Davidius</i>									
		Arthropod	Insecta	Odonata	Gomphidae	<i>Nihonogomphus viridis</i>	<i>Nihonogomphus viridis</i>									
		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	Libellulidae	<i>Sympetrum sp.</i>	<i>Sympetrum</i>									
		Arthropod	Insecta	Odonata	Aeshnidae	<i>Boyeria maclachlani</i>	<i>Boyeria maclachlani</i>									
		Arthropod	Insecta	Odonata	Aeshnidae	<i>Planaeschna milnei</i>	<i>Planaeschna milnei</i>									
		Arthropod	Malacostraca	Decapoda	Procambarus	<i>Procambarus clarkii</i>	Red swamp crawfish	17	0.64	Imago	—	350	110	240	—	
		Arthropod	Malacostraca	Decapoda	Atyidae	Atyidae	Freshwater shrimp	414	0.079	Imago	—	180	60	120	—	
		Mollusca	Gastropoda	Sorbococoncha	Pleuroceridae	<i>Semisulcospira libertina</i>	<i>Semisulcospira libertina</i>	51	0.087	Imago	—	99	32	67	—	
		Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius sp.</i>	R. sp. CB	55	0.13	More than 1 year old	—	254	84	170	—	
		Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Yamame trout	1	0.013	Yearling fish	Contents available (details unknown)	99	35	64	—	
		Vertebrata	Amphibia	Anura	—	—	—	25	0.0087	Larva	—	1,100	370	730	—	
	coarse particulate organic matters (CPOMs)	—	—	—	—	—	—	1.1	—	—	670	220	450	—		

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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			
Nida River	E-1 E-2a E-2b	2013/7/18	Algae/plant	—	—	—	Attached algae	—	0.035	—	—	4,000	1,300	2,700	—		
			Streptophyta	Zygnematomyxozoa	Zygnematales	Zygnemataceae	<i>Spirogyra sp.</i>	Spirogyra	—	0.15	—	—	9.3	3.5	5.8	—	
			Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	<i>Stenopsyche marmorata</i>	232	0.045	Larva	—	—	1,500	500	1,000	—
			Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche sauteri</i>	<i>Parastenopsyche sauteri</i>									
			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 melaenops</i>	<i>Asiagomphus melaenops</i>									
			Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	Davidius									
			Arthropod	Insecta	Odonata	Gomphidae	<i>Gomphus postocularis</i>	<i>Gomphus postocularis</i>	69	0.023	Larva	—	—	270	90	180	—
			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>Sinogomphus flavolimbatus</i>	<i>Sinogomphus flavolimbatus</i>									
			Arthropod	Insecta	Odonata	Libellulidae	<i>Sympetrum sp.</i>	Sympetrum									
			Arthropod	Malacostraca	Decapoda	Grapsidae	<i>Eriocheir japonica</i>	Japanese mitten crab	36	1.9	Imago	—	—	400	130	270	—
			Arthropod	Malacostraca	Decapoda	Atyidae	Atyidae	Freshwater shrimp	48	0.012	Imago	—	—	740	240	500	—
			Vertebrata	Osteichthyes	Osmeriformes	Osmeridae	<i>Plecoglossus altivelis</i>	Sweetfish (natural upstream)	3	0.096	Yearling fish	Contents available (details unknown)	—	266	86	180	—
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	7	0.088	3-year-old fish	—	—	266	86	180	—
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Pseudogobio esocinus</i>	Pseudogobio esocinus	6	0.027	2-year-old fish	—	—	270	90	180	—
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Hemibarbus barbus</i>	Hemibarbus barbus	15	0.007	Yearling fish	—	—	198	68	130	—
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Zacco platypus</i>	Zacco platypus	5	0.043	More than 1 year old	Contents available (details unknown)	—	303	93	210	—
			Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius sp.</i>	R. sp. CB	10	0.026	More than 1 year old	—	—	460	150	310	—
			Vertebrata	Osteichthyes	Siluriformes	Siluridae	<i>Silurus asotus</i>	Amur catfish	3	0.012	Yearling fish	—	—	420	120	300	—
						coarse particulate organic matters (CPOMs)	—	—	—	—	—	—	—	870	280	590	—

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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						
Ota River	F-1	2013/7/15	Algae/plant	—	—	—	Attached algae	—	0.090	—	—	8,000	2,500	5,500	—					
			Streptophyta	Zygnemataphyceae	Zygnematales	Zygnemataceae	<i>Spirogyra sp.</i>	Spirogyra	—	0.030	—	—	159	49	110	—				
			Bryopsida	Sphagnopsida	Sphagnales	Sphagnaceae	<i>Sphagnum sp.</i>	Sphagnum	—	0.074	—	—	390	130	260	—				
			Angiospermae	Monocotyledoneae	Najadales	Potamogetonaceae	<i>Potamogeton pusillus</i>	Small pondweed	—	0.13	—	—	70	21	49	—				
			Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	<i>Stenopsyche marmorata</i>	63	0.011	Larva	—	—	840	280	560	—			
			Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche sauteri</i>	<i>Parastenopsyche sauteri</i>												
			Arthropod	Insecta	Megaloptera	Corydalidae	<i>Parachauliodes continentalis</i>	<i>Parachauliodes continentalis</i> Weele	54	0.030	Larva	—	—	150	100	210	—			
			Arthropod	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	<i>Protohermes grandis</i>												
			Arthropod	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	<i>Macromia amphigena</i>	199	0.046	Larva	—	—	550	180	370	—			
			Arthropod	Insecta	Odonata	Cordulegastridae	<i>Anotogaster sieboldii</i>	<i>Anotogaster sieboldii</i>												
			Arthropod	Insecta	Odonata	Gomphidae	<i>Anisogomphus maacki</i>	<i>Anisogomphus maacki</i>												
			Arthropod	Insecta	Odonata	Gomphidae	<i>Asiagomphus melaenops</i>	<i>Asiagomphus melaenops</i>												
			Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius nanus</i>	<i>Davidius nanus</i>												
			Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	<i>Davidius</i>												
			Arthropod	Insecta	Odonata	Gomphidae	<i>Nihonogomphus viridis</i>	<i>Nihonogomphus viridis</i>												
			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 suzukii</i>	<i>Stylogomphus suzukii</i>												
			Arthropod	Insecta	Odonata	Aeshnidae	<i>Boyeria maclachlani</i>	<i>Boyeria maclachlani</i>												
			Arthropod	Insecta	Odonata	Libellulidae	<i>Sympetrum sp.</i>	<i>Sympetrum</i>												
			Arthropod	Malacostraca	Decapoda	Atyidae	<i>Atyidae</i>	Freshwater shrimp										119	0.035	Imago
			Arthropod	Malacostraca	Decapoda	Procambarus	<i>Procambarus clarkii</i>	Red swamp crawfish	2	0.050	Imago	—	—	970	310	660	—			
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius auratus</i>	<i>Carassius auratus</i> langsdor	4	0.26	4-year-old fish	—	—	1,750	550	1,200	—			
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	18	0.091	More than 1 year old	—	—	1,290	410	880	—			
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Zacco platypus</i>	Zacco platypus	7	0.045	More than 1 year old	—	—	1,070	360	710	—			
			Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Cobitis biwae</i>	<i>Cobitis biwae</i>	37	0.064	More yearling	—	—	1,360	440	920	—			
			Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Yamame trout	2	0.026	Yearling fish	—	—	920	290	630	—			
			Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius fluviatilis</i>	<i>R. fluviatilis</i>	28	0.099	Mature fish	—	—	2,950	950	2,000	—			
						coarse particulate organic matters (CPOMs)	—	—	—	—	CPOMs(fallen leaves)	—	0.48	—	—	—	4,300	1,400	2,900	—

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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			
Lake Hiyama (Mano River System)	G-1	2013/7/17	Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius auratus</i>	Carassius auratus langsdorffii	2	2.3	8-year-old fish	Contents available (details unknown)	710	230	480	1.0	
	G-2		Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Yamame trout	2	0.087	2-year-old fish	Aquatic insects	310	100	210	—	
	G-3		Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	3	1.9	3-year-old fish	Small fish	2,650	850	1,800	1.8	
	G-4	2013/7/17	Algae/plant	—	—	—	—	Attached algae	—	0.089	—	—	3,400	1,100	2,300	—	
			Algae/plant	—	—	—	—	—	Floating algae	—	0.051	—	—	17	4.9	12	—
			Streptophyta	Zygnemataphyceae	Zygnematales	Zygnemataceae	<i>Spirogyra sp.</i>	Spirogyra	—	0.47	—	—	620	200	420	—	
			Angiospermae	Monocotyledoneae	Najadales	Potamogetonaceae	<i>Potamogeton pusillus</i>	Small pondweed	—	0.46	—	—	10	3.1	6.7	—	
			Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	<i>Stenopsyche marmorata</i>	257	0.057	Larva	—	340	110	230	—	
			Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche sauteri</i>	<i>Parastenopsyche sauteri</i>	83	0.033	Larva	—	89	31	58	—	
			Arthropod	Insecta	Megaloptera	Corydalidae	<i>Parachauliodes continentalis</i>	<i>Parachauliodes continentalis</i> Weele	—	—	—	—	—	—	—	—	
			Arthropod	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	<i>Protohermes grandis</i>	—	—	—	—	—	—	—	—	
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	4	0.041	2-year-old fish	Contents available (details unknown)	255	85	170	—	
			Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Yamame trout	8	0.055	Yearling fish	Contents available (details unknown)	225	75	150	—	
			Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius flumineus</i>	Rhinogobius flumineus	42	0.048	More than 1 year old	—	287	97	190	—	
			coarse particulate organic matters (CPOMs)	—	—	—	—	—	CPOMs(fallen leaves)	—	0.44	—	—	560	180	380	—

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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				
Lake Akimoto	H-1 H-2 H-3	2013/7/12	Algae/plant	—	—	—	—	—	0.049	—	—	1.3	N.D. (<0.96)	1.3	—			
			Angiospermae	Monocotyledoneae	Hydrocharitales	Hydrocharitaceae	<i>Elodea nuttallii</i>	Western Waterweed	—	0.34	—	—	7.3	2.4	4.9	—		
			Arthropod	Insecta	Coleoptera	Lampyridae	<i>Luciola cruciata</i>	Japanese firefly	23	0.0012	Imago	—	—	N.D.	N.D. (<22)	N.D. (<21)	—	
			Arthropod	Malacostraca	Decapoda	Astacidae	<i>Pacifastacus leniusculus trowbridgii</i>	Signal crayfish	57	2.2	Imago	—	—	77	24	53	8.5	
			Mollusca	Gastropoda	Sorbeoconcha	Pleuroceridae	<i>Semisulcospira libertina</i>	Semisulcospira libertina	157	0.14	Imago	—	—	60	19	41	—	
			Vertebrata	Osteichthyes	Osmeriformes	Osmeridae	<i>Hypomesus nipponensis</i>	Japanese smelt	111	0.49	Mature fish	—	—	25	8.2	17	—	
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Phoxinus lagowskii steindachneri</i>	Amur Minnow	29	0.13	More than 1 year old	—	—	16	5.2	11	—	
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Zacco platypus</i>	Zacco platypus	35	1.0	Mature fish	—	—	56	17	39	—	
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	35	3.6	Mature fish	Plant fragments, insects	—	102	31	71	—	
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius sp.</i>	Carassius	12	2.6	5-year-old fish	Contents available (details unknown)	—	136	42	94	1.6	
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Hemibarbus barbus</i>	Hemibarbus barbus	12	6.1	More than 3 year old	Contents available (details unknown)	—	116	36	80	1.2	
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Cyprinus carpio</i>	Common carp	1	1.8	6-year-old fish	Contents available (details unknown)	—	51	16	35	—	
			Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Trout (Nakanishi River collected individuals)	1	0.048	1-year-old fish	Insects	—	40	13	27	—	
			Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Trout (Lake Akimoto collected individuals)	1	0.16	Mature fish	Small fish(Japanese smelt)	—	92	31	61	—	
			Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Salvelinus leucomaenis</i>	Char	2	0.45	Mature fish	Contents available (details unknown)	—	113	38	75	—	
			Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	11	5.0	More than 3 year old	Small fish(Japanese smelt)	—	264	84	180	1.2	
			Vertebrata	Amphibia	Anura	Rhacophoridae	<i>Rhacophorus arboreus</i>	Forest Green Tree Frog	6	0.047	Imago	—	—	55	18	37	—	
			Vertebrata	Amphibia	Anura	Rhacophoridae	<i>Rhacophorus schlegelii</i>	Schlegel's green tree frog										
			Vertebrata	Amphibia	Anura	Ranidae	<i>Rana ornativentris</i>	Montane brown frog										
			Vertebrata	Amphibia	Anura	Ranidae	<i>Rana rugosa</i>	Wrinkled Frog										
			Vertebrata	Amphibia	Anura	Bufo	<i>Bufo japonicus formosus</i>	Japanese toad	18	0.093	Imago	—	—	24	7.5	16	—	
			Vertebrata	Amphibia	Caudata	Salamandridae	<i>Cynops pyrrhogaster</i>	Cynops pyrrhogaster										
						coarse particulate organic matters (CPOMs)	—	—	—	—	—	0.36	—	* relatively new deciduous <	119	38	81	—
						coarse particulate organic matters (CPOMs)	—	—	—	—	—	2.0	—	* relatively old deciduous	250	80	170	—

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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		
Lake Inawashiro	I-1 I-2 (north lakeside)	2013/7/11	coarse particulate organic matters (CPOMs)	—	—	—	—	—	1.1	—	—	162	52	110	—	
		2013/7/31	Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	2	0.38	4-year-old fish	Contents available (details unknown)	165	55	110	—
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius sp.</i>	Carassius	9	3.0	6-year-old fish	Contents available (details unknown)	55	18	37	0.45
			Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Seema	2	0.23	2-year-old fish	Small fish(Japanese smelt)	85	25	60	—
			Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Salvelinus leucomaenis</i>	Char	1	0.18	3-year-old fish	Small fish(Japanese smelt)	157	47	110	—
			Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	2	0.59	2-year-old fish	Insects	108	34	74	—
	Vertebrata	Osteichthyes	Siluriformes	Siluridae	<i>Silurus asotus</i>	Amur catfish	1	1.4	Mature fish	Contents available (details unknown)	141	43	98	—		
	J-1 (south lakeside)	2013/7/10	Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius sp.</i>	Carassius	16	1.227	Mature fish	Contents available (details unknown)	76	23	53	—
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace (large)	8	1.175	5-year-old fish	Contents available (details unknown)	109	32	77	—
		2013/7/11	Algae/plant	—	—	—	—	—	—	0.050	—	—	1.7	N.D.(<0.99)	1.7	—
			Angiospermae	Dicotyledoneae	Nymphaeales	Nymphaeaceae	<i>Nuphar japonicum</i>	Cow lily	—	2.673	—	—	2.9	1.3	1.6	—
			Angiospermae	Monocotyledoneae	Hydrocharitales	Hydrocharitaceae	<i>Elodea nuttallii</i>	Western Waterweed	—	0.014	—	—	N.D.	N.D.(<3.5)	N.D.(<3.0)	—
			Arthropod	Malacostraca	Decapoda	Palaemonidae	<i>Palaemon paucidens</i>	Common prawn	165	0.151	Imago	—	29	9.5	19	—
			Mollusca	Gastropoda	Architaenioglossa	Viviparidae	<i>Bellamya japonica</i>	Japanese mysterysnail	7	0.130	Imago	—	7.3	2.5	4.8	—
			Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Misgurnus anguillicaudatus</i>	Oriental weatherfish	10	0.046	More than 1 year old	—	N.D.	N.D.(<0.96)	N.D.(<0.95)	—
			Vertebrata	Amphibia	Anura	Ranidae	<i>Rana rugosa</i>	Wrinkled Frog	32	0.094	Imago	—	2.8	1.1	1.7	—
			Vertebrata	Amphibia	Anura	—	—	Tadpole	182	0.086	Larva	—	120	39	81	—
		2013/7/12	Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Pseudogobio esocinus</i>	Pseudogobio esocinus	48	0.707	Mature fish	—	44	16	28	—
		2013/7/13	Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace (small)	39	1.162	3-year-old fish	Contents available (details unknown)	124	37	87	—
			Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Hemibarbus barbus</i>	Hemibarbus barbus (small)	5	0.846	2-year-old fish	Contents available (details unknown)	100	31	69	—
2013/7/15		Vertebrata	Osteichthyes	Osmeriformes	Osmeridae	<i>Hypomesus nipponensis</i>	Japanese smelt	32	0.057	Mature fish	—	81	25	56	—	
	Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Hemibarbus barbus</i>	Hemibarbus barbus (large)	1	0.921	5-year-old fish	Contents none	81	26	55	—		
	Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	2	1.349	3-year-old fish	Crustaceans piece	158	48	110	—		

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										Growth stage	Stomach contents	Total	Cs-134	Cs-137		
Off the mouth of the Abukuma River (Off Watan Town)	Surrounding water area off the mouth of the Abukuma River	2013/7/18	Arthropod	Malacostraca	Decapoda	Portunidae	<i>Ovalipes punctatus</i>	Ovalipes punctatus	5	0.96	Imago	—	0.50	N.D.(<0.43)	0.50	—
			Vertebrata	Osteichthyes	Marbled rockfish	Fat greenling	<i>Hexagrammos otakii</i>	Fat greenling	17	3.7	Mature fish	Crustaceans piece	1.7	0.49	1.2	N.D.(<0.019)
			Vertebrata	Osteichthyes	Marbled rockfish	Gurnard	<i>Chelidonichthys spinosus</i>	Gurnard	12	3.8	Mature fish	Shrimps,small fish	4.9	1.6	3.3	—
			Vertebrata	Osteichthyes	Righteye flounder	Righteye flounder	<i>Pseudopleuronectes herzensteini</i>	Brown sole	8	2.6	4-year-old fish	Small fish	2.3	0.88	1.4	N.D.(<0.014)
			Vertebrata	Osteichthyes	Righteye flounder	Righteye flounder	<i>Kareius bicoloratus</i>	Stone flounder	8	3.9	3-year-old fish	Small fish	1.4	0.45	0.97	N.D.(<0.012)
			Vertebrata	Osteichthyes	Righteye flounder	Flounder	<i>Paralichthys olivaceus</i>	Flounder	7	4.1	2-year-old fish	Contents available (details unknown)	11	3.4	7.3	N.D.(<0.015)
			Vertebrata	Osteichthyes	Perciformes	Lateolabracidae	Lateolabracidae	<i>Lateolabrax japonicus</i>	Japanese sea bass	3	5.5	5-year-old fish	fish	13	4.4	9.0
Off Soma City (Matsukawaura)	L-1 L-2 L-3	2013/7/31	Algae/seaweed	—	—	—	—	Floating algae	—	0.049	—	—	21	6.4	15	—
			Chlorophyta	Ulvophyceae	Ulvales	Ulvaceae	<i>Ulva pertusa</i>	Ulva pertusa	—	0.22	—	—	2.6	0.72	1.9	—
			Angiospermae	Monocotyledoneae	Najadales	Zosteraceae	<i>Zostera marina</i>	eel grass	—	0.54	—	—	0.65	0.28	0.37	—
			Annelida	Polychaeta	—	—	Polychaeta	polychaetes	221	0.021	Imago	—	10	3.6	6.8	—
			Arthropod	Malacostraca	Mysida	Mysidae	Mysidae	Mysidae	Many	0.19	Imago	—	2.6	1.1	1.5	—
			Arthropod	Malacostraca	Decapoda	Alpheus	<i>Alpheus sp.</i>	Alpheus	37	0.069	Imago	—	6.0	2.3	3.7	—
			Arthropod	Malacostraca	Decapoda	Grapsidae	<i>Eriocheir japonica</i>	Japanese mitten crab	3	0.44	Imago	—	20	6.2	14	—
			Arthropod	Malacostraca	Decapoda	Portunidae	<i>Charybdis japonica</i>	Shore swimming crab	10	0.37	Imago	—	7.9	2.4	5.5	—
			Arthropod	Malacostraca	Malacostraca	Varunidae	<i>Hemigrapsus sp.</i>	Hemigrapsus	60	0.11	Imago	—	5.0	1.6	3.4	—
			Mollusca	Bivalvia	Pterioida	Ostreidae	<i>Crassostrea gigas</i>	Japanese oyster (shell)	9	0.94	Imago	—	15	4.6	10	—
			Mollusca	Bivalvia	Pterioida	Ostreidae	Japanese oyster (molluscan part)	—		3.1		—	2.2	0.79	1.4	—
			Mollusca	Bivalvia	Veneroidea	Veneridae	<i>Ruditapes philippinarum</i>	Japanese littleneck (shell)	148	1.6	Imago	—	3.0	0.85	2.1	—
			Mollusca	Bivalvia	Veneroidea	Veneridae	Japanese littleneck (molluscan part)	—		0.80		—	4.0	1.1	2.9	—
			Vertebrata	Osteichthyes	Pleuronectiformes	Pleuronectidae	Pleuronectidae	Pleuronectidae	11	0.048	Yearling fish	—	3.8	1.3	2.5	—
Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Favonigobius gymnauchen</i>	Favonigobius gymnauchen	38	0.047	Mature fish/Immature fish	—	4.3	1.4	2.9	—			
Vertebrata	Osteichthyes	Pacific herring	Pacific herring	<i>Konosirus punctatus</i>	Dotted gizzard shad	1	0.22	5-year-old fish	—	6.4	1.9	4.5	—			
Off Waki City (Hisanohama)	M-1 M-2 M-3	2013/7/30	Echinoderm	Sea Urchin	Sea urchin	Sea urchin	<i>Glyptocidaris crenularis</i>	tuguruuni	38	1.4	Imago	—	31	9.8	21	8.1
			Vertebrata	Osteichthyes	Perciformes	Sparidae	<i>Eynnys japonica</i>	Crimson sea-bream	2	0.78	Mature fish	Small Cephalopoda piece	10	3.2	7.1	—
			Vertebrata	Osteichthyes	John dory	John dory	<i>Zeus faber</i>	John dory	2	2.9	Mature fish	Small fish (flatfish)	4.3	1.5	2.8	N.D.(<0.022)
			Vertebrata	Osteichthyes	Marbled rockfish	Fat greenling	<i>Hexagrammos otakii</i>	Fat greenling	2	0.59	Mature fish	Crustaceans piece	5.9	2.0	3.9	—
			Vertebrata	Osteichthyes	Righteye flounder	Flounder	<i>Paralichthys olivaceus</i>	Flounder	4	5.0	3-year-old fish	Contents available (details unknown)	5.3	1.8	3.5	0.039
			Vertebrata	Osteichthyes	Righteye flounder	Righteye flounder	<i>Pleuronectes yokohamae</i>	Marbled sole	5	2.7	2-year-old fish	Crustaceans piece	40	13	27	0.13
			Vertebrata	Osteichthyes	Marbled rockfish	Gurnard	<i>Lepidotrigla microptera</i>	カサガシラ	17	1.4	Mature fish	Shrimp	5.7	1.6	4.1	—
			Vertebrata	Cartilage fish	Skate	Skate	<i>Okamejei konojei</i>	Common Skate	5	4.0	Mature fish	Shrimp,crab,small fish	106	34	72	0.46
			Vertebrata	Cartilage fish	Sandbar shark	Banded houndshark	<i>Mustelus manazo</i>	Star-spotted smooth-hound	2	2.6	Mature fish	Crab	37	12	25	0.083
	M-4 (Hisanohama)	2013/7/30	Brown algae	Phaeophyceae	Sea cabbage	Sea cabbage	<i>Eisenia bicyclis</i>	—	2.3	—	—	N.D.	N.D.(<0.63)	N.D.(<0.57)	—	
			Echinoderm	Sea Urchin	Loxechinus	Strongylocentrotus	<i>Strongylocentrotus nudus</i>	Northern sea urchin	24	2.3	Imago	—	5.0	1.7	3.3	—
			Mollusca	Gastropoda	Archaeogastropoda	Haliotis asinina	<i>Haliotis discus</i>	abalone(shell)	—	0.55	—	—	13	4.2	8.7	—
			Mollusca	Gastropoda	Archaeogastropoda	Haliotis asinina	<i>Haliotis discus</i>	abalone(molluscan body)	10	1.4	Imago	—	1.7	0.73	0.95	—