(News Release)
The Results of Radioactive Material Monitoring Surveys of Aquatic Organisms (2012 Summer Samples)

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In accordance with the Comprehensive Radiation Monitoring Plan determined by the Monitoring Coordination Meeting, the Ministry of the Environment (MOE) is continuing radioactive materials monitoring in surface water and its sediment (rivers, lakes and headwaters, and coasts).

Samples of aquatic organisms taken mainly in Fukushima Prefecture (summer: sampling period: August 7-September 21, 2012) have been measured as part of MOE's efforts to monitor radioactive materials; the results have been compiled and are released here.

The monitoring results of radioactive materials in surface water bodies carried out to date can be found at the following web page: http://www.env.go.jp/jishin/rmp.html#monitoring

1. Survey Overview
(1) Survey Locations

Type	Surveyed Areas		Survey Locations, etc.	Survey Date
Rivers	A	Abukumagawa River	Near Shinfunabashi Bridge, Harasegawa River (Tributary)	August 8, 2012
	B		Surikamigawa River (Tributary), Taishobashi Bridge	August 7, 9, 29, 2012
	C	Niidagawa River		September 21, 2012
	D	Manogawa River		August 22, 29, 2012
Lakes	E	Hayamako Lake (Mano Dam)		August 22, 29, 2012
	F	Akimotoko Lake		August 20, 2012
	G	Inawashiroko Lake	North Shore	August 10, 20, 2012
	H		South Shore	August 21, 2012
Sea areas	I	Offshore of Iwakishi City (Hisanohama Beach Offshore)		August 31, 2012
	J	Offshore of Somashi City (Matsukawaura Lake)		August 28, 2012
	K	Offshore of Abukumagawa River Estuary		August 29, 2012

(Map attached)

(2) Survey Method

Samples of aquatic organisms (aquatic insects, algae, crustaceans, shellfish, fishes, etc.) were collected and the concentration of radioactive materials (radioactive cesium (Cs-134 and Cs-137), etc.) in each type of organisms was measured.

2. Survey Results Summary (See Annex for details)

(1) Rivers and Lakes (lower row in each case shows the results of 2012 spring surveys)

There are variations between each body of water and the types of organism collected, but in general, a decline in the concentrations of radioactive cesium can be seen compared to the spring survey. Furthermore, just as in previous surveys, the concentration of radioactive cesium in rivers and lakes is higher than in sea areas.

Unit: Bq/kg-wet

			Plants (algae)	Aquatic insects	Crustacean	Shellfish	Fishes	Amphibians	CPOM (dry leaves, etc.)
Abukumagawa River System	Abukumagawa River A	**Summer 2012**	**94**	**199 (8 species mixed)**	**107, 156 (2 species)**	**39**	**34-75 (3 species)**	**104 (3 species mixed)**	**1,330**
		Spring 2012	740	52 (4 species mixed)	181	170	50-167 (7 species)	290-420 (5 species)	-
	Abukumagawa River B	**Summer 2012**	**360**	**139 (8 species mixed)**	**-**	**-**	**56-600 (13 species)**	**87, 750 (2 species)**	**270**
		Spring 2012	550	-	-	-	76-650 (10 species)	280, 370 (2 species)	—
Manogawa River System	Hayamako Lake E (Mano Dam)	**Summer 2012**	**132**	**450 (10 species mixed)**	**-**	**-**	**232-4,300 (9 species)**	**-**	**740**
		Spring 2012	1,870	510 (7 species mixed)	-	-	280-4,400 (4 species)	-	3,200
	Manogawa River D	**Summer 2012**	**23-570 (3 species)**	**460 (10 species mixed)**	**147-660 (3 species)**	**480**	**111-760 (7 species)**	**-**	**420**
		Spring 2012	260	198 (14 species mixed)	223	182	202-970 (4 species)	-	1,410
Niidagawa River C		**Summer 2012**	**-**	**-**	**-**	**-**	**199-1,620 (6 species)**	**-**	**-**
		Spring 2012	-	-	-	-	440-11,400 (5 species)	-	-
Akimotoko Lake F		**Summer 2012**	**7.1-44 (3 species)**	**-**	**156**	**-**	**63-310 (12 species)**	**71-136 (4 species)**	**156**
		Spring 2012	46	-	183	-	88-470 (7 species)	540	250
Inawashiroko Lake	Inawashiroko Lake G (North Shore)	**Summer 2012**	**42**	**-**	**-**	**-**	**9.1-330 (7 species)**	**-**	**172**
		Spring 2012	500	-	-	-	77-380 (6 species)	-	-
	Inawashiroko Lake H (South Shore)	**Summer 2012**	**4.8-12 (3 species)**	**-**	**-**	**62**	**11-178 (9 species)**	**68**	**-**
		Spring 2012	9	-	-	-	46-430 (6 species)	-	-

*As for monitored specimen, including fish, the entire organism is used.
For those aquatic insects with small number of samples, they are combined by body of water or location to measure radioactive material concentrations.

(2) Sea Areas (lower row in each case shows the results of 2012 spring surveys)

There are variations between each body of water and the type of organism collected, but in general, the levels are almost the same as those seen in the spring survey. Furthermore, just as in previous surveys, the concentrations of radioactive cesium in sea areas are lower than in rivers and lakes.

Unit: Bq/kg-wet

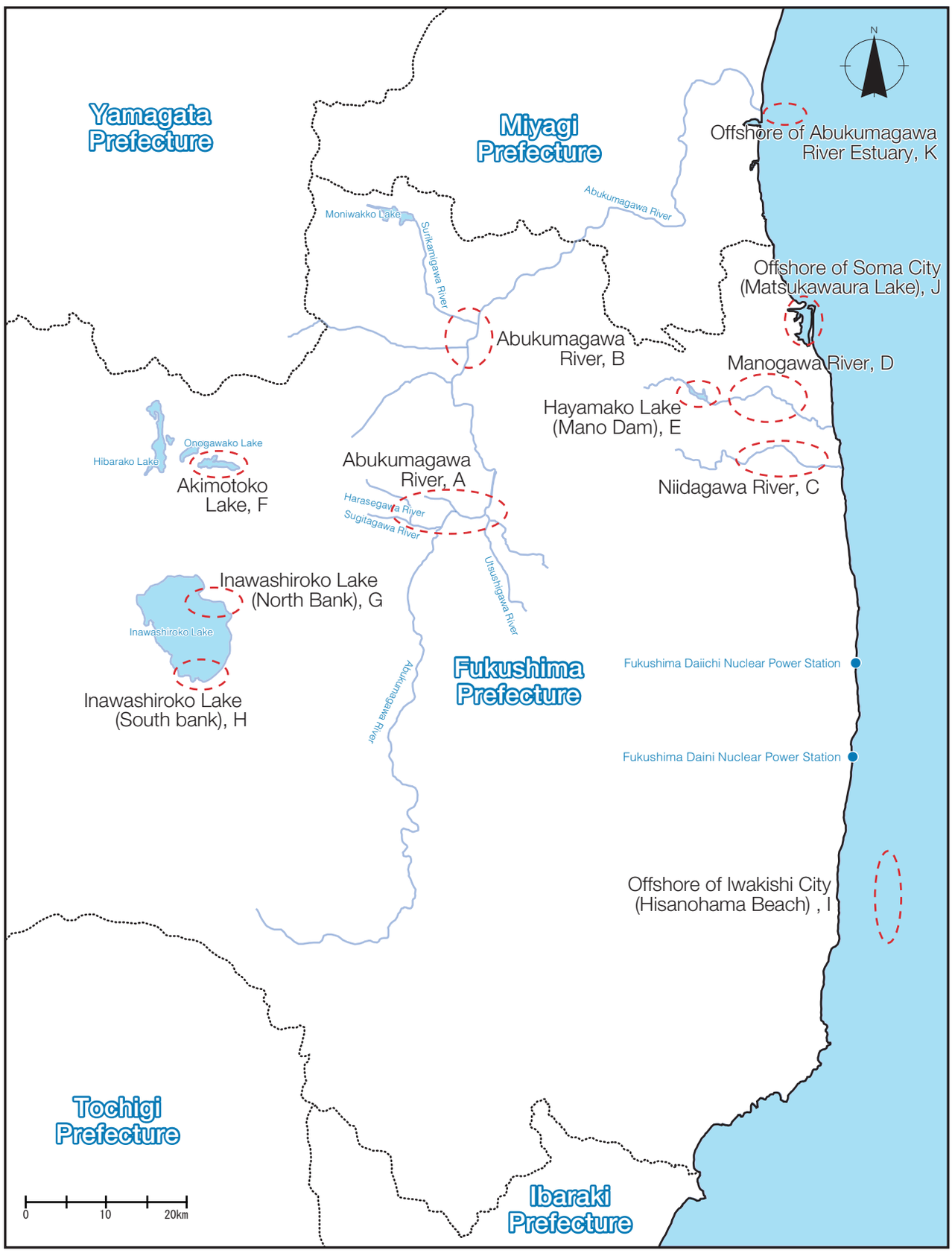
		Plants (algae)	Sea urchin, starfish, sea cucumber	Crustacean	Ragworms	Shellfish		Squid, Octopus	Fishes
						Without shell	Shell		
Iwakishi City Offshore I (Hisanohama Beach Offshore)	**Summer 2012**	**25**	**26, 50 (2 species)**	**-**	**-**	**6.1**	**49**	**7.4**	**14-126 (10 species)**
	Spring 2012	22, 33 (2 species)	21, 97 (2 species)	–	–	13	24	–	7.6-290 (8 species)
Somashi City Offshore J (Matsukawaura Lake)	**Summer 2012**	**2.9, 3.0 (2 species)**	**–**	**3.0-300 (4 species)**	**107**	**5.3, 8.9 (2 species)**	**4.7, 29 (2 species)**	**–**	**5.9-36 (7 species)**
	Spring 2012	13-102 (3 species)	–	12-87 (4 species)	–	4.1, 5.7 (2 species)	9, 56 (2 species)	–	11-166 (5 species)
Offshore of Abukumagawa River Estuary K	**Summer 2012**	**–**	**–**	**0.95**	**–**	**–**	**–**	**–**	**ND-19 (7 species)**
	Spring 2012	–	–	8.4, 21 (2 species)	-	–	–		11-42 (5 species)

*As for monitored specimen, including fish, the entire organism is used.

3. Future Plans

MOE will continue to measure the concentration of radioactive materials in aquatic organisms (organisms collection conducted 3-4 times each year).

Radioactive Material Monitoring Survey Locations of Aquatic Organisms



Results of Aquatic Organisms Radionuclides Survey (Rivers 1)

Stn No.		Aquatic organism and others		Weight (kg-wet)	Sample number	Radioactive cesium (Bq/kg-wet)			Sr-90 (Bq/kg-wet)	Remarks **
						Total	Cs-134	Cs-137		
Abukumagawa River	A	CPOM (leaves, etc.)		1.2	-	1,330	520	810	-	Tributary (Harasegawa River)
		Alga	Spirogyra sp.	0.03	-	94	38	56	-	Tributary (Harasegawa River)
		Aquatic insect	Calopteryx cornelia	0.073	157	199	79	120	-	Juvenile Tributary (Harasegawa River)
			Club-tailed dragonfly							
			Clubtail dragonfly (Sieboldius albardae							
			Sinogomphus flavolimbatus							
			Golden-ringed dragonfly							
			Macromia amphigena amphigena							
			Stenopsyche marmorata							
			Appasus sp.							Adult Tributary (Harasegawa River)
		Crustacean	Japanese ｆreshwater crab	0.011	6	107	44	63	-	Adult Tributary (Harasegawa River)
			Atyidae	0.12	511	156	62	94	-	
		Shellfish	Japanese freshwater snail	0.049	41	39	15	24	-	Adult Tributary (Harasegawa River)
		Fish	Amur minnow	0.081	36	51	19	32	-	Adult Tributary (Harasegawa River)
			Oriental weather loach	0.054	36	70	27	43	-	
			Stone loach	0.085	8	34	14	20	-	
		Amphibian	Japanese tree frog	0.11	18	104	41	63	-	Adult Tributary (Harasegawa River)
			Wrinkled frog							
			Tokyo daruma pond frog							
	B	CPOM (leaves, etc.)		0.60	-	270	100	170	-	Tributary (Surikamigawa River)
		Alga	Spirogyra sp.	0.16	-	360	140	220	-	Tributary (Surikamigawa River)
		Aquatic insect	Club-tailed dragonfly	0.059	146	139	52	87	-	Juvenile Tributary (Surikamigawa River)
			Clubtail dragonfly (Sieboldius albardae							
			Golden-ringed dragonfly							
			Macromia amphigena amphigena							
			Parachauliodes japonicus							
			Dobsonfly							
			Stenopsyche marmorata							
			Appasus sp.							Adult Tributary (Surikamigawa River)
		Fish	Dark chub	0.066	5	79	32	47	-	Adult Tributary (Surikamigawa River)
			Cut-tailed bullhead	0.17	6	66	25	41	-	
			Oriental weather loach	0.075	16	80	32	48	-	
			Stone loach	0.30	16	56	21	35	-	
			channel catfish	2.8	3	151	57	94	-	Adult
			Japanese eel	0.89	2	223	83	140	-	
			Amur catfish	2.0	3	600	230	370	-	
			Smallmouth bass	3.2	10	540	210	330	0.34	
			Common carp	4.6	2	135	55	80	-	
			Barbel steed	4.7	5	270	110	160	-	
			Carassius sp.	1.4	2	240	90	150	-	
			Tribolodon sp.	0.72	2	242	92	150	-	
			Ayu (run-up)	2.1	60	85	34	51	0.21	
		Amphibian	Wrinkled frog	0.036	3	87	34	53	-	Adult Tributary (Surikamigawa River)
			Frog and toad (tadpole)	0.026	34	750	300	450	-	Juvenile Tributary (Surikamigawa River)

*Aquatic organisms were sampled in multiple numbers in principle, and all of them (entirely) were used for analysis.
*Stomach contents shown in Remarks were removed before analysis, and all remaining parts of all samples were used for analysis.

Results of Aquatic Organisms Radionuclides Survey (Rivers 2)

Stn No.		Aquatic organism and others		Weight (kg-wet)	Sample number	Radioactive cesium (Bq/kg-wet)			Sr-90 (Bq/kg-wet)	Remarks **
						Total	Cs-134	Cs-137		
Nidagawa River	C	Fish	Barbel steed	1.1	1	1,620	630	990	-	Adult
				0.070	21	199	79	120	-	Young fish
			Tribolodon sp.	0.18	3	870	340	530	-	Adult
			Pale chub	0.22	25	580	220	360	-	
			Goby minnow	0.18	13	390	150	240	-	
			Rhinogobius sp.	0.10	34	1,320	510	810	-	
			Ayu (run-up)	0.35	8	1,030	400	630	-	
				0.49	8	600	240	360	-	
Manogawa River	D	CPOM (leaves, etc.)		0.50	-	420	160	260	-	-
		Waterweed	Potamogeton oxyphyllus	0.44	-	102	40	62	-	-
		Bryophyte	Bryophyte	0.086	-	570	230	340	-	-
		Alga	Spirogyra sp.	0.37	-	23	9.0	14	-	-
		Aquatic insect	Isonychia japonica	0.060	223	460	180	280	-	Juvenile
			Clubtail dragonfly (Sieboldius albardae							
			Stylogomphus suzukii							
			Gomphidae							
			Macromia amphigena amphigena							
			Kamimurai sp.							
			Appasus sp.							
			Parachauliodes japonicus							
			Dobsonfly							
			Stenopsyche marmorata							
		Crustacean	Red (swamp) crayfish	0.30	10	660	250	410	-	Adult
			Atyidae	0.10	419	147	59	88	-	
			Japanese mitten crab	0.10	4	360	150	210	-	
		Shellfish	Japanese freshwater snail	0.040	44	480	190	290	-	Adult
		Fish	Rhinogobius sp.	0.20	98	760	300	460	-	Adult
			Cherry salmon	0.10	7	235	95	140	-	Young fish
			Tribolodon sp.	0.40	60	229	89	140	-	Adult
			Pale chub	0.047	11	116	48	68	-	
			Gobiidae	0.20	93	111	44	67	-	
			Ayu (released)	0.20	2	135	51	84	-	
			Ayu (run-up)	0.60	24	290	120	170	-	

*Aquatic organisms were sampled in multiple numbers in principle, and all of them (entirely) were used for analysis.
*Stomach contents shown in Remarks were removed before analysis, and all remaining parts of all samples were used for analysis.

Results of Aquatic Organisms Radionuclides Survey (Lakes 1)

Stn No.		Aquatic organism and others		Weight (kg-wet)	Sample number	Radioactive cesium (Bq/kg-wet)			Sr-90 (Bq/kg-wet)	Remarks **
						Total	Cs-134	Cs-137		
Hayamako Lake (Mano Dam)	E	CPOM (leaves, etc.)		0.51	-	740	290	450	-	-
		Alga	Spirogyra sp.	0.55	-	132	52	80	-	-
		Aquatic insect	Isonychia japonica	0.045	192	450	180	270	-	Juvenile
			Calopteryx cornelia							
			Club-tailed dragonfly							
			Clubtail dragonfly (Sieboldius albardae							
			Gomphidae							
			Macromia amphigena amphigena							
			Parachauliodes japonicus							
			Dobsonfly							
			Stenopsyche marmorata							
			Stenopsyche sauteri							
		Fish	Cherry salmon	0.030	4	232	92	140	-	Young fish
			Lizard goby	0.10	261	260	100	160	-	Adult
			Amur catfish	2.4	2	1,980	780	1,200	0.49	
			Largemouth bass	1.3	2	1,490	590	900	-	
			Smallmouth bass	3.0	5	4,300	1,700	2,600	2.1	
			Char	0.30	1	1,590	620	970	-	
			Common carp	0.40	1	380	150	230	-	
			Gin-buna	2.2	2	840	330	510	-	
			Japanese dace	0.60	Large number	540	210	330	-	
Akimotoko Lake	F	CPOM (leaves, etc.)		0.80	-	156	60	96	-	-
		Waterweed	Vallisneria denseserrulata	0.40	-	14	5.1	8.5	-	-
			Nuttall's waterweed	0.70	-	7.1	2.6	4.5	-	-
		Alga	Spirogyra sp.	0.29	-	44	17	27	-	-
		Crustacean	Signal crayfish	5.4	131	156	63	93	10	Adult
		Fish	Largemouth bass	1.0	4	187	77	110	-	Adult
			Smallmouth bass	7.7	15	310	120	190	1.2	
			Char	0.80	3	204	84	120	-	
			Bluegill	0.90	6	229	89	140	-	
			Common carp	3.7	1	85	35	50	-	
			Barbel steed	4.2	3	63	24	39	-	
			Gin-buna	8.6	24	128	51	77	1.6	
			Japanese dace	1.5	9	300	120	180	-	
			Pale chub	0.70	53	93	38	55	-	
			Amur minnow	0.090	23	72	29	43	-	
			Oriental weather loach	0.050	2	184	74	110	-	
			Japanese smelt	0.30	46	85	32	53	-	
		Amphibian	Japanese Fire Belly Newt	0.030	6	90	36	54	-	Adult
			Montane brown frog	0.050	4	71	28	43	-	
			Wrinkled frog							
			Kajika frog (Tadpole)	0.12	293	136	55	81	-	Juvenile

*Aquatic organisms were sampled in multiple numbers in principle, and all of them (entirely) were used for analysis.
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Results of Aquatic Organisms Radionuclides Survey (Sea Areas)

Stn No.		Aquatic organism and others		Weight (kg-wet)	Sample number	Radioactive cesium(Bq/kg-wet)			Sr-90 (Bq/kg-wet)	Remarks
						Total	Cs-134	Cs-137		
Hisanohama Beach (Iwaki City Offshore)	I	Seaweed	Sea oak	1.5	-	25	9.9	15	-	-
		Sea urchin	Sea urchin	1.0	30	50	20	30	-	Adult
			Northern sea urchin	3.1	27	26	9.7	16	-	
		Shellfish	Abalone (shell)	2.7	16	49	20	29	-	Adult
			Abalone (Without shell)	0.60		6.1	2.4	3.7	-	
		Squid	Sepia sp.	0.30	23	7.4	2.6	4.8	-	Adult
		Fish	Striped jewfish	0.40	1	15	5.5	9.0	-	Adult
			Dory	0.40	4	14	5.2	8.5	-	
			Bastard halibut	4.2	4	26	9.9	16	0.17	
			Marbled sole	3.1	7	52	20	32	0.25	
			Roundnose flounder	0.90	4	25	10	15	-	
			Frog flounder	0.30	4	25	10	15	-	
			Redwing searobin	1.0	10	29	12	17	-	
			Finepatterned puffer	0.90	7	47	19	28	-	
			Starspotted smooth-hound	3.0	2	39	16	23	-	
			Ocellate spot skate	1.5	4	126	50	76	-	
Matsukawaura Lake (Soma City Offshore)	J	Seaweed	Eelgrass	1.7	-	2.9	1.1	1.8	-	-
		Seaweed	Ulva pertusa Kjellman	0.46	-	3.0	1.1	1.9	-	-
		Crustacean	Swimming crab	0.17	3	3.0	1.2	1.8	-	Adult
			Grapsid crab	0.18	215	300	120	180	-	
			Alpheus sp.	0.11	66	9.0	3.6	5.4	-	
			Mysidae	0.17	arge numbe	18	7.4	11	-	
		Shellfish	Pacific oyster (shell)	4.3	arge numbe	29	11	18	0.74	Adult
			Pacific oyster (without shell)	0.73		8.9	3.5	5.4	-	
			Manila clam (shell)	1.8	arge numbe	4.7	1.9	2.8	3.1	
			Manila clam (without shell)	0.69		5.3	2.1	3.2	-	
		Polychaete	Polychaeta	0.52	786	107	41	66	-	Adult
		Fish	Pleuronectidae	0.18	30	5.9	2.3	3.6	-	Young fish
			Flathead mullet	0.41	14	36	15	21	-	
			Dotted gizzard shad	0.37	82	22	8.9	13	-	
			Gobiidae	0.10	32	8.5	3.2	5.3	-	Adult
			Atherinidae	0.15	10	6.2	2.4	3.8	-	
			Grass puffer	0.27	8	15	5.9	9.2	-	Young fish
			Tribolodon sp.	0.56	10	7.7	2.9	4.8	-	
Abukumagawa River Estuary Offshore	K	Crustacean	Swimming crab	1.8	5	0.95	ND(<0.77)	0.95	-	Adult
		Fish	Japanese amberjack	2.1	2	12	4.4	7.2	0.020	Adult
			Blue mackerel	1.0	2	ND	ND(<1.0)	ND(<0.82)	-	
			Japanese jack mackerel	1.3	3	14	5.6	8.7	-	
			Sebastes sp.	0.9	4	19	7.1	12	-	
			Bastard halibut	3.0	2	16	6.1	9.6	0.055	
			Frog flounder	1.0	3	9	3.3	5.6	-	
			Panther puffer	0.9	3	6	2.1	3.9	-	

*Aquatic organisms were sampled in multiple numbers in principle, and all of them (entirely) were used for analysis.
*Stomach contents shown in Remarks were removed before analysis, and all remaining parts of all samples were used for analysis.

Results of Aquatic Organisms Radionuclides Survey (Lakes 2)

Stn No.		Aquatic organism and others		Weight (kg-wet)	Sample number	Radioactive cesium (Bq/kg-wet) Total	Cs-134	Cs-137	Sr-90 (Bq/kg-wet)	Remarks **
Inawashiroko Lake	G (North shore)	CPOM (leaves, etc.)		0.77	-	172	62	110	-	-
		Algae	Spirogyra sp.	0.27	-	42	16	26	-	-
		Fish	Amur catfish	0.8	1	107	44	63	-	Adult
			Char	1.8	6	250	100	150	-	
			Cherry salmon	0.30	1	330	130	200	-	
			Barbel steed	2.5	3	125	50	75	-	
			Gin-buna	1.3	2	45	18	27	-	
			Japanese dace	6.0	Large number	159	64	95	0.29	
			Cobitidae	1.7	Large number	9.1	3.4	5.7	-	
	H (South shore)	Waterweed	Japanese spatterdock	1.0	-	7.8	3.2	4.6	-	-
			Frogbit	0.50	-	4.8	1.9	2.9	-	-
			Nuttall's waterweed	0.30	-	12	4.8	7.6	-	-
		Shellfish	Japanese mystery snail	0.060	9	62	25	37	-	Adult
		Fish	Amur catfish	1.3	2	138	52	86	-	Adult
			Smallmouth bass	2.1	4	178	68	110	0.43	
			Cherry salmon	0.50	36	11	4.3	6.3	-	Young fish
			Barbel steed	2.5	15	77	29	48	0.40	Adult
			Gin-buna	1.5	10	51	20	31	-	
			Japanese dace	0.60	17	100	38	62	-	
			Goby minnow	0.10	5	11	9.3	1.5	-	
			Pale chub	0.40	11	53	22	31	-	
			Floating goby	0.10	21	38	15	23	-	
		Amphibian	Tokyo daruma pond frog	0.11	10	68	27	41	-	Adult

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