

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

<Simultaneously released to the Fukushima Prefecture Press Club>

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 Water Environment Division,
 Environment Management Bureau,
 Ministry of the Environment
 Direct line: 03-5521-8316
 Switchboard: 03-3581-3351
 Director: Masanobu Miyazaki (ext. 6610)
 Deputy Director: Saori Nagasawa (ext. 6614)
 Coordinator: Katsuhiko Sato (ext. 6628)

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 (fall survey: sampling period: September 12-November 25, 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 Shinfunahashi Bridge, Harasegawa River (Tributary)	October 29-30, 2012
	B		Surikamigawa River (Tributary)	October 28, November 1, 2012
	C	Udagawa River		November 6, 7, 2012
	D	Manogawa River		October 24, November 5, 2012
	E	Niidagawa River		October 26, 31, 2012
	F	Otagawa River		September 12, November 8, 25, 2012
Lakes	G	Hayamako lake (Mano Dam)		October 23, 2012
	H	Akimotoko Lake		October 22, November 16, 2012
	I	Inawashiroko Lake	North Shore	October 24, November 15, 2012
	J		South Shore	October 22, November 16, 2012
Sea Areas	K	Offshore of Abukumagawa River Estuary		October 31, 2012
	L	Somashi City Offshore (Matsukawaura Lake)		October 30, 2012
	M	Iwakishi City Offshore (Hisanohama Beach Offshore)		November 5, 22, 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 summer 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 2012 summer survey. Furthermore, just as in previous surveys, the concentration of radioactive cesium in rivers and lakes is higher than in sea areas.

			Plants (algae)	Aquatic insects	Crustacean	Shellfish	Fishes	Amphibians	CPOM (dry leaves, etc.)
Abukumagawa River System	Abukumagawa River A	Fall 2012	9.3	54 (1 species)	30	24	33-172 (7 species)	52, 720 (2 species)	350
		Summer 2012	94	199 (8 species mixed)	107, 156	39	34-70 (3 species)	104 (3 species mixed)	1,330
	Abukumagawa River B	Fall 2012	68	14-208 (4 species)	54	63	35, 103 (5 species)	470	237
		Summer 2012	360	139 (8 species mixed)	-	-	56-600 (13 species)	87, 750 (2 species)	270
Udagawa River C		Fall 2012	300	17-680 (4 species)	74, 74 (2 species)	-	83-430 (4 species)	-	101
		Summer 2012	-	-	-	-	-	-	-
Manogawa River System	Hayamako Lake G (Mano Dam)	Fall 2012	420	92, 1,100 (2 species)	-	-	193-5,400 (8 species)	-	320
		Summer 2012	132	450 (10 species mixed)	-	-	232-4,300 (9 species)	-	740
	Manogawa River D	Fall 2012	540	113-510 (3 species)	224	440	1.1-800 (4 species)	1,110	510
		Summer 2012	23-570 (3 species)	460 (10 species mixed)	147-660 (3species)	480	111-760 (7 species)	-	420
Niidagawa River E		Fall 2012	-	165-1,770 (4 species)	410	230	320-1,220 (8 species)	1,620	890
		Summer 2012	-	-	-	-	199-1,620 (6 species)	-	-
Otagawa River F		Fall 2012	182	530, 820 (2 species)	1,320	-	450-2,440 (7 species)	-	1,740
		Summer 2012	-	-	-	-	-	-	-
Akimoto Lake H		Fall 2012	16, 50 (2 species)	-	144	-	54-380 (6 species)	-	48
		Summer 2012	7.1-44 (3species)	-	156	-	63-310 (12 species)	71-136 (4 species)	156
Inawashiroko Lake	Inawashiroko Lake I (North Shore)	Fall 2012	135	-	-	-	31-201 (6 species)	-	390
		Summer 2012	42	-	-	-	9.1-330 (7species)	-	172
	Inawashiroko Lake J (South Shore)	Fall 2012	3.0, 13 (2 species)	-	-	9.0	39-181 (6 species)	43	-
		Summer 2012	4.8-12 (3 species)	-	-	62	11-178 (9 species)	68	-

Unit: Bq/kg-wet

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

Starting with the 2012 fall survey, the following 4 species (categorized by feeding habit and type) of aquatic insects have been sampled and analyzed.

- Odonata (Dragonfly larva, carnivore)
- Corydalidae (carnivore)
- Perlidae (carnivore)
- Stenopsyche (omnivorous, detritivorous)

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

There are variations between each body of water and the type of organism collected, but in general, the levels of radioactive cesium concentration are about the same as those of the summer 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

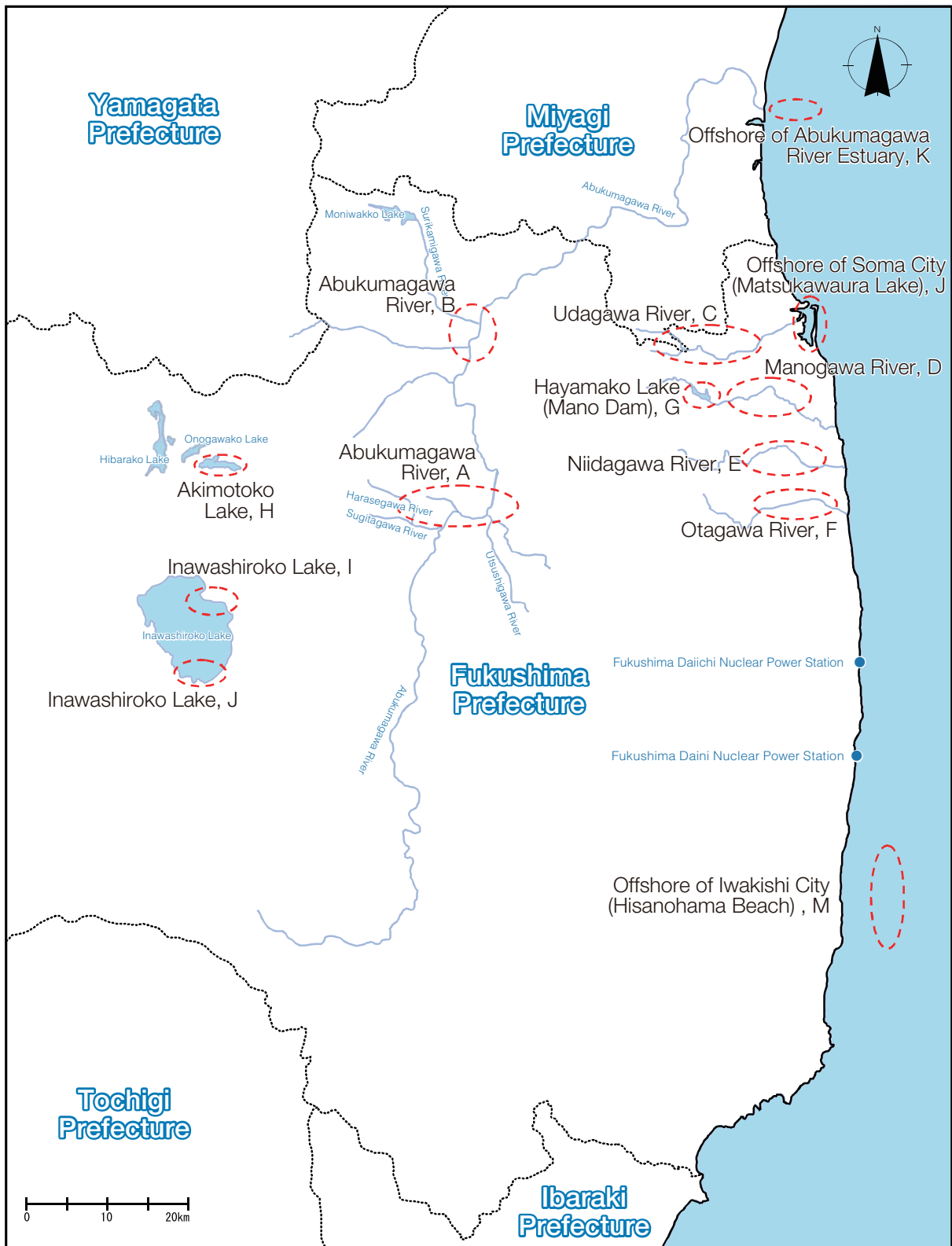
		Plants (algae)	Sea urchin, starfish, sea cucumber	Crustacean	Ragworms	Shellfish		Squid, Octopus	Fishes
						Without shell	Shell		
Offshore of Abukumagawa River Estuary K	Fall 2012	-	-	ND	-	-	-	-	0.9-32 (7 species)
	Summer 2012	-	-	0.95	-	-	-	-	ND-19 (7specie)
Somashi City Offshore L (Matsukawaura Lake)	Fall 2012	ND, 4.1 (2 species)	—	13	6.4	ND, 13 (2 species)	1.9, 60 (2 species)	-	7.5, 23 (2 species)
	Summer 2012	2.9, 3.0 (2 species)	—	3.0-300 (4 specie)	107	5.3, 8.9 (2specie)	4.7, 29 (2specie)	-	5.9-36 (7 species)
Iwakishi City Offshore M (Hisanohama Beach Offshore)	Fall 2012	8.7	12, 42 (2 species)	-	-	5.1	16	-	6.7-118 (6 species)
	Summer 2012	25	26 50 (2 species)	-	-	6.1	49	7.4	14-126 (10 species)

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

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		Sample weight (kg-wet)	Sample number	Radioactive cesium (Bq/kg-wet)			Sr-90 (Bq/kg-wet)	Remarks **
					Total	Cs-134	Cs-137		
A b u k u m a g a w a R i v e r A	Alga	Spirogyra sp.	0.090	-	9.3	3.3	6.0	-	-
	Aquatic insect (Odonata)	Calopteryx sp.	0.14	203	54	21	33	-	Juvenile
		Asiagomphus melaenops							
		Davidius nanus							
		Davidius sp.							
		Club-tailed dragonfly							
		Clubtail dragonfly (Sieboldius albardae)							
		Golden-ringed dragonfly							
		Macromia amphigena amphigena							
	Crustacean	Atyidae	0.19	291	30	12	18	-	Adult
	Shellfish	Japanese freshwater snail	0.050	58	24	9	15	-	Adult
	Fish	Cherry salmon	0.43	16	172	62	110	-	Adult
		Japanese dace	0.21	14	68	25	43	-	Adult/young
		Amur minnow	0.27	95	57	21	36	-	Adult
		Dark chub	0.40	26	100	36	64	-	Adult
		Stone loach	0.46	34	65	25	40	-	Adult
		Barbel steed	0.72	63	35	13	22	-	Young fish
		Carassius sp.	1.37	2	33	13	20	0.34	Adult
	Amphibian	Japanese Fire Belly Newt	0.090	14	52	19	33	-	Adult
Frogs and toad (tadpole)		0.010	21	720	270	450	-	Juvenile	
CPOM (dried leaves, etc.)		0.98	-	350	130	220	-	-	
A b u k u m a g a w a R i v e r B	Alga	Oedogonium	0.030	-	68	27	41	-	-
	Aquatic insect (Odonata)	Calopteryx atrata	0.054	147	24	8.1	16	-	Juvenile
		Calopteryx sp.							
		Planaeschna milnei							
		Anisogomphus maacki							
		Davidius nanus							
		Davidius sp.							
		Club-tailed dragonfly							
		Clubtail dragonfly (Sieboldius albardae)							
		Stylogomphus suzukii							
		Macromia amphigena amphigena							
		Aquatic insect (Corydalidae)							
	Parachauliodes continentalis								
	Aquatic insect (Perlidae)	Acroneuria sp.	0.017	360	14	5.8	8.5	-	Juvenile
		Calineuria							
		Kamimuria quadrata							
		Kamimuria tibialis							
		Kamimuria uenoi							
		Neoperla sp.							
		Oyamia sp.							
Paragnetina suzukii									
Paragnetina tinctipennis									
Paragnetina sp.									
Aquatic insect (Stenopsycha sp.)	Stenopsycha marmorata	0.19	1,528	208	78	130	-	Juvenile	
	Stenopsycha sauteri								
	Stenopsycha sp.								
Crustacean	Red (swamp) crayfish	0.18	35	54	19	35	-	Adult	
Shellfish	Japanese freshwater snail	0.20	434	63	22	41	-	Adult	
Fish	Cherry salmon	0.090	3	103	38	65	-	Adult	
	Japanese dace	0.020	6	61	24	37	-	Young fish	
	Amur minnow	0.080	18	45	17	28	-	Adult/young	
	Oriental weather loach	0.040	8	66	24	42	-	Adult	
	Japanese sculpin	0.050	2	35	13	22	-	Adult	
Amphibian	Frog and toad (tadpole)	0.020	38	470	180	290	-	Juvenile	
CPOM (dried leaves, etc.)		0.80	-	237	87	150	-	-	

Results of Aquatic Organisms Radionuclides Survey (Rivers 2)

Stn No.	Aquatic organism and others		Sample weight (kg-wet)	Sample number	Radioactive cesium (Bq/kg-wet)			Sr-90 (Bq/kg-wet)	Remarks **
					Total	Cs-134	Cs-137		
U d a g a w a R i v e r C	Alga	Spirogyra sp.	0.021	-	300	110	190	-	-
	Aquatic insect (Odonata)	Calopteryx atrata	0.016	129	93	37	56	-	Juvenile
		Calopteryx cornelia							
		Mnais costalis							
		Epiophlebia superstes							
		Davidius fujiana							
		Davidius nanus							
		Davidius sp.							
		Club-tailed dragonfly							
		Clubtail dragonfly (Sieboldius albardae)							
		Sinogomphus flavolimbatus							
		Macromia amphigena amphigena							
	Aquatic insect (Corydalidae)	Dobsonfly	0.055	413	43	15	28	-	Juvenile
		Parachauliodes continentalis							
	Aquatic insect (Perlidae)	Kamimuria tibialis	0.016	196	17	7.4	10	-	Juvenile
		Kamimuria uenoi							
		Neoperla sp.							
		Niponiella limbatella							
		Oyamia gibba							
		Paragnetina suzukii							
Paragnetina tinctipennis									
Aquatic insect (Stenopsycha sp.)	Stenopsycha marmorata	0.025	291	680	250	430	-	Juvenile	
	Stenopsycha sauteri								
Crustacean	Japanese mitten crab	0.13	3	74	28	46	-	Adult	
	Atyidae	0.056	407	74	28	46	-	Adult	
Fish	Cherry salmon	0.16	8	101	38	63	-	Young fish	
	Tribolodon sp.	0.11	3	430	150	280	-	Adult	
	Rhinogobius sp.LD	0.060	7	400	150	250	-	Adult	
	Dark chub	0.16	8	83	31	52	-	Adult	
CPOM (dried leaves, etc.)		0.81	-	101	36	65	-	-	
M a n o g a w a R i v e r D	Alga	Spirogyra sp.	0.052	-	540	200	340	-	-
	Aquatic insect (Odonata)	Calopteryx atrata	0.021	87	113	44	69	-	Juvenile
		Calopteryx cornelia							
		Calopteryx sp.							
		Mnais costalis							
		Anax parthenope							
		Davidius nanus							
		Davidius sp.							
		Club-tailed dragonfly							
		Clubtail dragonfly (Sieboldius albardae)							
		Sinogomphus flavolimbatus							
		Stylogomphus suzukii							
	Macromia amphigena amphigena								
	Aquatic insect (Corydalidae)	Dobsonfly	0.039	129	127	47	80	-	Juvenile
		Parachauliodes continentalis							
	Aquatic insect (Stenopsycha sp.)	Stenopsycha marmorata	0.074	503	510	190	320	-	Juvenile
		Stenopsycha sauteri							
	Crustacean	Atyidae	0.022	139	224	84	140	-	Adult
	Shellfish	Japanese freshwater snail	0.070	61	440	160	280	-	Adult
	Fish	Chum salmon	3.6	2	1.1	N.D.(<0.88)	1.1	0.028	Adult
Cherry salmon		0.21	1	800	300	500	-	Adult	
Rhinogobius sp.		0.11	49	740	280	460	-	Adult	
Ayu (run-up)		2.1	57	330	120	210	0.83	Adult	
Amphibian	Frogs and toad (tadpole)	0.010	20	1,110	430	680	-	Juvenile	
CPOM (dried leaves, etc.)		1.2	-	510	190	320	-	-	

*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 3)

Stn No.	Aquatic organism and others		Sample weight (kg-wet)	Sample number	Radioactive cesium (Bq/kg-wet)			Sr-90 (Bq/kg-wet)	Remarks **
					Total	Cs-134	Cs-137		
N i d a g a w a R i v e r E	Aquatic insect (Odonata)	Calopteryx atrata	0.049	158	360	130	230	-	Juvenile
		Calopteryx sp.							
		Mnais costalis							
		Anax parthenope							
		Planaeschna milnei							
		Asiagomphus melaenops							
		Davidius nanus							
		Davidius sp.							
		Club-tailed dragonfly							
		Clubtail dragonfly (Sieboldius albardae)							
		Sinogomphus flavolimbatus							
		Stylogomphus suzukii							
	Aquatic insect (Corydalidae)	Dobsonfly	0.017	21	185	75	110	-	Juvenile
		Parachauliodes continentalis							
	Aquatic insect (Perlidae)	Kamimuria tibialis	0.025	464	165	66	99	-	Juvenile
		Kamimuria uenoi							
		Neoperla sp.							
		Oyamia sp.							
	Aquatic insect (Stenopsycha sp.)	Stenopsycha marmorata	0.043	223	1,770	670	1,100	-	Juvenile
Stenopsycha sauteri									
Crustacean	Japanese mitten crab	0.20	14	410	150	260	-	Adult	
Shellfish	Japanese freshwater snail	0.060	17	230	90	140	-	Adult	
Fish	Japanese eel	1.4	5	1,100	410	690	0.24	Adult	
	Amur catfish	1.1	3	600	230	370	1.2	Adult	
	Cherry salmon	0.10	5	330	120	210	-	Adult	
	Common carp	0.62	2	320	120	200	-	Adult	
	Tribolodon sp.	0.19	31	510	190	320	-	Adult/young	
	Goby minnow	0.050	16	420	150	270	-	Adult/young	
	Pale chub	0.40	69	610	230	380	-	Adult	
	Rhinogobius sp.	0.10	29	1,220	450	770	-	Adult	
Amphibian	Frogs and toad (tadpole)	0.090	15	1,620	630	990	-	Juvenile	
	CPOM (dried leaves, etc.)	0.84	-	890	340	550	-	-	
O t a g a w a R i v e r F	Alga	Spirogyra sp.	0.035	-	182	72	110	-	-
	Aquatic insect (Odonata)	Calopteryx atrata	0.030	148	820	320	500	-	Juvenile
		Boyeria maclachlani							
		Anisogomphus maacki							
		Davidius nanus							
		Davidius sp.							
		Nihonogomphus viridis Oguma							
		Club-tailed dragonfly							
		Clubtail dragonfly (Sieboldius albardae)							
		Stylogomphus suzukii							
		Macromia amphigena amphigena							
		Aquatic insect (Corydalidae)							
	Parachauliodes continentalis								
	Crustacean	Atyidae	0.60	372	1,320	490	830	-	Adult
	Fish	Cherry salmon	0.01	1	1,810	710	1,100	-	Young fish
		Tribolodon sp.	0.12	7	1,060	410	650	-	Young fish
		Ayu (run-up)	1.6	128	2,440	940	1,500	-	Adult/young
Japanese eel		1.4	4	1,560	580	980	0.35	Adult	
Common carp		3.5	2	2,040	740	1,300	3.9	Adult	
Tribolodon sp.		1.0	13	450	160	290	-	Adult	
Ayu (run-up)		0.73	22	860	310	550	-	Adult	
	CPOM (dried leaves, etc.)	0.41	-	1,740	640	1,100	-	-	

*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)

Stn No.	Aquatic organism and others		Sample weight (kg-wet)	Sample number	Radioactive cesium (Bq/kg-wet)			Sr-90 (Bq/kg-wet)	Remarks **
					Total	Cs-134	Cs-137		
H a y a m a k o L a k e (M a n o D a m) G	Alga	Spirogyra sp.	0.18	-	420	160	260	-	-
	Aquatic insect (Corydalidae)	Dobsonfly	0.022	77	92	33	59	-	Juvenile
	Aquatic insect (Stenopsyche sp.)	Stenopsyche marmorata	0.036	252	1,100	410	690	-	-
		Stenopsyche sauteri							
	Fish	Rhinogobius sp.	0.020	17	270	100	170	-	Young fish/Adult
		Amur catfish	1.4	1	2,090	790	1,300	-	Adult
		Smallmouth bass	1.2	2	1,750	650	1,100	-	Adult
		Char	2.5	1	5,400	2,000	3,400	0.90	Adult
		Masu salmon	1.3	3	790	300	490	-	Adult
		Rainbow trout	3.0	1	3,000	1,100	1,900	0.40	Adult
Common carp		1.2	1	193	73	120	-	Adult	
Gin-buna		2.3	2	810	300	510	1.2	Adult	
CPOM (dried leaves, etc.)		0.96	-	320	120	200	-	-	
A k i m o t o k o L a k e H	Alga	Nuttall's waterweed	0.34	-	16	5.9	9.7	-	-
		Spirogyra sp.	0.18	-	50	17	33	-	-
	Crustacean	Signal crayfish	3.52	52	144	53	91	12	Adult
	Fish	Smallmouth bass	2.7	15	380	140	240	1.6	Adult
		Common carp	3.1	2	54	21	33	1.1	Adult
		Barbel steed	0.36	1	159	59	100	-	Adult
		Gin-buna	1.7	2	120	45	75	-	Adult
		Japanese dace	0.60	4	206	76	130	-	Adult
	Japanese smelt	0.34	68	71	25	46	-	Adult	
CPOM (dried leaves, etc.)		2.08	-	48	18	30	-	-	
(N a o r a t s h i s r h o k o r e) L a k e I	Alga	Spirogyra sp.	0.02	-	135	55	80	-	-
	Fish	Amur catfish	0.71	1	72	26	46	-	Adult
		Char	4.5	6	201	71	130	0.17	Adult
		Barbel steed	0.83	15	62	24	38	-	Adult
		Gin-buna	3.2	5	47	16	31	0.68	Adult
		Japanese dace	0.98	10	77	29	48	-	Adult
		Cobitidae	0.13	17	31	12	19	-	Adult
	CPOM (dried leaves, etc.)		0.79	-	390	150	240	-	-
L a k e (S o u t s h i s h o k o r e) J	Alga	Japanese spatterdock	2.0	-	3	1.1	1.8	-	-
		Nuttall's waterweed	0.25	-	13	4.9	8.5	-	-
	Shellfish	Japanese mystery snail	0.17	12	9.0	3.6	5.4	-	Adult
	Fish	Smallmouth bass	0.75	2	109	37	72	-	Adult
		Char	1.3	2	181	71	110	-	Adult
		Masu salmon	0.55	1	118	42	76	-	Adult
		Barbel steed	1.4	8	97	37	60	-	Adult
		Gin-buna	0.94	2	39	14	25	-	Adult
		Japanese dace	1.3	6	113	42	71	-	Adult
Amphibian	Frogs and toad (tadpole)	0.040	35	43	17	26	-	Juvenile	

*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 (Sea areas)

Stn No.	Aquatic organism and others		Sample weight (kg-wet)	Sample number	Radioactive cesium (Bq/kg-wet)			Sr-90 (Bq/kg-wet)	Remarks **
					Total	Cs-134	Cs-137		
R i v A O e b f r u f k s E u h s m o t a r u g e a a r w o y a f K	Crustacean	Swimming crab	1.8	5	N.D.	N.D.(<0.87)	N.D.(<0.62)	-	Adult
	Fish	Japanese amberjack	2.8	2	0.9	N.D.(<0.86)	0.91	-	Adult
		Japanese sea bass	3.8	3	21	8.1	13.0	0.093	Adult
		Black porgy	2.3	4	6.9	2.7	4.2	0.081	Adult
		Sea raven	4.0	6	6.5	2.5	4.0	N.D.(<0.02)	Adult
		Bastard halibut	2.3	4	18	7.4	11	0.024	Adult
		Starry flounder	1.6	5	32	12	20	-	Adult
		Panther puffer	1.0	2	5.7	2.4	3.3	-	Adult
(S M o a m t a s s u h k i a w C a i u t r y a O L f a f k s e h o r L e	Algae	Eelgrass	0.23	-	4.1	1.5	2.6	-	-
		Ulva pertusa Kjellman	0.49	-	N.D.	N.D.(<0.32)	N.D.(0.47)	-	-
	Crustacean	Grapsid crab	0.10	54	13	5.2	7.7	-	Adult
	Polychaeta	Ragworm, etc.	0.06	206	6.4	2.2	4.2	-	Adult
	Shellfish	Pacific oyster (shell)	2.9	large numbers	60	23	37	0.73	Adult
		Pacific oyster (without shell)	1.1		N.D.	N.D.(<1.1)	N.D.(<0.83)	-	
		Manila clam (shell)	1.3	large numbers	1.9	0.77	1.1	3.2	Adult
		Manila clam (without shell)	0.72		13	4.7	8.1	-	
	Fish	Flathead mullet	0.36	10	23	8.8	14	-	Young fish
		Yellowfin goby	0.19	16	7.5	2.9	4.6	-	Adult
I w a k (H i s h O s h f a i s o C h h i o a t r m e a) O f f M e a c h o r e	Algae	Sea oak	1.1	-	8.7	3.3	5.4	-	-
	Sea urchin	Sea urchin	2.0	50	42	16	26	-	Adult
		Northern sea urchin	4.2	41	12	4.4	7.7	-	Adult
	Shellfish	Abalone (shell)	0.6	10	16	6.0	9.6	-	Adult
		Abalone(Without shell)	1.6		5.1	1.9	3.2	-	Adult
	Fish	John dory	1.6	2	24	8.7	15	-	Adult
		Bastard halibut	5.6	5	58	21	37	0.085	Adult
		Marbled sole	2.5	5	37	14	23	0.24	Adult
		Bluefin searobin	1.1	5	6.7	2.3	4.4	-	Adult
		Ocellate spot skate	1.8	5	118	43	75	-	Adult
Squatina sp.		4.1	1	48	18	30	0.030	Adult	

*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.