

Results of Radioactive Material Monitoring of Aquatic Organisms (Lake Inawashiro (north lakeside) I / Lake Inawashiro (south lakeside) J)

<Lake Inawashiro (north lakeside) I / Lake Inawashiro (south lakeside) J: Samples collected>

Locations	General items		Radioactive materials			
	Water	Sediment	Water (Cs)	Water (Sr)	Sediment (Cs)	Sediment (Sr)
I-1	○	○	○	○	○	○
I-2	-	○	-	-	○	-
I-3	○	○	○	-	○	-
I-4	-	○	-	-	○	-
J-1	○	○	○	-	○	-

<Lake Inawashiro (north lakeside) I / Lake Inawashiro (south lakeside) J: Site measurement item>

Locations	Latitude and longitude of the location		Survey date and time			Water	Sediment				Other	
	Latitude	Longitude	Date	Time (water)	Time (sediment)	Water temperature (degrees C)	Sediment temperature (degrees C)	Property	Color	Contaminants	Water depth (m)	Secchi disk depth (m)
I-1(Surface layer)	37.5047°	140.1143°	2016/10/19	09:20	09:48	17.9	16.1	Ooze	7.5Y 2/1	Plant pieces	9.5	8.0
I-1(Bottom layer)						17.6						
I-2	37.4995°	140.1409°		-	09:02	-	17.4	Ooze	7.5Y 4/2	Plant pieces	-	-
I-3(Surface layer)	37.5077°	140.0263°		10:45	10:51	18.1	17.9	Ooze	7.5Y 6/3	Freshwater clam, Plant pieces	6.5	>6.5
I-3(Bottom layer)						17.8						
I-4	37.5160°	140.1092°		-	10:23	-	18.3	Sand gravel	7.5Y 5/3	Waterweed	-	-
J-1(Surface layer)	37.4203°	140.1008°		08:22	08:31	17.8	18.0	Sand	7.5Y 5/3	Plant pieces, Freshwater clam, Midge	4.8	>4.8
J-1(Bottom layer)						17.8						

<Lake Inawashiro (north lakeside) I / Lake Inawashiro (south lakeside) J: General survey items/Analysis of radioactive materials Water>

Locations	Latitude and longitude of the location		Survey date and time		pH	BOD (mg/L)	COD (mg/L)	DO (mg/L)	Electric conductivity (mS/m)	Salinity	TOC (mg/L)	SS (mg/L)	Turbidity (FNU)	Cs-134 (Bq/L)	Cs-137 (Bq/L)	Sr-90 (Bq/L)
	Latitude	Longitude	Date	Time (water)												
I-1(Surface layer)	37.5047°	140.1143°	2016/10/19	09:20	7.5	<0.5	1.7	9.1	11.5	0.06	0.8	<1	0.8	0.0023	0.0097	-
I-1(Bottom layer)					5.9	<0.5	1.5	9.4	13.5	0.07	0.7	2	0.9	N.D.(0.0017)	0.010	0.00090
I-3(Surface layer)	37.5077°	140.0263°		10:45	7.0	<0.5	1.6	9.4	11.3	0.06	0.8	<1	0.5	N.D.(0.0015)	0.0095	-
I-3(Bottom layer)					7.0	<0.5	1.6	9.4	11.3	0.06	0.7	<1	0.7	0.0024	0.0097	-
J-1(Surface layer)	37.4203°	140.1008°		08:22	6.6	0.7	1.9	9.6	11.3	0.06	1.0	<1	0.5	N.D.(0.0018)	0.0097	-
J-1(Bottom layer)					6.8	2.0	2.9	9.2	11.5	0.06	1.1	<1	0.6	0.0021	0.0098	-

Note) N.D. means to be below the detection limit and figures in parentheses show the detection limit.

<Lake Inawashiro (north lakeside) I / Lake Inawashiro (south lakeside) J: General survey items/Analysis of radioactive materials Sediment>

Locations	Latitude and longitude of the location		Survey date and time		pH	Redox potential E _{SHLE} (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)
	Latitude	Longitude	Date	Time (sediment)							Gravel (2-75mm) (%)	Coarse sand (0.85-2mm) (%)	Medium sand (0.25-0.85mm) (%)	Fine sand (0.075-0.25mm) (%)	Silt (0.005-0.075mm) (%)	Clay (Less than 0.005mm) (%)	Median grain diameter (mm)	Maximum grain diameter (mm)			
I-1	37.5047°	140.1143°	2016/10/19	09:48	6.7	196	76.7	9.8	25.9	2.488	0.3	0.7	5.8	53.8	17.0	22.4	0.10	4.8	87	520	0.29
I-2	37.4995°	140.1409°		09:02	6.9	208	70.6	7.8	19.6	2.510	0.3	0.8	2.0	44.8	34.0	18.1	0.069	4.8	57	380	-
I-3	37.5077°	140.0263°		10:51	7.0	256	70.0	10.4	21.9	2.508	0.1	0.3	5.2	37.6	38.0	18.8	0.050	4.8	25	150	-
I-4	37.5160°	140.1092°		10:23	6.8	372	28.1	1.9	5.1	2.662	30.5	16.2	30.1	6.7	7.7	8.8	0.75	19	7.0	53	-
J-1	37.4203°	140.1008°		08:31	7.0	340	34.4	1.9	3.6	2.616	0.5	3.9	76.1	18.5	0.2	0.8	0.32	4.8	67	410	-

<Lake Inawashiro (north lakeside) I / Lake Inawashiro (south lakeside) J: Analysis items Aquatic organisms>

Locations	Sampling point	Latitude and longitude of the location		Sampling date	Division	Class	Order	Family	Scientific name	English name	Population	Sample weight (kg-wet)	Note			Radioactive cesium (Bq/kg-wet)			Sr-90 (Bq/kg-wet)	
		Latitude	Longitude										Growth stage	Stomach contents	Measurement site	Total	Cs-134	Cs-137		
I-1 I-2 (north lakeside)	-	37.5047° 37.4995°	140.1143° 140.1409°	2016/10/19	Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	20	0.41	Immature fish,Mature fish	Obscure digesta	Viscera removed	16.0	2.0	14	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	6	0.81	Mature fish	Midge	Viscera removed	34.3	5.3	29	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Zacco platypus</i>	Pale chub	20	0.34	Immature fish,Mature fish	-	-	10.4	1.1	9.3	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Pseudogobio esocinus</i>	Pseudogobio esocinus	30	0.40	Immature fish,Mature fish	-	-	9.2	1.3	7.9	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius auratus</i>	Carassius auratus langsdorfii	12	0.52	Mature fish	Obscure digesta	Viscera removed	15.0	2.0	13	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius auratus</i>	Carassius auratus langsdorfii	2	0.78	Mature fish	Amorphous Residue	Viscera removed	26.0	4.0	22	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Cyprinus carpio</i>	Common carp	1	0.052	Immature fish	Amorphous Residue	Viscera removed	11.9	2.0	9.9	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Hemibarbus barbus</i>	Hemibarbus barbus	3	1.3	Mature fish	Amorphous Residue	Viscera removed	28.0	4.0	24	-	
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Salvelinus leucomaenis</i>	Char	3	2.5	Mature fish	Japanese smelt	Viscera removed	53.8	8.8	45	0.18	
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	10	6.3	Immature fish	Japanese smelt	Viscera removed	31.3	5.3	26	-	
Vertebrata	Osteichthyes	Siluriformes	Siluridae	<i>Silurus asotus</i>	Amur catfish	1	0.078	Immature fish	Fish	Viscera removed	13.1	2.1	11	-						
				2016/10/18	Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.25	-	-	-	1.40	0.30	1.1	-	
J-1 (south lakeside)	-	37.4203°	140.1008°	2016/10/19	Algae/plant	-	-	-	-	Plankton (Planktonic algae)	-	0.027	-	-	-	N.D.	N.D.(1.6)	N.D.(1.3)	-	
					Algae/plant	Dicotyledoneae	Nymphaeales	Nymphaeaceae	<i>Nuphar japonicum</i>	Cow lily	-	0.32	-	-	-	2.59	0.39	2.2	-	
					Algae/plant	Dicotyledoneae	Solanales	Menyanthaceae	<i>Nymphoides peltata</i>	Fringed water-lily	-	0.31	-	-	-	0.84	N.D.(0.32)	0.84	-	
					Algae/plant	Monocotyledoneae	Alismatales	Hydrocharitaceae	<i>Elodea nuttallii</i>	Western Waterweed	-	0.23	-	-	-	2.72	0.42	2.3	-	
					Mollusca	Gastropoda	Architaenioglossa	Viviparidae	<i>Bellamya japonica</i>	Japanese mysterysnail	27	0.16	Imago	-	Molluscos part	0.98	N.D.(0.48)	0.98	-	
					Mollusca	Gastropoda	Architaenioglossa	Viviparidae	<i>Bellamya chinensis laeta</i>	Mud-snail	19	0.031	Imago	-	Molluscos part	3.3	N.D.(1.5)	3.3	-	
					Mollusca	Gastropoda	Discopoda	Pleuroceridae	<i>Semisulcospira libertina</i>	Semisulcospira libertina	26	0.010	Imago	-	Molluscos part	N.D.	N.D.(3.5)	N.D.(3.0)	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	9	0.33	Immature fish,Mature fish	Obscure digesta	Viscera removed	17.6	2.6	15	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	6	1.1	Mature fish	Midge	Viscera removed	33.0	5.0	28	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Zacco platypus</i>	Pale chub	20	0.35	Immature fish,Mature fish	-	-	5.41	0.61	4.8	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Pseudogobio esocinus</i>	Pseudogobio esocinus	30	0.38	Immature fish,Mature fish	-	-	4.57	0.67	3.9	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius auratus</i>	Carassius auratus langsdorfii	40	0.26	Immature fish	-	-	9.0	1.2	7.8	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius auratus</i>	Carassius auratus langsdorfii	4	2.4	Mature fish	Amorphous Residue	Viscera removed	29.6	4.6	25	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Hemibarbus barbus</i>	Hemibarbus barbus	3	2.8	Mature fish	Amorphous Residue	Viscera removed	24.8	3.8	21	-	
					2016/10/18	Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Misgurnus anguillicaudatus</i>	Oriental weatherfish	27	0.11	Immature fish,Mature fish	-	-	1.5	N.D.(0.55)	1.5	-
					2016/10/19	Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Salvelinus leucomaenis</i>	Char	2	1.5	Mature fish	Japanese smelt	Viscera removed	50.1	7.1	43	0.16
					2016/10/19	Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	5	2.1	Immature fish,Mature fish	Japanese smelt	Viscera removed	31.4	4.4	27	-
					2016/10/18	Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Gymnogobius urotaenia</i>	Goby	5	0.018	Immature fish	-	-	19.8	3.8	16	-
					2016/10/19	Vertebrata	Osteichthyes	Siluriformes	Siluridae	<i>Silurus asotus</i>	Amur catfish	1	0.93	Mature fish	Fish	Viscera removed	18.7	3.7	15	-
					2016/10/18	Vertebrata	Amphibia	Anura	-	-	-	-	-	Frog	39	0.030	Larva (Tadpole)	-	-	15.3
Vertebrata	Amphibia	Anura	Ranidae	<i>Rana rugosa</i>		Wrinkled Frog	13	0.032	Imago	-	-	2.1	N.D.(1.6)	2.1	-					
Vertebrata	Amphibia	Caudata	Salamandridae	<i>Cynops pyrrhogaster</i>		Cynops pyrrhogaster	19	0.086	Imago	-	-	1.4	N.D.(0.74)	1.4	-					

*1: Organisms were collected in or around the targeted water areas.

*2: When multiple types of aquatic organisms were collected, a sample was prepared by mixing them.

*3: For a sample made of multiple types of aquatic organisms, the English name of the dominant one largest in number is underlined.

*4: Basically, measurement was conducted for all organism samples. Viscera (stomach and bowels) were removed for the measurement when possible so that undigested food and sediments, etc. in the digestive system would be excluded.

*5: Plankton (suspended algae) is the residue remaining after the filtration of lake water or seawater with a plankton net (40µm-mesh).

*6: River bottom materials (incl. algae) are algae, etc. that were scratched off stones with a brush, etc. and may include very fine particles such as inorganic silt and clay.

*7: N.D. means to be below the detection limit and figures in parentheses show the detection limit.

*8: Activity concentrations include counting errors, but the details are omitted here.