

OResults of Radioactive Material Monitoring of Aquatic Organisms (Location E along the Niida River)

<Location E along the Niida River: Samples collected>

| Locations | General items | | Radioactive materials | | | |
|-----------|---------------|----------|-----------------------|------------|---------------|---------------|
| | Water | Sediment | Water (Cs) | Water (Sr) | Sediment (Cs) | Sediment (Sr) |
| E-2 a | ○ | ○ | ○ | ○ | ○ | ○ |

<Location E along the Niida River: 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) | Transparency (cm) |
| E-2 a | 37.6640° | 140.9447° | 2017/8/28 | 12:15 | 12:41 | 20.1 | 20.3 | Sediment with sand | 2.5Y3/3 | None | 0.30 | >50 |

<Location E along the Niida River: 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) | | | | | | | | | | | | |
| E-2 a | 37.6640° | 140.9447° | 2017/8/28 | 12:15 | 7.3 | <0.5 | 3.2 | 10.2 | 7.8 | 0.04 | 1.3 | 3 | 2.7 | 0.017 | 0.11 | 0.0018 |

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

<Location E along the Niida River: General survey items/Analysis of radioactive materials Sediment>

| Locations | Latitude and longitude of the location | | Survey date and time | | pH | Redox potential E _{H/E} (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) | | | |
| E-2 a | 37.6640° | 140.9447° | 2017/8/28 | 12:41 | 6.8 | 286 | 54.4 | 8.4 | 25.8 | 2.589 | 12.3 | 9.6 | 14.6 | 15.8 | 25.1 | 22.6 | 0.12 | 19 | 670 | 5200 | 1.0 |

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

<Location E along the Niida River: 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 | | |
| E-2b | The main stream of the Niida River | 37.6635° | 140.9452° | 2017/8/20 | Algae/plant | - | - | - | - | Riverbed Deposits (Include algae) | - | 0.012 | - | - | - | 357 | 47 | 310 | - | |
| | | | | | Algae/plant | Zygnemataceae | Zygnematales | Zygnemataceae | <i>Spirogyra sp.</i> | Spirogyra | - | 0.12 | - | - | - | 12.4 | 1.4 | 11 | - | |
| | | | | | Arthropoda | Insecta | Trichoptera | Stenopsychidae | <i>Stenopsyche marmorata</i> | Stenopsyche marmorata | 41 | 0.0099 | Larva | - | - | - | 104 | 13 | 91 | - |
| | | | | | Arthropoda | Insecta | Odonata | Corduliidae | <i>Macromia amphigena amphigena</i> | Macromia amphigena | 9 | 0.0030 | Larva (Dragonfly larva) | - | - | - | 28 | N.D.(14) | 28 | - |
| | | | | | Arthropoda | Insecta | Odonata | Gomphidae | <i>Sieboldius albardae</i> | Sieboldius albardae | | | | | | | | | | |
| | | | | | Arthropoda | Insecta | Odonata | Gomphidae | <i>Gomphus postocularis</i> | Gomphus postocularis | | | | | | | | | | |
| | | | | | Arthropoda | Insecta | Odonata | Libellulidae | <i>Orthetrum albistylum speciosum</i> | Common skimmer | | | | | | | | | | |
| | | | | | Arthropoda | Malacostraca | Decapoda | Cambaridae | <i>Procambarus clarkii</i> | Red swamp crawfish | 2 | 0.047 | Imago | - | - | - | 54.3 | 6.3 | 48 | - |
| | | | | | Arthropoda | Malacostraca | Decapoda | Palaemonidae | <i>Palaemon paucidens</i> | Common prawn | 4 | 0.0045 | Imago | - | - | - | 34 | N.D.(12) | 34 | - |
| | | | | | Arthropoda | Malacostraca | Decapoda | Atyidae | <i>Paratya improvisa</i> | Freshwater shrimp | 594 | 0.060 | Juvenile,Imago | - | - | - | 30.4 | 3.4 | 27 | - |
| | | | | | Arthropoda | Malacostraca | Decapoda | Varunidae | <i>Eriocheir japonica</i> | Japanese mitten crab | 11 | 0.18 | Juvenile | - | - | - | 52.7 | 5.7 | 47 | - |
| | | | | | Vertebrata | Osteichthyes | Cypriniformes | Cyprinidae | <i>Tribolodon hakonensis</i> | Japanese dace | 12 | 0.0078 | Immature fish | Obscure digesta | Viscera removed | - | 19 | N.D.(6.3) | 19 | - |
| | | | | | Vertebrata | Osteichthyes | Cypriniformes | Cyprinidae | <i>Zacco platypus</i> | Pale chub | 7 | 0.022 | Immature fish | - | - | - | 23.9 | 3.9 | 20 | - |
| | | | | | Vertebrata | Osteichthyes | Cypriniformes | Cyprinidae | <i>Pseudogobio esocinus</i> | Pseudogobio esocinus | 3 | 0.031 | Immature fish | - | - | - | 22.1 | 2.1 | 20 | - |
| | | | | | Vertebrata | Osteichthyes | Cypriniformes | Cyprinidae | <i>Acheilognathus melanogaster</i> | Acheilognathus melanogaster | 13 | 0.019 | Immature fish,Mature fish | - | - | - | 44.4 | 5.4 | 39 | - |
| | | | | | Vertebrata | Osteichthyes | Cypriniformes | Cyprinidae | <i>Gnathopogon elongatus elongatus</i> | Gnathopogon elongatus elongatus | 5 | 0.0067 | Immature fish | - | - | - | 18 | N.D.(12) | 18 | - |
| | | | | | Vertebrata | Osteichthyes | Cypriniformes | Cyprinidae | <i>Hemibarbus barbus</i> | Hemibarbus barbus | 5 | 0.0090 | Immature fish | - | - | - | 12 | N.D.(5.2) | 12 | - |
| | | | | | Vertebrata | Osteichthyes | Cypriniformes | Cobitidae | <i>Misgurnus anguillicaudatus</i> | Oriental weatherfish | 44 | 0.071 | Immature fish,Mature fish | - | - | - | 16.6 | 2.6 | 14 | - |
| | | | | | Vertebrata | Osteichthyes | Salmoniformes | Osmeridae | <i>Plecoglossus altivelis</i> | Sweetfish | 10 | 0.16 | Immature fish,Mature fish | - | - | - | 126 | 16 | 110 | - |
| | | | | | Vertebrata | Osteichthyes | Perciformes | Gobiidae | <i>Rhinogobius fluviatilis</i> | Rhinogobius fluviatilis | 25 | 0.040 | Immature fish,Mature fish | - | - | - | 41.0 | 5.0 | 36 | - |
| Vertebrata | Osteichthyes | Perciformes | Gobiidae | <i>Rhinogobius sp. CB</i> | Rhinogobius nagoyae | | | | | | | | | | | | | | | |
| Vertebrata | Amphibia | Anura | - | - | Frog | 4 | 0.0045 | Larva (Tadpole) | - | - | - | 328 | 48 | 280 | - | | | | | |
| Vertebrata | Amphibia | Anura | Ranidae | <i>Rana rugosa</i> | Wrinkled Frog | 1 | 0.013 | Imago | - | - | - | 63.7 | 6.7 | 57 | - | | | | | |
| | | | | | Coarse Particulate Organic Matter | - | - | - | - | Bottom fallen leaves | - | 0.22 | - | - | - | 145 | 15 | 130 | - | |
| E-3 | The main stream of the Niida River | 37.6444° | 141.0018° | 2017/8/22 | Vertebrata | Osteichthyes | Anguilliformes | Anguillidae | <i>Anguilla japonica</i> | Japanese eel | 5 | 0.87 | Immature fish,Mature fish | Shrimp | Viscera removed | 8.15 | 0.95 | 7.2 | - | |
| | | | | | Vertebrata | Osteichthyes | Salmoniformes | Osmeridae | <i>Plecoglossus altivelis</i> | Sweetfish | 37 | 1.1 | Immature fish,Mature fish | - | - | - | 37.4 | 5.4 | 32 | 0.22 |

*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.