

*IUR International Workshop
Worldwide harmonization of radioecology networks
18-20 Jun 2014 La Baume Aix en provence*

Introduction of Institute of Environmental Radioactivity At Fukushima University

Kenji NANBA

IER at FU



- Smallest among national universities: small number of faculty member for science but widely scattered range of expert fields

After the accident

- Started projects to measure radiation and map borrowing survey meters as there were no equipment for radiology.
- Helped decontamination activities done by JAEA
- Studied on agriculture and helped farmers through measurements of radiation and concentration in soil, water and products.
- Studied river and lake environment.
- Held courses of environmental radioactivity in collaboration with other universities.

- Established FURE (Fukushima Future Center for Regional Revitalization) in May 2011
- Requested national government to have an institute for radiological study

IER established in Jul. 2013

Current Needs Among Scientific Communities:

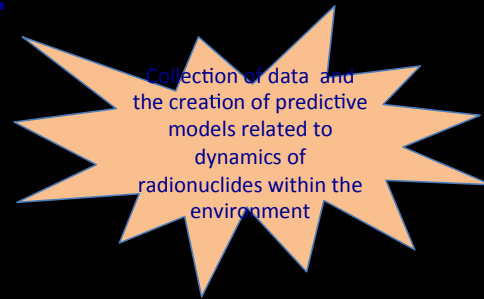
A research base close to observatory sites in Fukushima

Research strategies are chosen by a committee of partner research institutions

- ⇒ Projects will take place in a variety of environmental settings, including forests, rivers, lakes, and the sea
- ⇒ Models for predicting future radioactive material transfer within these environments will be established by integrating collected data

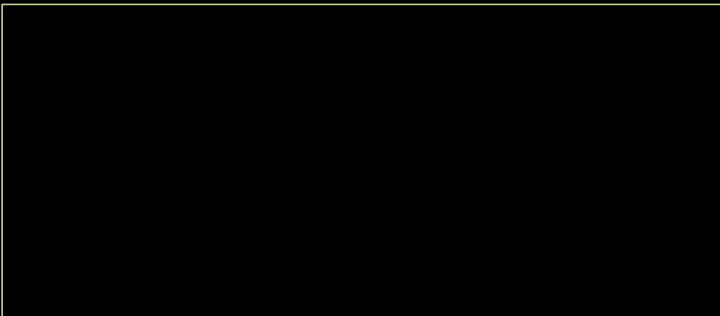
The institute will be made available for shared use by universities, institutes, and researchers from Japan and around the world.

- Investigations, observations and experiments in Fukushima
- Primary processing of samples
- Analysis of samples
- Archives of early samples
- Provision of the archives
- Archives of data and documents
- Modeling for prediction
- Convening scientific meetings



Expected Users

- International Organizations
 - IAEA
 - STAR
 - COMET
- Europe
 - Glasgow University
 - Sheffield University
 - Plymouth University
 - Liverpool University
 - IRSN
 - LSCE
 - SCK • CEN
 - Karlsruhe Inst. Technol.
 - Moscow University
 - Belarus National University
 - UHMI
 - NAN Ukraine
- North America
 - Colorado State University



Institute of Environmental Radioactivity at Fukushima University (IER)

Helping the residents, farmers,
administration (decision making, managing environment ...)

Sharing the experience and findings among experts of relevant
field of science from various countries.

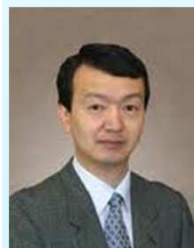
(In order to

- * Promote restoration of Fukushima
- * And to prepare for a future emergency situation that may happen somewhere in the world)

Sep 1, 2013 Kiev



Research staff in IER at Fukushima Univ.



Director
Takahashi, Takayuki

Robotics
Development of
Sampling / measuring
instruments



Deputy director
Nanba, Kenji

Environmental
Microbiology
Transfer of rCs in
freshwater system



Deputy director
Onda, Yuichi

Hydrology
Transfer in forest and
aquatic system



Professor
Tsukada, Hirofumi

Radioecology
Agricultural env. and
products



Professor
Aoyama, Michio

Marine
physics and chemistry



Project professor
Alexei Konoplev

Radiochemistry and
radiobiology



Project professor
Sergii Kivva

Statistics and Hydrology
Environmental modeling



Project professor
Mark Zheleznyak

Hydrology
Modeling of nuclear transfer in
Water system



Project professor
Beata Varga

Radiochemistry
QA reference material



Project professor
Vasyi Yoschenko

Radioecology
Forest ecology and products



Project professor
Valentine Golosov

Geomorphology
Nuclear transfer in the
environment



Project associate professor
Takase, Tsugiko

Physical chemistry
Development of
analytical technique



Project assistant professor
Olena Parenuik

Radiobiology
Soil microbiology



Project assistant professor
Okuda, Kei

Zoology
Radioecology of wild mammals



Cooperative researcher
Ishimaru, Takashi

Marine ecology

Cooperative researchers

Oguri, Emiko Botany Hiroshima Univ.

Shoukamy Ibrahim Mahmoud Ibrahim

Zoology Hiroshima Univ.

Mitsutake, Norisato Nagasaki Univ.

Ogi, Tomoo Nagasaki Univ.

Participating profs from SSS Fukushima Univ.

Watanabe, Akira Meteorology

Yamguchi, Katsuhiko Physics

Takagai, Yoshitaka Analytical chemistry

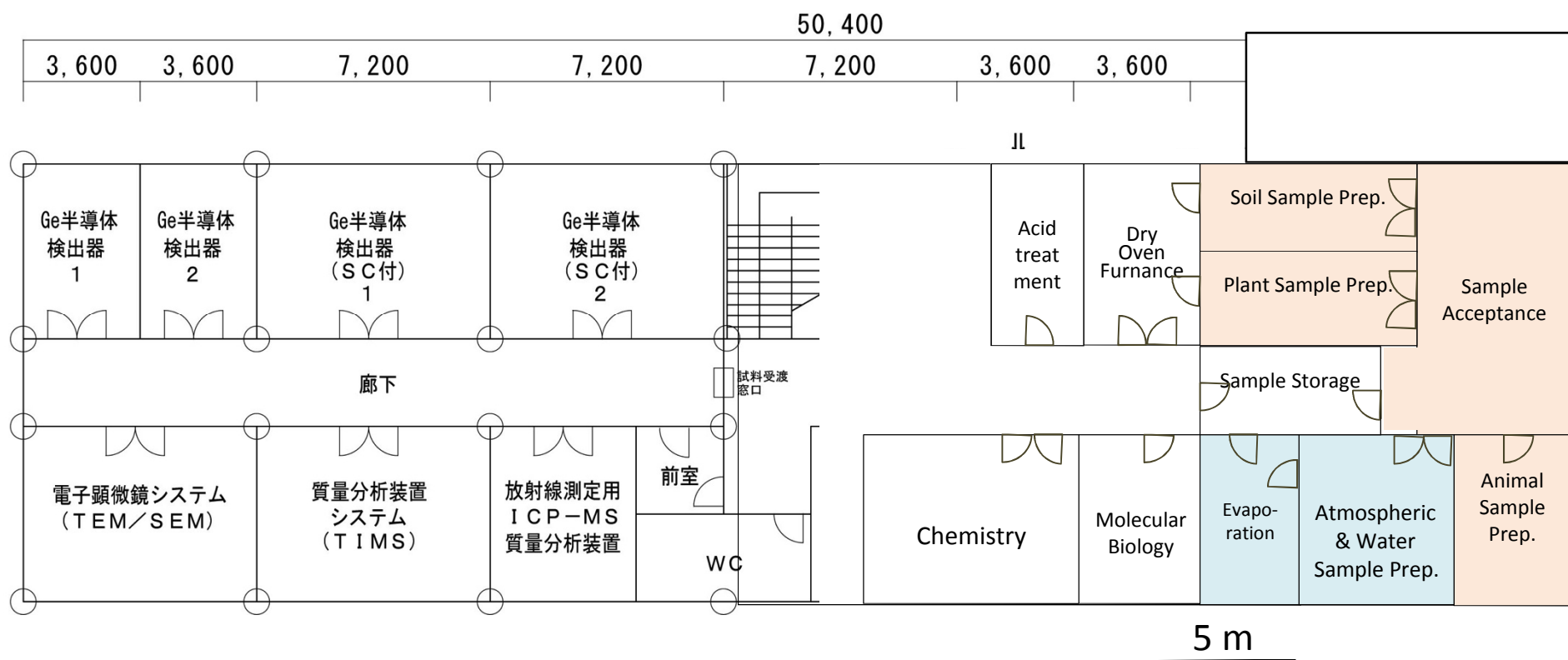
Yokoo, Yoshi Hydrology·Civil engineering

Kawagoe, Seiki Hydrology of watershed

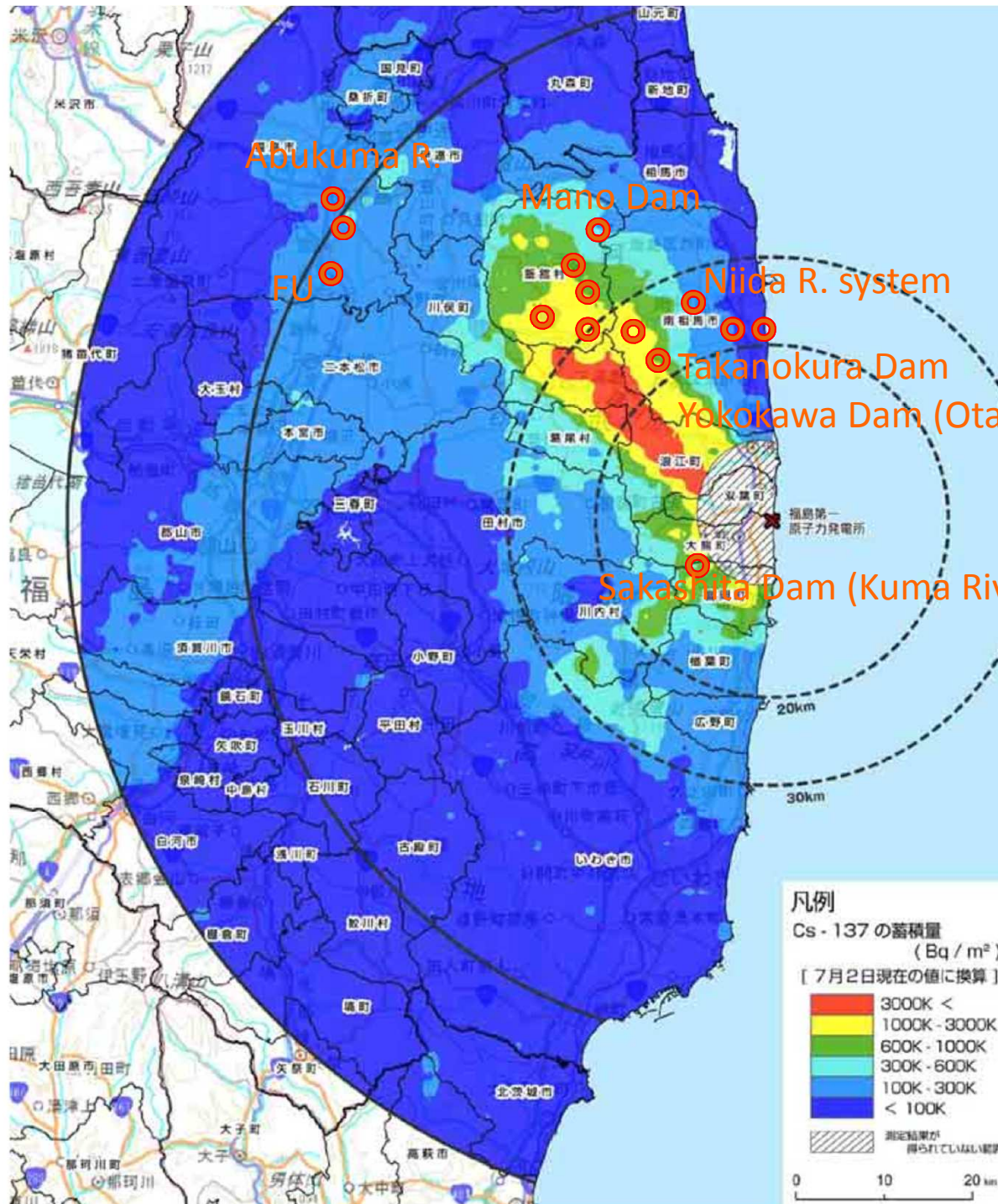
Facilities of IER

1st Building (1400 m²) ... finished by Jul. 2014
 Sample prep rooms. HPGe, MS etc.

2nd Building (5000 m²) ... finished by Mar. 2016
 Sample archive rooms. Independent labs for teaching staff



Hydrological and Aquatic Ecological Study sites of IER



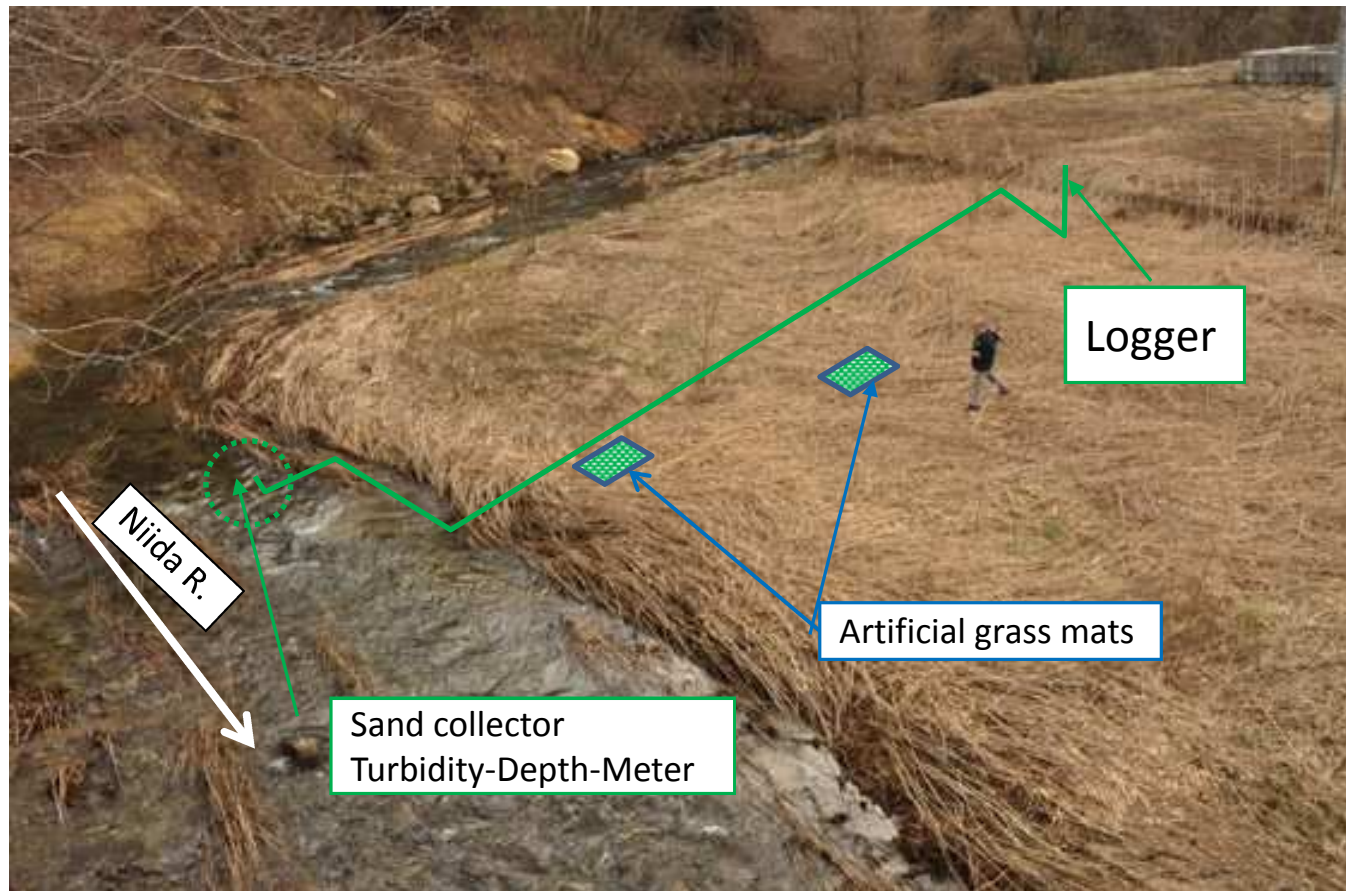
FU: Fukushima University
Aq: Hydrological study,
Aquatic ecological study

Yokokawa Dam (Ota River)

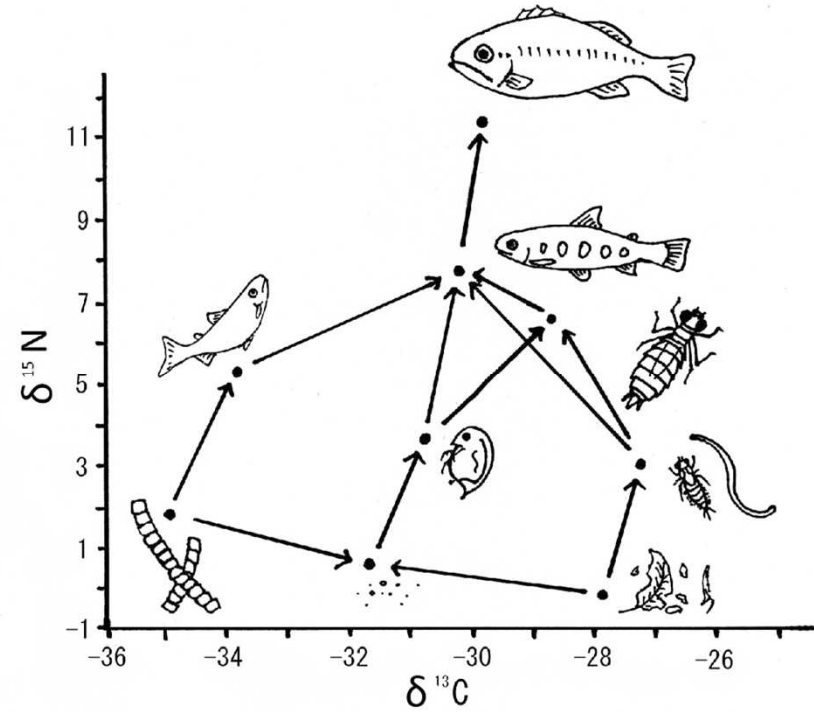
Sakashita Dam (Kuma River)

3rd Airborne survey MEXT 2013

Hydrological Study at a site for Niida River

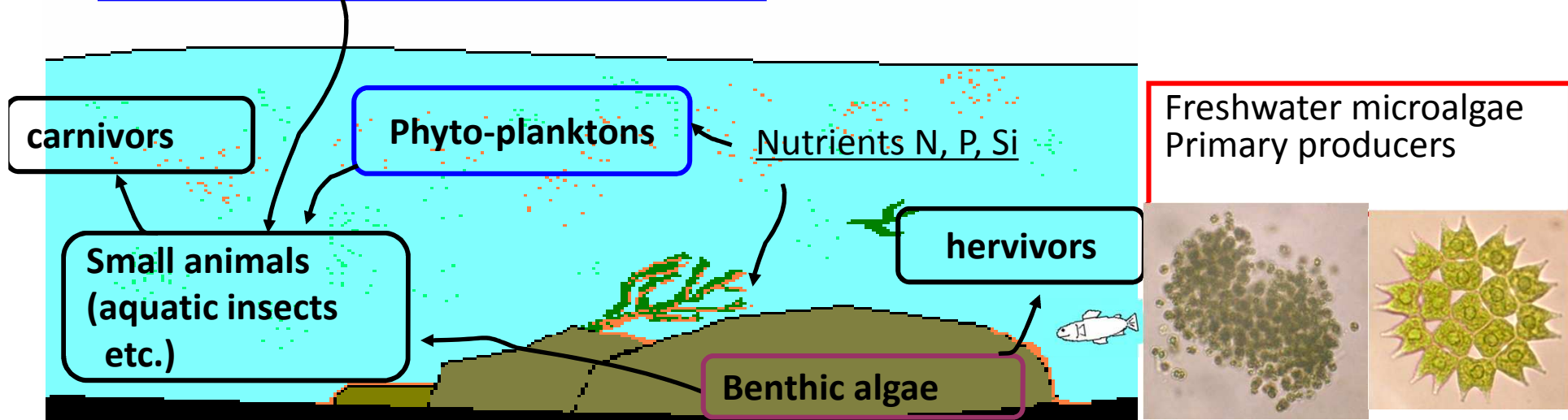


Stable isotopes, a clue to find the source of the radiocesium in fish



↑ Food chain and stable isotopes

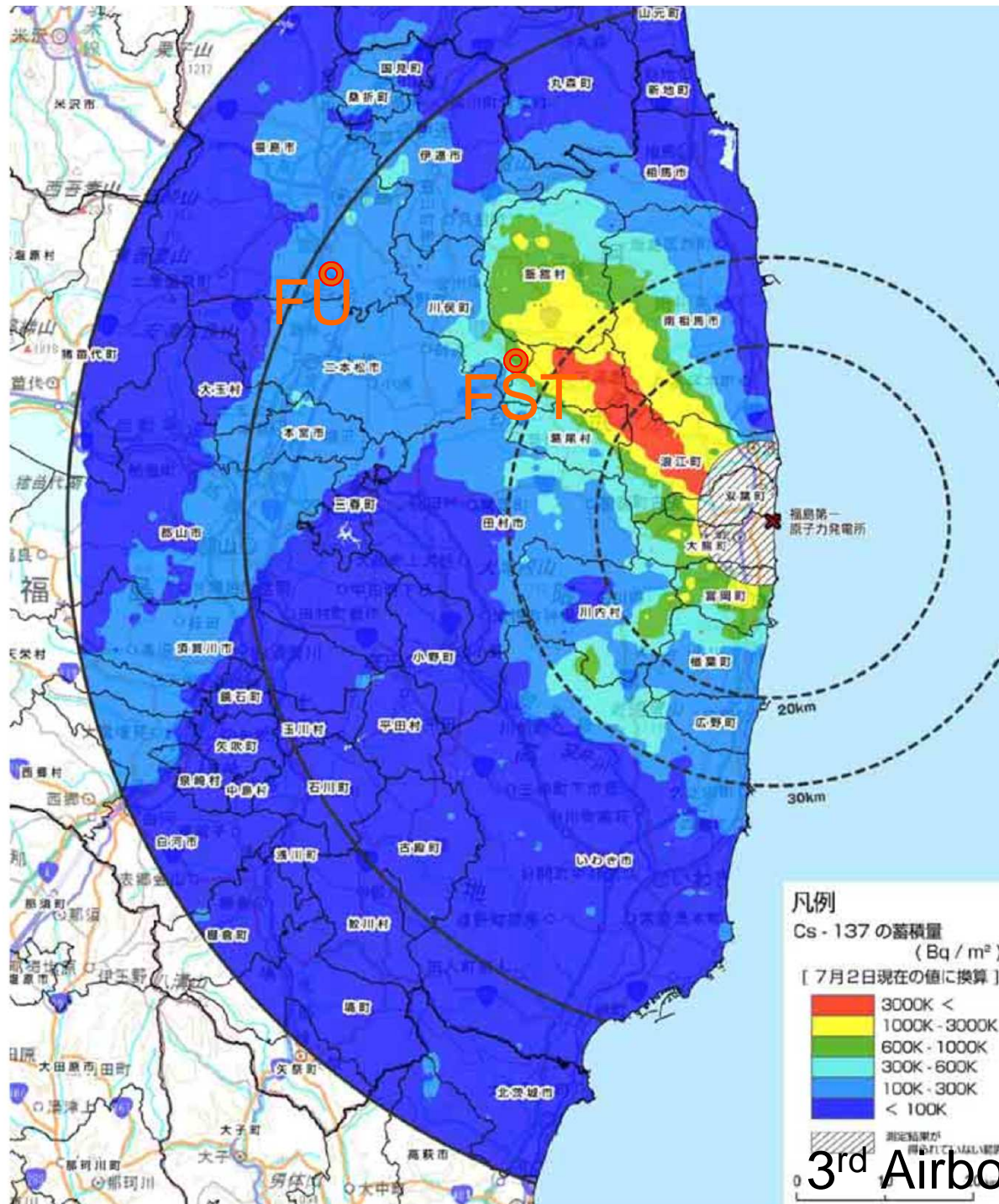
Terrestrial plants (fallen leaves)



Forest site of IER

FU: Fukushima University

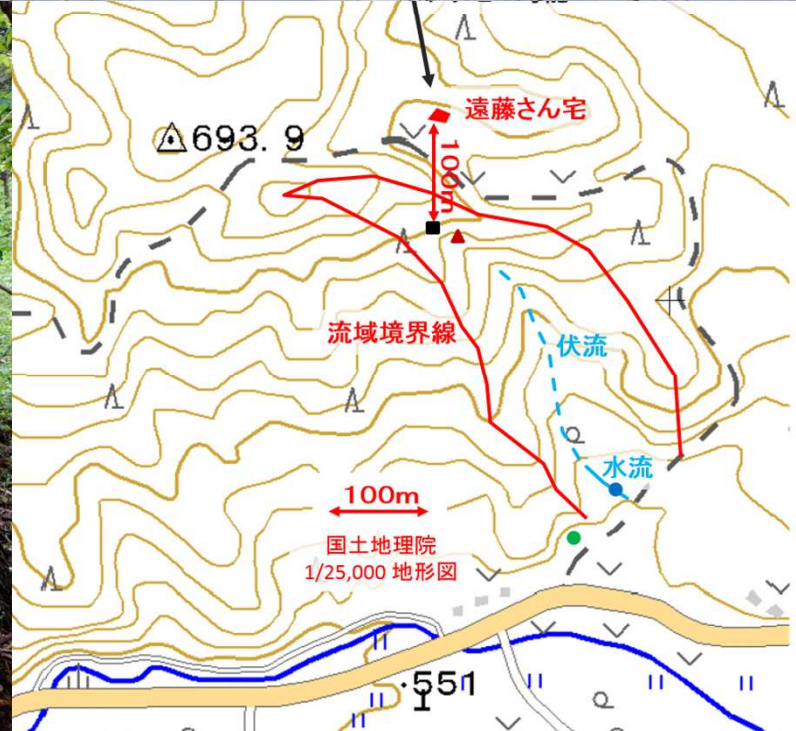
FST: Forest site in Yamakiya, Kawamata



ER Yamakiya site

Yamakiya, Kawamata town

Cs-137 inventory 600 -1,000 kBq/m²



Lists of plants and animals

1. Plants (Dr. Kurosawa)
...annual vascular plants relatively common
and easy to identify
2. Mammals (Dr. Okuda)
3. Amphibians and Reptiles (Dr. Okuda)

IER is planning to

- Organize an investigation on biota for IER forest site as a part of COMET study this summer.
- Publish call for positions of research staff (n ~ 8) in Jul. (or Aug?)
- Have graduate course for environmental radioactivity in the future