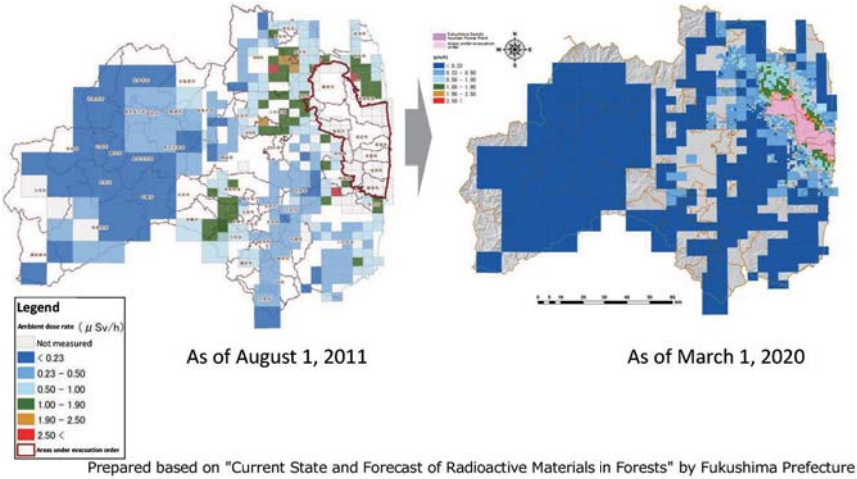
Radiation Monitoring in Forest

Changes in Ambient Dose Rates in Forests

The average ambient dose rate for 362 locations as of March 2020 is approximately 22% of the average as of August 2011.



Prepared based on "Current State and Forecast of Radioactive Materials in Forests" by Fukushima Prefecture

Fukushima Prefecture has been conducting monitoring of ambient dose rates in forests within the prefecture every year since FY2011. The monitoring targeted 362 locations in FY2011 but gradually expanded the coverage to target 1,300 locations in FY2018.

For the 362 locations, where monitoring has been continued from the beginning, the average ambient dose rate was 0.20 μSv/h as of March 2020, approximately 22% of the average as of August 2011 (0.91 μSv/h).

Measurement results by region as of March 2020 (minimum value - maximum value) are as follows.

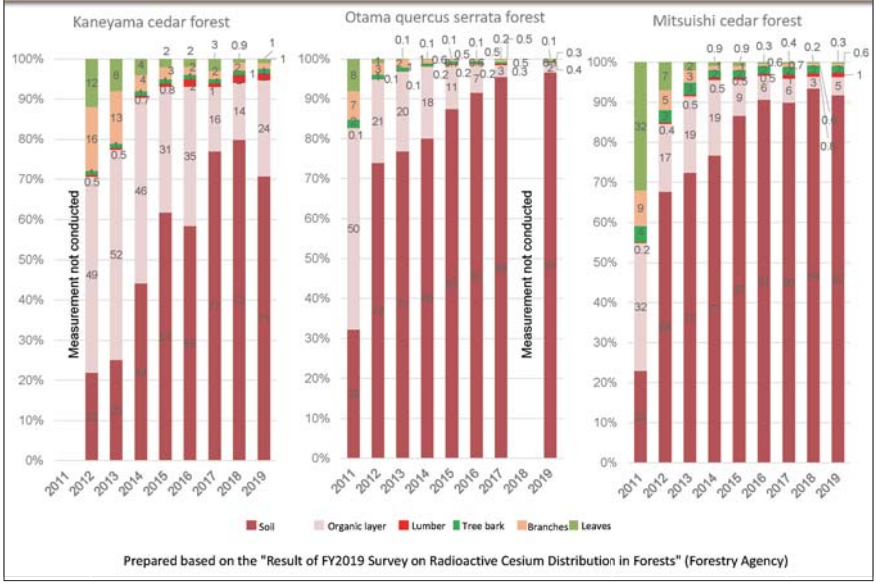
- Ken-poku (northern pref.) (361 locations): 0.05 - 1.44 μSv/h
- Ken-chu (central pref.) (122 locations): 0.04 - 0.42 μSv/h
- Ken-nan (southern pref.) (38 locations): 0.05 - 0.24 μSv/h
- Aizu (33 locations): 0.03 - 0.08 μSv/h
- Minamiaizu (22 locations): 0.03 - 0.09 μSv/h
- Soso (653 locations): 0.10 - 3.30 μSv/h
- Iwaki (71 locations): 0.04 - 1.07 μSv/h

(Related to p.185 of Vol. 1, "Distribution of Radioactive Materials in Forests")

Included in this reference material on March 31, 2019
Updated on March 31, 2021

Radiation Monitoring in Forest

Changes in Radioactive Cesium Distribution in Forests



Prepared based on the "Result of FY2019 Survey on Radioactive Cesium Distribution in Forests" (Forestry Agency)

Regarding radioactive cesium in the surveyed forests, in the first one year after the accident from 2011 to 2012, the percentage of radioactive cesium found in leaves, branches and litter layers decreased significantly, while that found in soil increased significantly. This is considered to be because radioactive cesium deposited on leaves and branches, etc. of trees gradually transferred to the litter layer on the ground due to rain or leaf fall and then transferred to soil due to the decomposition of the litter layer. The percentage of radioactive cesium in soil is continuously increasing, and over 90% of the radioactive cesium in forests is found in soil or the litter layer as of 2019, mostly found in the soil surface layer at a depth between 0 cm and 5 cm.

The percentage of radioactive cesium found in the litter layer is high in the Kaneyama cedar forest and is low in other forests. Each forest thus shows different tendencies. The survey will be continued into the future.

(Related to p.185 of Vol. 1, "Distribution of Radioactive Materials in Forests")

Included in this reference material on January 18, 2016
Updated on March 31, 2021

Radiation Monitoring in Forest

Readings of the Monitoring of Radioactive Cesium in Mountain Streams (2012)

Category	Snowmelt season (March 1 - April 30)		Rainy season (May 1 - July 31)		Autumn season (Aug. 1 - Oct. 31)
Total number of samples	118	(342)	184	(264)	175
Samples wherein Cs was not detected[1]	111	(333)	181	(260)	169
Samples wherein Cs was detected[2]	7	(9)	3	(4)	6
Concentration of Cs in samples wherein Cs was detected[3]: (minimum - maximum) (Bq/L)	1.1 - 5.9	(1.0 - 5.9)	1.0 - 13.1	(1.0 - 13.1)	1.1 - 6.8
Percentage of samples wherein Cs was not detected	94.4%	(97.4%)	98.4%	(98.5%)	96.6%

Source: Prepared based on the Readings of the Monitoring of Radioactive Cesium in Mountain Streams (press releases by the Forestry and Forest Products Research Institute on June 12, Sep. 21 and Dec. 20, 2012)

Forestry Agency

Water samples collected from streams from forests in Fukushima Prefecture were inspected but radioactive cesium was not detected in most of them. Radioactive cesium was detected only in some of the samples, such as those collected on days with rainfall. These samples contained suspended solids with insoluble particles. Measurement was conducted again after filtering them and radioactive cesium was not detected in any of those filtered samples.

This suggests that radioactive cesium was detected mainly due to temporary increases in suspended solids, which are often observed when forest streams increase after rainfall.

1. Detection lower limits for both Cs-134 and Cs-137 are 1 Bq/L.
2. Samples wherein radioactive cesium was detected all contained suspended solids. As a result of the second measurement of those samples after filtering, radioactive cesium was not detected in any of them.
3. Concentration of radioactive cesium is the total of Cs-134 and Cs-137 concentrations.
4. Monitoring points were as follows:
- Snowmelt season: Date City, Iitate Village, (Nihonmatsu City, Aizuwakamatsu City, Koriyama City and Hirono Town)
- Rainy season: Date City, Iitate Village, (Nihonmatsu City)
- Autumn season: Date City, Iitate Village

5. Values in the table are the readings for Date City and Iitate Village throughout these seasons. Values in the parentheses for the snowmelt season and rainy season contain the readings for the cities and the town in the parentheses indicated in 4. above.

Included in this reference material on January 18, 2016