Geophysical Research Abstracts
Vol. 15, EGU2013-3666, 2013
EGU General Assembly 2013

Carbon stocks of dead wood, litter, and soil in the forest sector in Japan estimated by the National Forest Soil Carbon Inventory

Kazuki Nanko (1), Shin Ugawa (2), Masamichi Takahashi (3), Kazuhito Morisada (4), Manabu Takeuchi (5), Yojiro Matuura (3), Shuichiro Yoshinaga (6), Makoto Araki (3), Nagaharu Tanaka (3), Shigeto Ikeda (3), Satoru Miura (3), Shigehiro Ishizuka (6), Masahiro Kobayashi (3), Masahiro Inagaki (6), Akihiro Imaya (3), Shoji Hashimoto (3), Shinji Kaneko (3), and the Inventory Working Group Team

(1) Forestry and Forest Products Research Institute, Tsukuba, Japan (nanko-kazuki@gi.main.jp), (2) Kagoshima University, Kagoshima, Japan, (3) Forestry and Forest Products Research Institute, Tsukuba, Japan, (4) Hokkaido Research Center, Forestry and Forest Products Research Institute, Sapporo, Japan, (5) Chubu Regional Forest Office, Forestry Agency of Japan, Nagano, Japan, (6) Kyushu Research Center, Forestry and Forest Products Research Institute, Kumamoto, Japan

The carbon (C) stocks of dead wood, litter, and soil are the basic data for evaluating the C sink function in the forest sector in Japan. We estimated the C stocks of dead wood, litter, and soil at 0-30 cm in the forest sector in Japan and clarified the spatial distribution of those C stocks according to region units. Data were collected in 2438 survey plots in FY 2006-2010 by the National Forest Soil Carbon Inventory Project, which surveyed the C stocks of dead wood, litter, and soil at 0-30 cm throughout the forest sector in Japan. The C stock (mean $\pm$ sample standard deviation) of dead wood, litter, and soil at 0-30 cm was 0.42 $\pm$ 0.67, 0.49 $\pm$ 0.32, and 6.94 $\pm$ 3.25 kg m-2, respectively. The C stock of soil at 0-30 cm was slightly lower than previous study in Japan. The difference might be attributed to the difference of the sampling methodologies. The C stocks of the three pools were significantly different among regions. Although temperature influenced the tendency in the distribution of the C stocks among regions of dead wood and litter, the tendency was not unidirectional. On the other hand, the C stock of soil at 0-30 cm was higher in northern Japan and lower in southern Japan, although high C stock was observed in some regions in the volcanic region of southern Japan. Thus, we suggest that the soil C stock at 0-30 cm is regulated by macro scale factors such as temperature as well as by the distribution of volcanic ash soils.

The part of this study is published in Ugawa et al. (2012, Bull. FFPRI. 11, 207-221).