

RETENTION EXPERIMENT FOR PLANTATION FORESTRY IN SORACHI, HOKKAIDO (REFRESH), NORTHERN JAPAN

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Study Description

Forestry plantations have been expanding rapidly and now cover 7% of global forests. Since plantations are typically composed of single species and have a simplified structure to maximize wood production, there are concerns about biodiversity conservation. In Japan, vast conifer plantations are maturing and actively harvested. We launched a large-scale retention forestry experiment in Sakhalin fir (*Abies sachalinensis*) plantations in central Hokkaido, northern Japan. We had eight treatments to test the effects of dispersed retention of naturally regenerating broad-leaved trees, group retention of 0.36 ha intact patch, and gap-cutting. After harvesting, fir seedlings were replanted in the harvested area.

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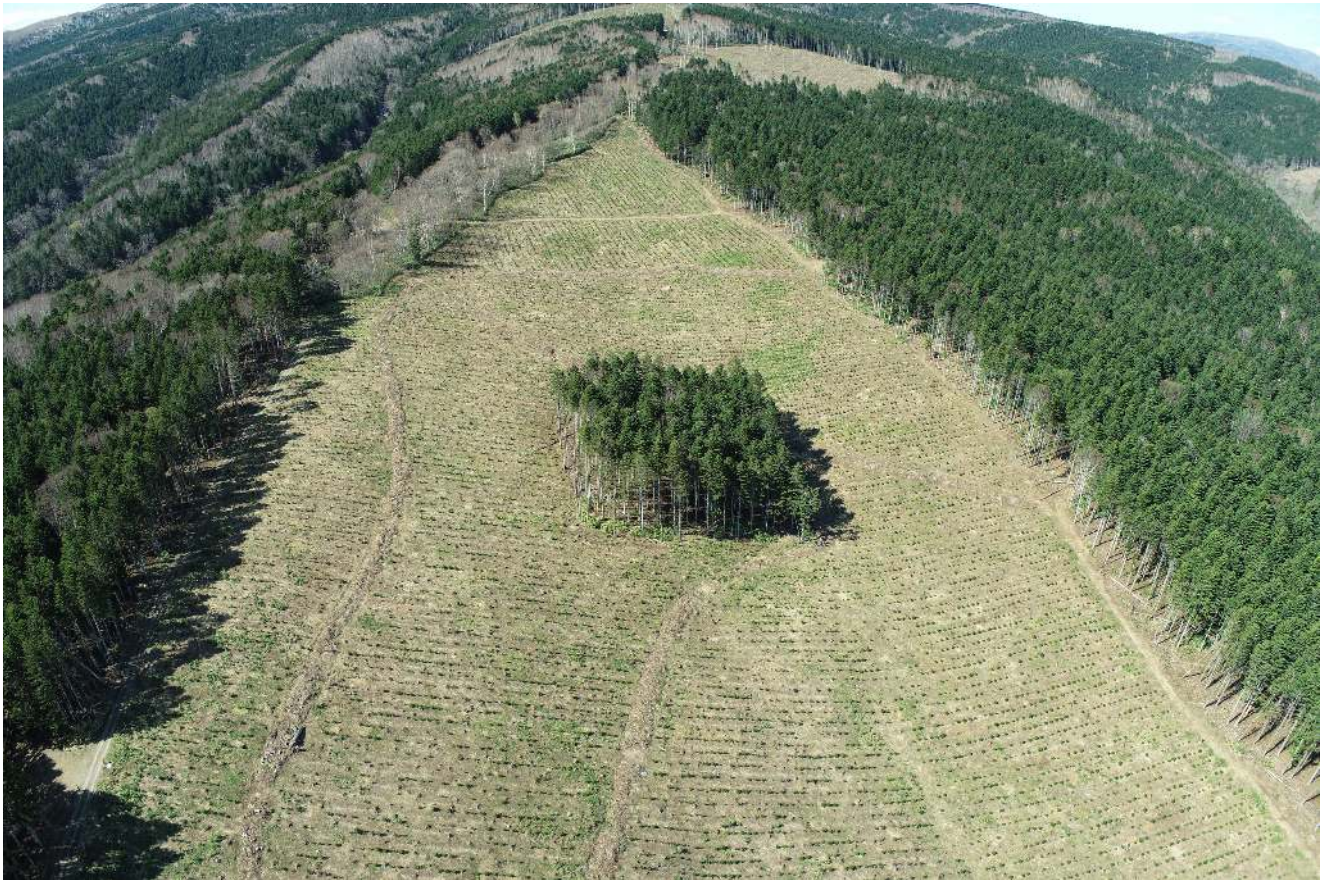


Photo 1. Group retention left a single 0.36 ha (60 × 60 m) intact patch at the center of the stand. In the harvested area, there were planted fir trees of 6 years of age. Photo credit: Satoshi Yamanaka.



Photo 2. Mid-level dispersed retention left 50 broad-leaved trees per ha and bare ground was observed after site preparation. Photo credit: Masato Kanno.



Photo 3. Low-level dispersed retention left 10 broad-leaved trees per ha. Planted fir trees were 5 years old and *Eupatorium glehnii* flourished on the ground. Photo credit: Satoshi Yamanaka.



Photo 4. High-level dispersed retention left 100 broad-leaved trees per ha. Planted fir trees were 7 years old. Shrubs, dwarf bamboos, grasses and herbs covered the floor. Photo credit: Satoshi Yamana.



Photo 5. Some large trees of Japanese lime (*Tilia japonica*) were retained during the harvesting, but one of them fell down 6 years after the harvesting. Photo credit: Satoshi Yamanaka.

These photographs illustrate the article “Sharing land via keystone structure: Retaining naturally regenerated trees may efficiently benefit birds in plantations” by Yuichi Yamaura, Akira Unno, and J. Andrew Royle published in *Ecological Applications*. <https://doi.org/10.1002/eap.2802>