

Implications of strip and group cutting systems in conifer plantations in Japan.

Nobuya Mizoue (Kyushu University, Japan; mizoue@agr.kyushu-u.ac.jp), Satoshi Ito (University of Miyazaki, Japan; s.ito@cc.miyazaki-u.ac.jp) and Akio Inoue (Tottori University, Japan; iakio@muses.tottori-u.ac.jp). There have been increasing concerns on alternative silvicultural systems to a large-scale clear-cutting system in many countries. In Japan, plantation forests occupy about 10 million ha, 40% of forested lands, most of which are simple even-aged conifer forests of sugi (*Cryptomeria japonica*) or hinoki (*Chamaecyparis obtusa*). Applying group and strip cutting system are being considered as an effective way to transform simple even-aged to uneven-aged plantation forests. These systems had been originally adopted in the 1940s in Hokkaido, northern Japan, in order to encourage the early growth of planted trees and to prevent frost damages. In 1970s, they were applied to conifer plantation in the central and southern Japan in order to maintain scenic beauty from sightseeing roads in mountainous terrain by arranging small logging areas. What advantages strip and group cutting systems in sugi and hinoki plantations have in temperate regions, southern Japan in terms of sustainable forest management concept? In this paper, we re-evaluate the small-scale group and strip cutting systems in terms of tree growth and biodiversity, based on case studies in old group and strip cutting sites of sugi and hinoki. Then we propose spatial arrangement methods of cutting areas based on case studies.