

**LONG-TERM RECOVERY OF VEGETATION COMMUNITIES  
AFTER HARVESTING IN THE COASTAL TEMPERATE RAINFORESTS OF  
NORTHERN BRITISH COLUMBIA**

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**Abstract**

We sampled second-growth forests ranging in age from 28-98 years and compared them with old-growth forests to quantify rates of terrestrial vegetation recovery following harvesting on the north/central coast of British Columbia. Species richness approximately doubles, while Simpson's index of diversity increases from 0.81-0.91, from young to old forests. NMDS ordinations showed differentiation, with some overlap, of old-growth and second-growth forests and a fairly strong correlation of stand age with plot scores, driven by plant species presence and cover. Vegetation succession following logging disturbance is driven primarily by pre-disturbance species composition; most species found in the young forests are present in old forests and the higher species richness typical of old-growth is largely due to the establishment of additional cryptogam and herb species of low cover and constancy. Significantly higher cover of shrub, herb, and bryophyte species differentiates old forests from second-growth forests. 41-100 year old forests average 63-73 percent similar (depending on site type) to old-growth forests based on species presence/absence and 53-58 percent similar, based on species cover. The scarcity of western red cedar (*Thuja plicata*) in second-growth stands is of particular concern because of the high ecological, cultural, and economic importance of this tree species.