

Title: Evaluating the potential for increased forage productivity in strip-thinned silvopastures.

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Abstract

Forested ecosystems are essential in supporting the majority of terrestrial species on Earth. Forest products contribute significantly to the global economy as well as contributing in sequestering carbon as part of climate change mitigation.

In British Columbia, Canada, promotion of reforestation activities in land use policy has been emphasised with little consideration towards the potential value of forage for livestock and wildlife. We explored an opportunity to integrate the forest and ranching industries in order to enhance both forestry and grazing practices so that forest production and understory forage productivity can be fully realized.

Silvopasture, which is the complementary use of land for forestry and range productivity for livestock, is a practice that integrates these two sectors. Previous research has shown that a successful integration of forage, cattle and timber management can provide economic, social and environmental benefits such as increasing forage yield and quality, enhancing soil carbon storage, and increasing soil water availability.

A forest strip thinning harvest method, with strips width ranged between 10 m, 15 m and 20 m was used in three adjacent forest sites located in Goudie, West Kelowna, British Columbia situated at an elevation range between 1340 – 1400 m.

Baseline data including tree stand density, understory plant species composition, and soil carbon and nitrogen was collected pre-harvest, June 2018. An agronomic seed mix including orchard grass, meadow brome, intermediate wheatgrass, and white clover was added October 2018.

Future research will focus on monitoring tree stand density, forage quality and quantity as well as soil carbon sequestration.

Key words: strip thinning, forest management, forage productivity, climate change, carbon sequestration.