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Stand structure and growth of a 115-year-old Japanese larch plantation in the University of Tokyo Hokkaido Forest

Toshiaki OWARI[1], Masaki MATSUI[1], Noriyuki KIMURA[1], Nozomi OIKAWA[1] & Jeyavanan KARTHIGESU[2]

[1]The University of Tokyo Hokkaido Forest, Graduate School of Agricultural and Life Sciences, The University of Tokyo, JAPAN, owari@g.eccc.u-tokyo.ac.jp; matsuima@uf.a.u-tokyo.ac.jp; kim@uf.a.u-tokyo.ac.jp; nozomi@uf.a.u-tokyo.ac.jp
[2]Department of Global Agricultural Sciences, Graduate School of Agricultural and Life Sciences, The University of Tokyo, JAPAN, karthigesu-jeyavanan543@g.ecc.u-tokyo.ac.jp

Abstract

Japanese larch (*Larix kaempferi* (Lamb.) Carrière) is a major but non-native plantation species in Hokkaido, northern Japan. Due to its relatively short planting history, data on the stand and growth parameters of old larch plantations is scarce in the region. The University of Tokyo Hokkaido Forest (UTHF) has one of the oldest larch plantations in Hokkaido, planted in 1908. We examined the stand structure and growth process of the larch plantation 115 years after planting. A total of 134 planted larch trees in 1.02 ha were measured twice in 2007 and 2022. At 115 years of age, mean DBH and mean tree height were 60.7 cm, and 35.2 m, respectively. DBH and tree height increased steadily in the last fifteen years, while tree height growth was partly suppressed probably due to snow damage. We also estimated the stand parameters of the larch plantation using unmanned aerial vehicle photogrammetry.