

Aspen Encroachment on Meadows of the North Rim, Grand Canyon National Park¹

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Abstract—Composition and structure data were analyzed to determine the characteristics of trees encroaching on the montane meadows and subalpine grasslands of the North Rim, Grand Canyon National Park. Tree invasion in the 1900s showed a pattern of increasing establishment, with quaking aspen comprising the majority (52%) of encroaching trees. Most aspen established in the last 10–20 years, with a mean establishment date of 1982 (mean age = 10 years). Interestingly, meadow encroachment began as early as 1903, followed by a distinct lack of aspen establishment from 1913 to 1933. This 20-year gap in aspen regeneration corresponds with the widely known Kaibab Plateau mule deer population explosion that occurred in the mid 1920s. Meadow encroachment by aspen from 1930–1993 was estimated to be at an average rate of 1.17 m per year.

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