**Introduction**

Jack pine (Pinus banksiana) reaches its southeastern range limit in the eastern half of the Minnesota DNR & Lake Superior regional sections. It is adapted to sandy soils of marginal quality. Historical summaries of forests in this region suggest that jack pine forests and woodlands in these areas may not have had the same serotinous ability as those in the north-central Minnesota and Wisconsin DNR regions. The ability of jack pine to produce serotinous cones (cone serotiny) is a major factor in the development of even-aged recruitment patterns of the species. The low frequency of cone serotiny observed in jack pine populations may account for the lack of even-aged patterns observed in northern Minnesota forests.

**Methods**

In order to study historical patterns, ten naturally recruited, unmanaged stands with mature tree ages ranging from 50-150 years were inventoried for a variety of ecological and demographic parameters. Stand characteristics such as age, size, number of trees, tree spacing, and canopy height were measured using Ripley’s K function, which is a metric of mean tree spacing.

**Results**

The study revealed that jack pine stands in the central Minnesota region have developed along a long-term sequence of recruitment patterns. These patterns include high, low, and intermediate recruitment densities, as well as extended recruitment windows (ERWs). The extended ERWs were most often a result of an understocked initial regeneration pulse followed by additional jack pine recruitment.

**Conclusion**

The results suggest that management of jack pine stands in the central Minnesota region should include strategies that encourage extended recruitment windows and maintain sufficient jack pine seed production. This may include the use of long-term seed supplies and source of structural diversity. Future research should focus on developing adaptive management strategies to ensure the long-term sustainability of jack pine stands in the region.