

**Background:** The possible effects of climate change on sex allocation of a species have recently emerged as a topic of interest, relative to population sustainability via natural regeneration. Also, the universality of pollen limitation for reproduction and how climate may influence it in different taxonomic groups remain to be explored.

**Aims:** The aim of this study was to examine how climate fluctuation may affect sex allocation in *Pinus palustris*.

**Methods:** We used a long-term observational data on *P. palustris* (1957–2014), including pollen, female conelets and cone production.

**Results:** We found that, unlike cone production with its ca. 3-year cycle, (1) pollen (male) and unfertilised conelet (female) production did not exhibit any temporal cycles, (2) pollen and unfertilised conelet production showed lower variation than cone production, (3) pollen and unfertilised conelet production were positively correlated to one another and to final cone production, (4) an optimal male-to-female sex allocation ratio exists for promoting cone production and (5) sex allocation ratio was positively correlated with temperature.

**Conclusions:** Our findings shed new light on both the reproductive ecology and management of *P. palustris* ecosystems under changing climates (e.g., through alteration of pollen density and thus the resulting sex allocation).

