Systematic review of attempts to reinforce *Pulsatilla vernalis* populations

Anneli Sandström, Per Milberg, Brita Svensson

**Introduction & Aim**

Methods used in nature conservation should ideally be evidence-based, but relevant published studies are few or non-existent. Therefore, records made by managers might provide case studies on which to base recommendations.

**Aim:** evaluate the Swedish conservation methods applied to reinforce populations of *Pulsatilla vernalis*, an endangered and enigmatic plant of coniferous forests and heathlands.

**Methods**

- Unpublished data obtained by contacting conservation managers
- Meta-analyses of 115 available cases, analysing and comparing before/after treatment data
- Outcomes analysed were number of clusters, prevalence of flowering, number of flowers, seedling emergence and seedling survival

**Results**

*Burning* → more clusters & increased germination within seed plots (the latter most apparent one year after seeding)

*Mechanical disturbance* → no increase in clusters

Prevalence of flowering and number of flowers unaffected by the treatments

**Conclusions**

*Pulsatilla vernalis* favoured by burning but not by mechanical disturbance.

Unpublished case studies from practical conservation work provided useful insights using evidence-based methods.

We encourage managers to report their findings and them and others to find means to secure data from these potential case studies.

A. Sandström (Corresponding author)  
Biology Education Centre, Uppsala University. sand.anneli@gmail.com

P. Milberg, IFM Biology, Conservation Ecology Group,  
Linköping University. permi@ifm.liu.se

B. Svensson, Dept of Plant Ecology and Evolution, Uppsala University. brita.svensson@ebc.uu.se