

# Effects of forestry on epiphytic lichens in boreonemoral swamp forests in southern Sweden

Johan Molin

## Background & Aim

In boreonemoral forest landscapes, swamp forests are great sources of biodiversity with high numbers of rare species, many of which are now threatened by forestry. Logging practices disrupts the continuity of the forest landscape and patches of swamp forests are left behind in a mosaic-like structure. The edge effects that arise may have great negative impacts on sensitive species.

I investigated the effects of forestry on sensitive lichen species in boreonemoral swamp forests in Östergötland county, southern Sweden.

## Methods

Three separate observational studies were carried out: (I) Comparison of lichen occurrence in 20 swamp forests between 1999-2013, (II) Comparison of lichen abundance in swamp forest areas with and without protective zones and (III) spatial distribution analysis of the sensitive lichen *Menegazzia terebrata* in swamp forests of different disturbance history.

## Results

(I) The majority of swamp forests were affected by forestry and showed decreases in lichen and host-tree occurrences. (II) Lichen abundance seemed to decrease in areas of swamp forests bordering clear-cuts but not in areas bordering protective zones. (III) The sensitive lichen *Menegazzia terebrata* was more likely to occur in the interior of sites, more prominently so in sites exposed to abrupt edges.

## Conclusions

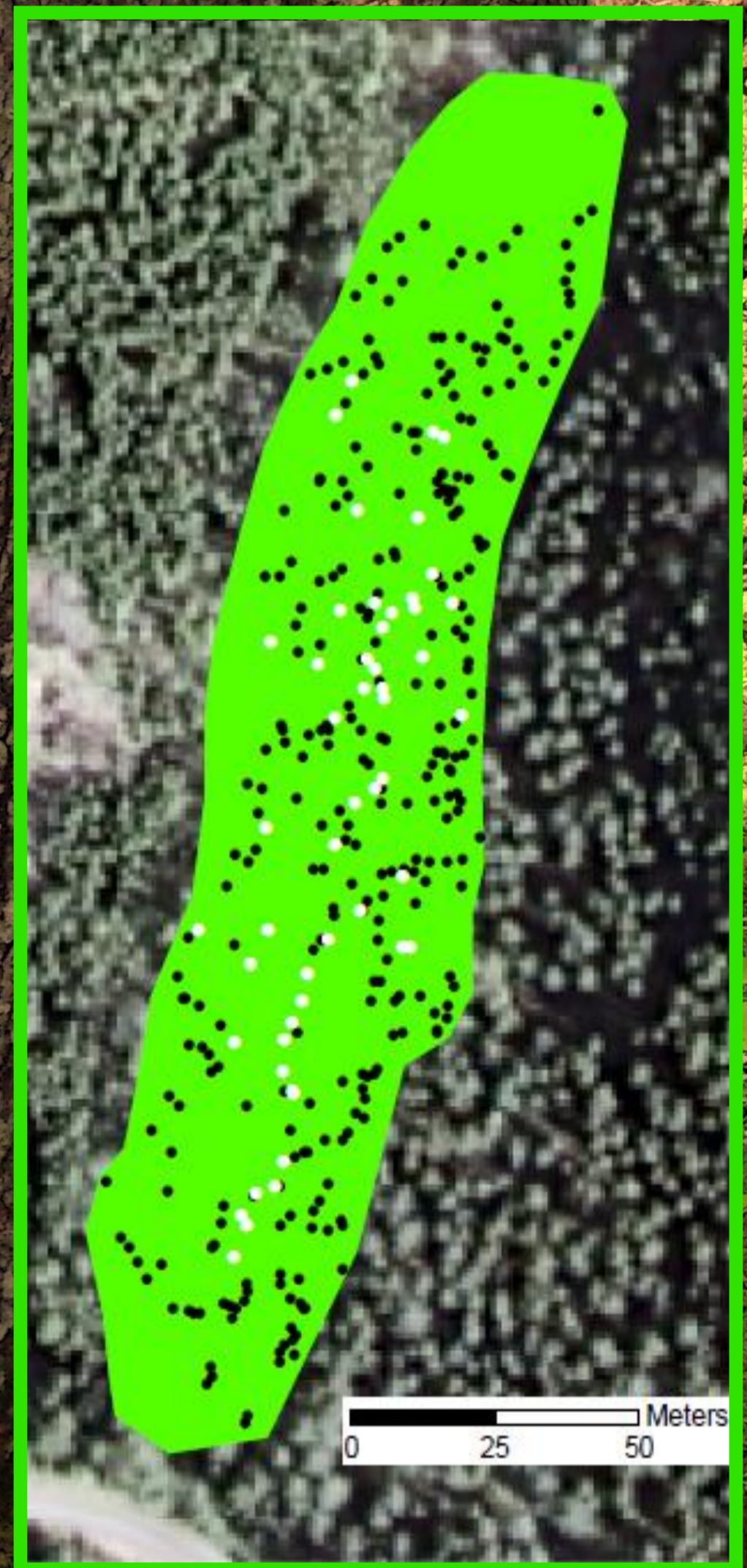
Preventive measures such as protective zones are important in protecting sensitive forest ecosystems. Refraining from implementing such preventive measures may cause these valuable and unique forest ecosystems to vanish completely from the forest landscape.



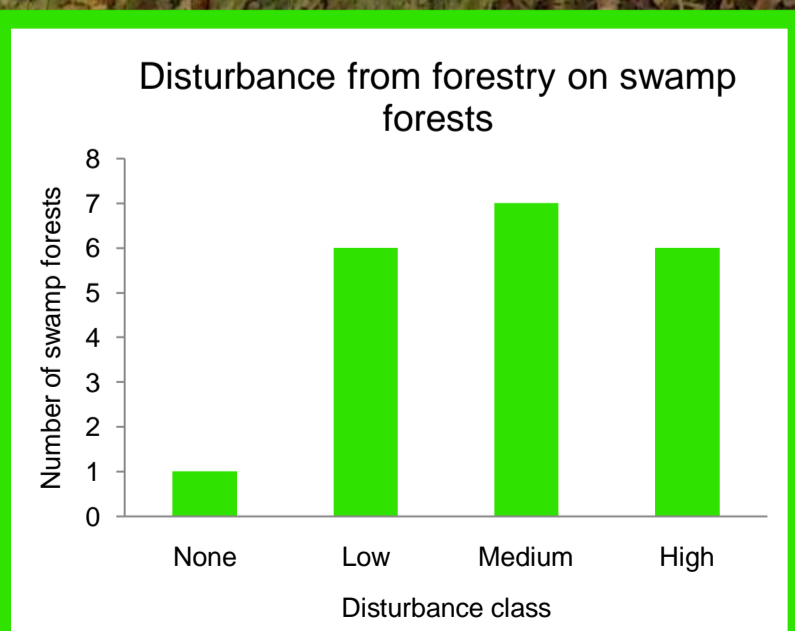
Lichen abundance was surveyed in areas bordering protective zones (black transects) and clear-cuts (white transects).



The sensitive lichen *Menegazzia terebrata*



Spatial distribution of *M. terebrata*. Green polygon = swamp forest extent, white dots = lichen host alders, black dots = non-host alders



Only one out of twenty swamp forests had been totally unaffected by forestry since 1999



Johan Molin  
johan.e.molin@gmail.com