

# WOOD PASTURES TO PREVENT SQUIRREL DAMAGE

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**Introduction:** The Burnham Beeches nature reserve in Buckinghamshire, UK, boast a large number of *Fagus* pollards. It is one of very few places in Europe where this technique of polling beeches still exists. Since a few decades, these trees suffer severe damage caused by the grey squirrel (*Sciurus carolinensis*), an invasive species in English forests since the early 20<sup>th</sup> century. Intensive (but expensive) programs to fight this pest exist, but mostly with a focus on reducing squirrel population densities, rather than preventing gnawing damage to trees.

**Aim:** The Burnham Beeches forest consists of several different types of woodland and forest, with some big differences in management. This study examines if there is a relationship between the woodland management and squirrel damage. If there is proof that some parts of the area show less squirrel damage, the management as in these parts could be suggested as a measure to prevent the damage.

**Materials and Methods:** In Burnham Beeches, 252 *Fagus sylvatica* pollard trees were identified. For these trees the most common tree properties and location coordinates were recorded, as well as the intensity, distribution and overall amount of squirrel gnawing damage. After intensive field- and GIS work, statistical factor analysis was conducted on the data.

**Results:** Results show a distinct correlation between the location of the pollards and the squirrel damage. Trees near busy spots in the forest (e.g. the car park) show less damage, but less damage is also noticed in those woodland areas where the beech trees are located further apart. The old cultural landscape called *wood pasture*, a combination of (open) shrub land and woodland with grazing, showed least damage.

**Conclusion:** Of course still other factors (such as tree species preference) need to be investigated on their effect on the squirrel damage, but from this study, managing a natural forest reserve as a wood pasture, may not only conserve some English cultural heritage, it might also be an interesting instrument in the prevention of damage caused by the invasive grey squirrel.

**Keywords:** *beech pollard, gnawing damage, grey squirrel, wood pasture*