Influence of various tree species and characteristics on the abundance of *Synanthedon vespiformis* (Yellow-legged clearwing)

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Introduction

The yellow-legged clearwing, *Synanthedon vespiformis*, is a moth classified as vulnerable in the Swedish Red List. In order to conserve threatened species, it is essential to understand how the species responds to both local and landscape habitat elements.

Aim

Investigate the response of *S. vespiformis* to various habitat elements by relating the abundance of the species to two tree groups with varying characteristics at multiple scales. The scale at which the species responds most strongly was also investigated.

Methods

•102 sex pheromone traps placed around Östergötland, Sweden

•Used a tree database

•28 radii, ranging from 30 m to 6,000 m, used to calculate tree counts around each trap

•Linear regressions used to find the correlation between the abundance of *S. vespiformis* and various habitat variables →

Results

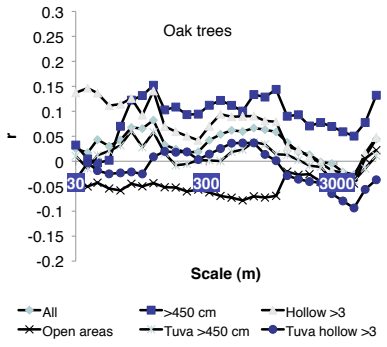

Figure 1. The correlation between abundance of *S. vespiformis* and amount of oak trees with various characteristics at multiple scales.

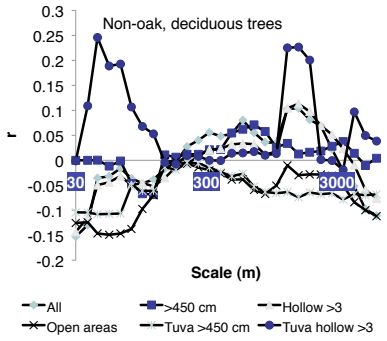

Figure 2. The correlation between abundance of *S. vespiformis* and amount of non-oak, deciduous trees with various characteristics at multiple scales.

No significant correlations ($p < 0.05$ when $r = 0.34$)

Table 1. Habitat variables used to explain abundance of *S. vespiformis*

Tree group	Characteristic
Oak (*Quercus robur)*	Oak
	>450 cm
	Hollow >3
	Open areas
	Grassland areas (TUVA) >450cm
	Grassland areas (TUVA) hollow >3
Non-oak, deciduous (*Ulmus glabra, Malus* sp., *Fraxinus excelsior, Populus* sp., *Carpinus betulus, Fagus sylvatica, Prunus avium, Aesculus hippocastanum, Alnus glutinosa, Tilia* sp., *Acer platanoides, Sorbus intermedia, Sorbus aucuparia, Pyrus communis, Salix* sp.)	Oak
	>450 cm
	Hollow >3
	Open areas
	Grassland areas (TUVA) >450cm
	Grassland areas (TUVA) hollow >3

Conclusions

- ***S. vespiformis* did not respond to any of the habitat variables**
- *S. vespiformis* more polyphagous than expected
- Larvae and adults differ in habitat requirements
- Habitat not clearly defined, land type area more important than number of trees
- Confounding biotic and abiotic factors not taken into account
- Further investigation of habitat requirements and biology of *S. vespiformis* necessary to successfully determine species' response to habitat variables

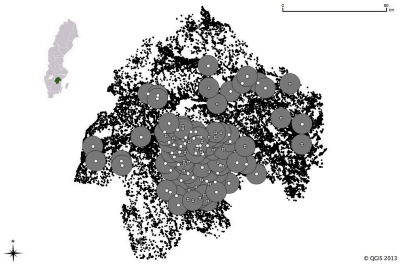

Figure 3. Map of Östergötland, Sweden. Black dots represent trees, large grey circles represent largest radii (6,000 m) used, and small white circles with (occupied) and without (unoccupied) black crosses represent trap locations.