Implications for conservation

- Preserve sites with a high cover of host plants and nectar sources.
- Manage areas to keep them open and sunny, and to prevent grass domination.
- Execute management with care (or late in the season) to not harm *Z. filipendulae* pupae or reduce substrates suitable for pupation.
- Preserve and restore semi-natural grasslands to promote burnet presence on a larger scale.

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Burnet moths: what do they want?

Habitat utilisation of burnet moths (*Zygaena* spp.) in southern Sweden: a multi-stage and multi-scale perspective

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Background

Like many butterflies, burnet moths (Zygaenidae) have experienced long-term declines in abundance and distribution throughout Europe.

In Sweden, six out of seven burnet moth species are currently red listed as VU (vulnerable) or NT (near threatened).

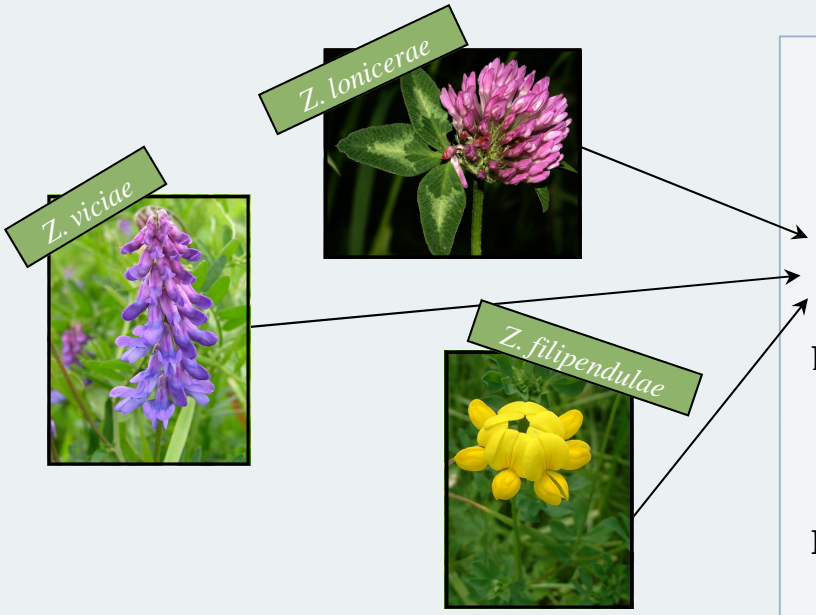
The main reason for this decline is assumed to be a past and present loss of appropriate habitat types, e.g. semi-natural grassland.

To make effective conservation and management plans, the habitat requirements of a species must be known; **for several life stages** as well as at **different spatial scales**.

Aim

Find the habitat requirements of *Zygaena filipendulae*, *Zygaena lonicerae* and *Zygaena viciae*:

- during different life stages and...
- at two spatial scales



Methods

Small scale

Field studies on Öland: examination of habitat variables related to larvae, pupae and adults:

- Larval host plant
- Nectar sources
- Vegetation height
- Cover of bare ground
- Cover of dry grass
- Sun exposure

Large scale

GIS analyses: area of meadows and pastures in 10 x 10 km grid cells in southern Sweden vs. burnet presence/absence.

Results

Small scale

Larval host plant preferences differed between burnet species.

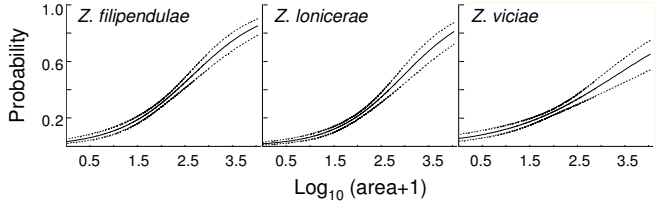
Larvae were surrounded by a higher density of larval host plants than average, and than pupae or adults.

Pupae were found in higher vegetation than larvae or adults.

Adults were found in more sun than average, mainly on red and violet composite flowers, such as *Cirsium* and *Centaurea*.

Large scale

All three burnet moth species were positively related to increasing area of meadows and pastures in southern Sweden.



Probability of finding burnet moths, based on the amount of meadows and pastures in southern Sweden.