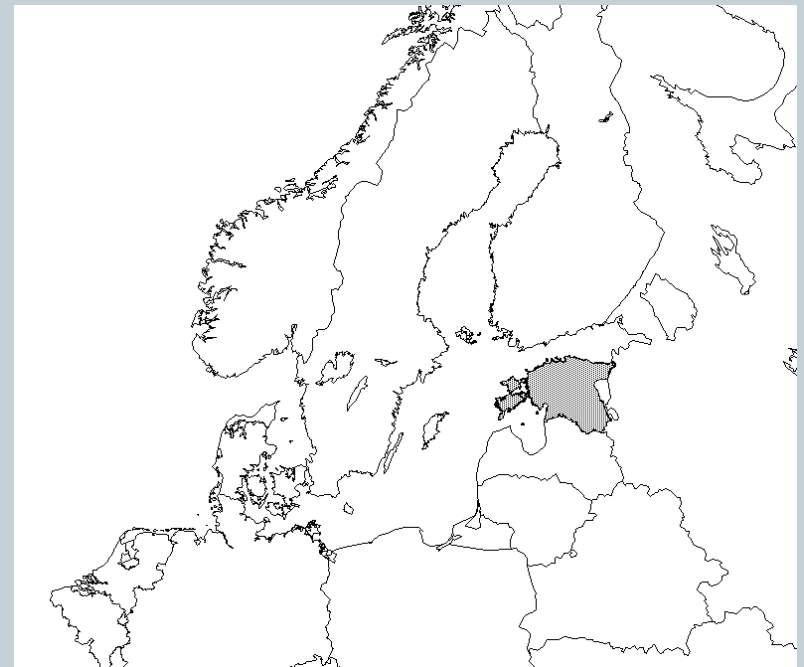


Butterfly work in Estonia



ANU TIITSAAR

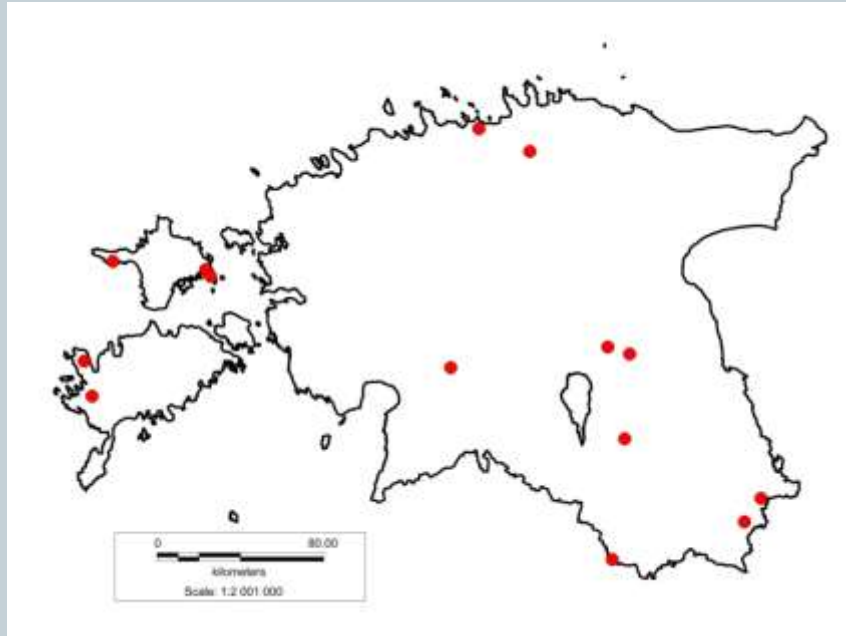


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Butterfly monitoring in Estonia



- Was started with 7 transects in 2004
- 14 transects in 2014
- We rely on hired people – higher data quality and stability.

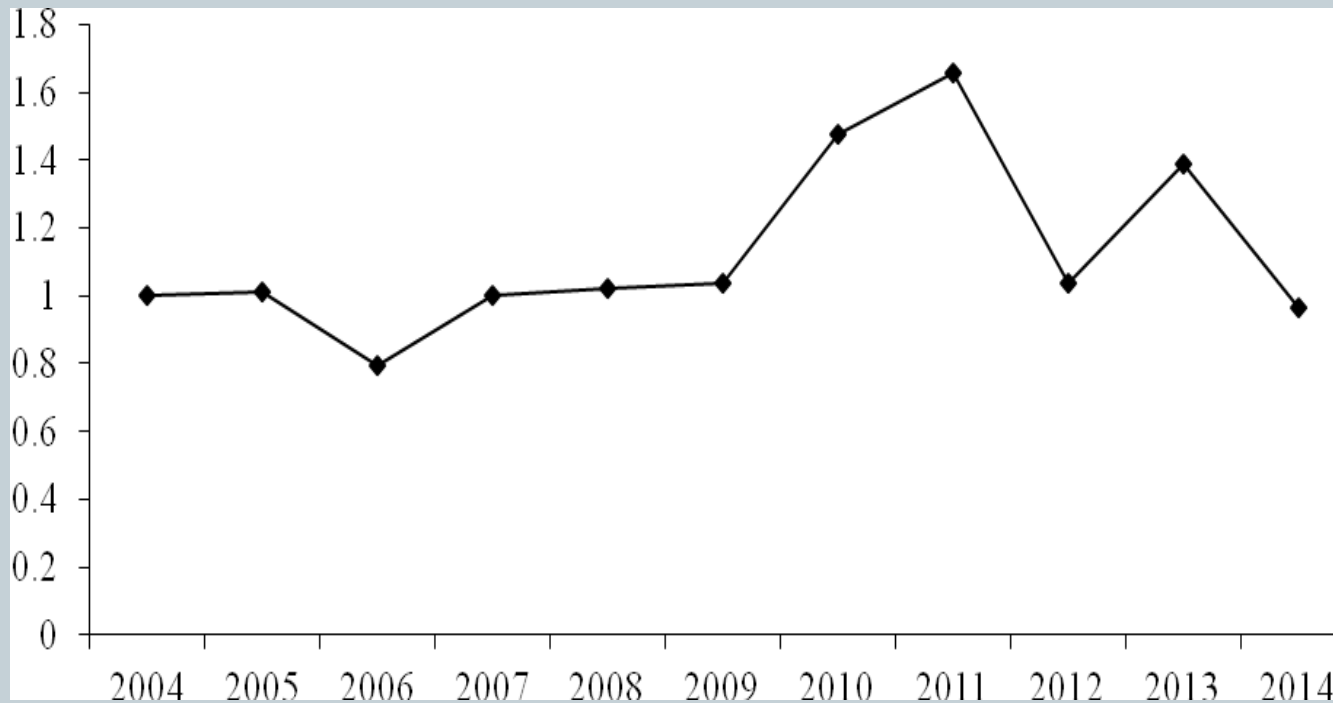


- Erki Õunap
- Anu Tiitsaar
- +field workers

Butterfly monitoring in Estonia



- We now have proof to our 'gut feeling' that everything is indeed OK



- Erki Õunap
- Anu Tiitsaar
- +field workers

Butterfly community studies



FOREST CLEARINGS
CALCAREOUS GRASSLANDS



Butterflies on alvar grasslands



- Alvar grasslands – calcareous thin soiled grasslands
- 1930 – 260 km²; 2004 – 78 km²; remaining in very poor state in 2014 – 8000 ha left, less than 1000 ha managed.



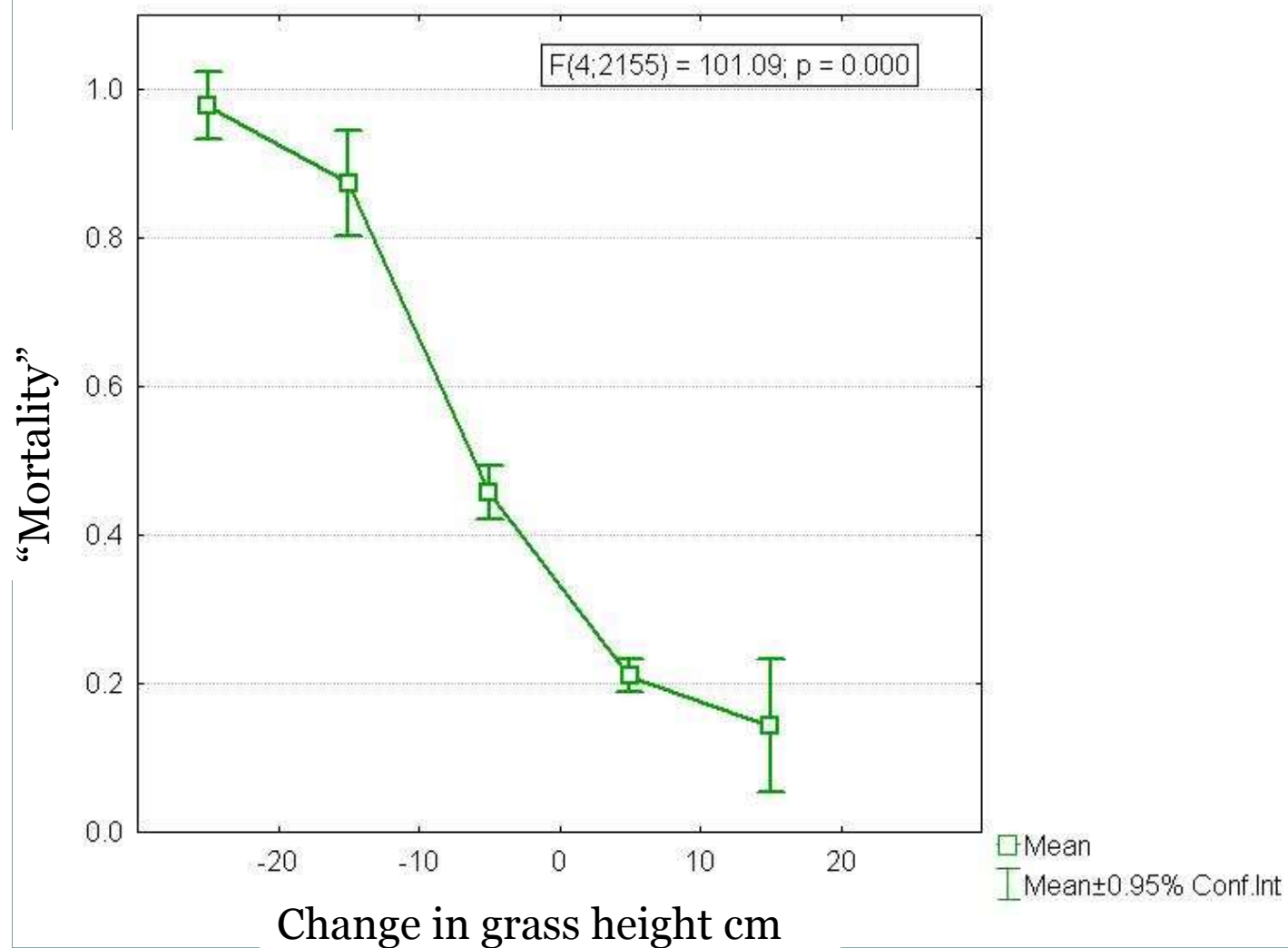
Key habitat



- Key habitat for: *Erynnis tages*, *Hesperia comma*, *Argynnis niobe*, *Hyponephele lycaon*, *Melitaea cinxia*, *Melitea aurelia*, *Phengaris arion*.
- Grazing is suggested tool for managing – but increased grazing pressure means less butterflies



Herbivores as carnivores



Butterflies at forest clearings



- Habitat use and dispersal of butterflies in forested landscapes
- High number of regional species present at forest clear-cuts
- Forest clear-cuts can compensate for the loss of semi-natural grasslands, providing alternative habitats.



- Mari-Liis Viljur
 - Tiit Teder



Descriptive science on “Euro-species”



Lopinga achine



- *L. achine* is polyphagous on various grasses and sedges so that the presence of any particular host species cannot be a critical component of habitat quality



- Lindman, L., Jojansson, B., Gotthard, K., Tammaru, T. (2013) Host plant relationship of an endangered butterfly, *Lopinga achine* (Lepidoptera: Nymphalidae) in northern Europe. *Journal of Insect Conservation*, 17:375-383

Phengaris arion



- All direct observations of the host ant use were limited to the colonies of *Myrmica lonae*
- **dragonfly predation** on adult butterflies could be an essential driver of patch occupancy



- Vilbas, M., Teder, T., Tiitsaar, A., Kaasik A., Esperk, T. (2015) Habitat use of the endangered parasitic butterfly *Phengaris arion* close to its northern distribution limit. *Insect Conservation and diversity*, in press

Lycaena dispar



- Generalist in host and habitat use
- Not endangered, not a good flagship species.
- **Expansive** generalist. Discovered in Estonia in 1946 and now widespread



- Lindman, L., Rmm, J., Saksing, K., Sõber, V., Õunap, E., Tammaru, T. (2014) *Lycaena dispar* on its northern distribution limit: an expansive generalist. *Insect Conservatio and Diversity*, in press

Work in progress



- *Coenonympha hero* – host plant choice probably driven by microclimatic conditions at oviposition sites (Anu Tiitsaar, Ly Lindman, Toomas Tammaru)



- *Euphydryas aurinia* – specialist on *Succisa pratensis* – larvae did not survive on *Plantago* sp (Hendrik Meister, Ly Lindman, Toomas Tammaru)



Miscellaneous



Photo: Urmas Tartes

New species of butterfly for Estonia



- *Maculineaalcon* population discovered in Estonia at 2011 (ecotype: *M. rebeli*)
- Uses *Gentiana cruciata* as host plant
- Work in progress to determine its status and host ant species.



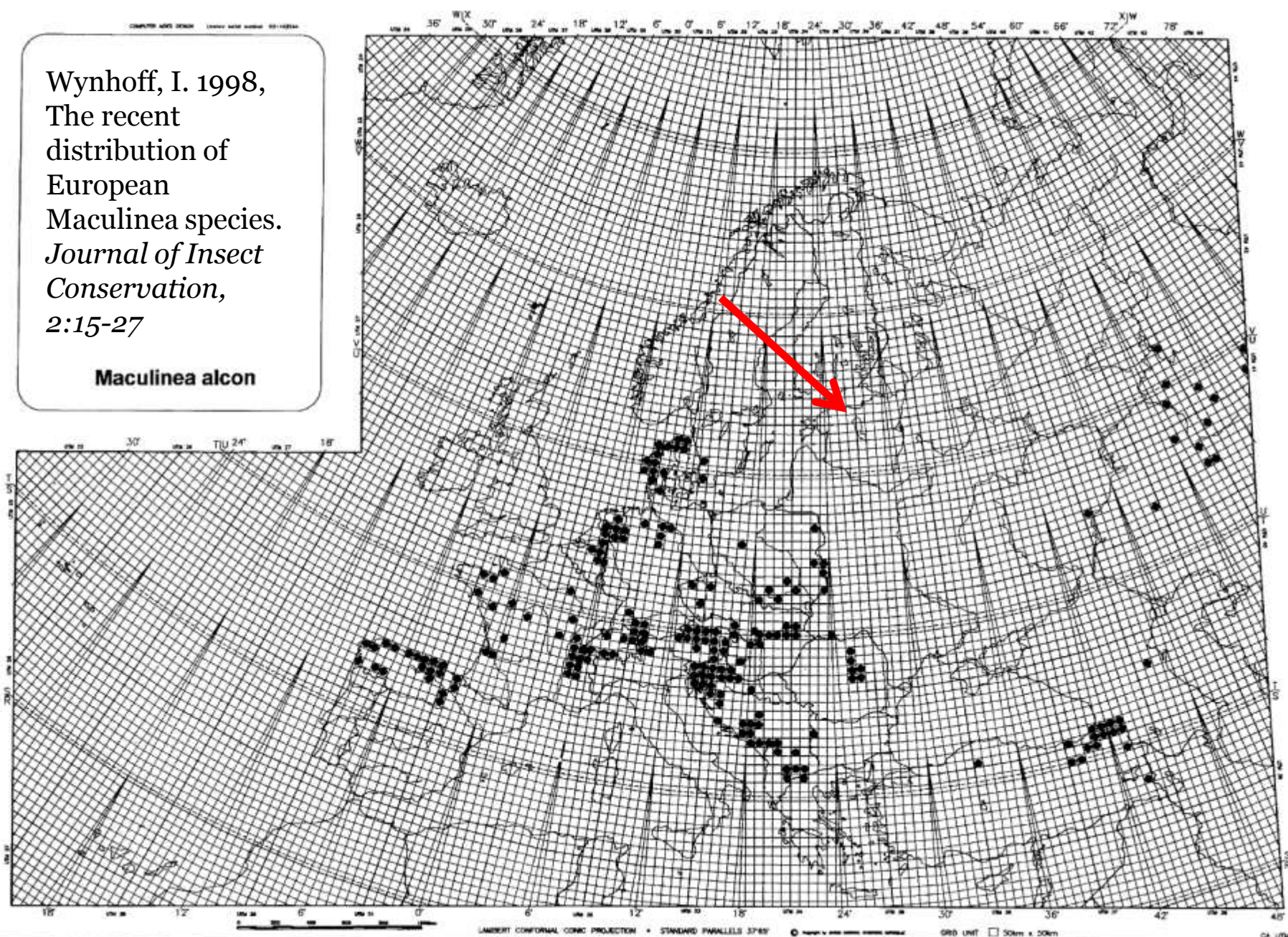
Photo: Urmas Tartes



Photo: Margus Vilbas

Wynhoff, I. 1998,
The recent
distribution of
European
Maculinea species.
*Journal of Insect
Conservation*,
2:15-27

Maculinea alcon



New field guide in Estonian



- **Erki Õunap** and Urmas Tartes
- Last book was published in 1996...





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