Feeding habits of red deer and game damage in the forests of Hungarian Great Plain

Krisztián Katona, László Szemethy,
Katalin Mátrai, Márton Kiss
Szent István University
Institute for Wildlife Conservation
HUNGARY

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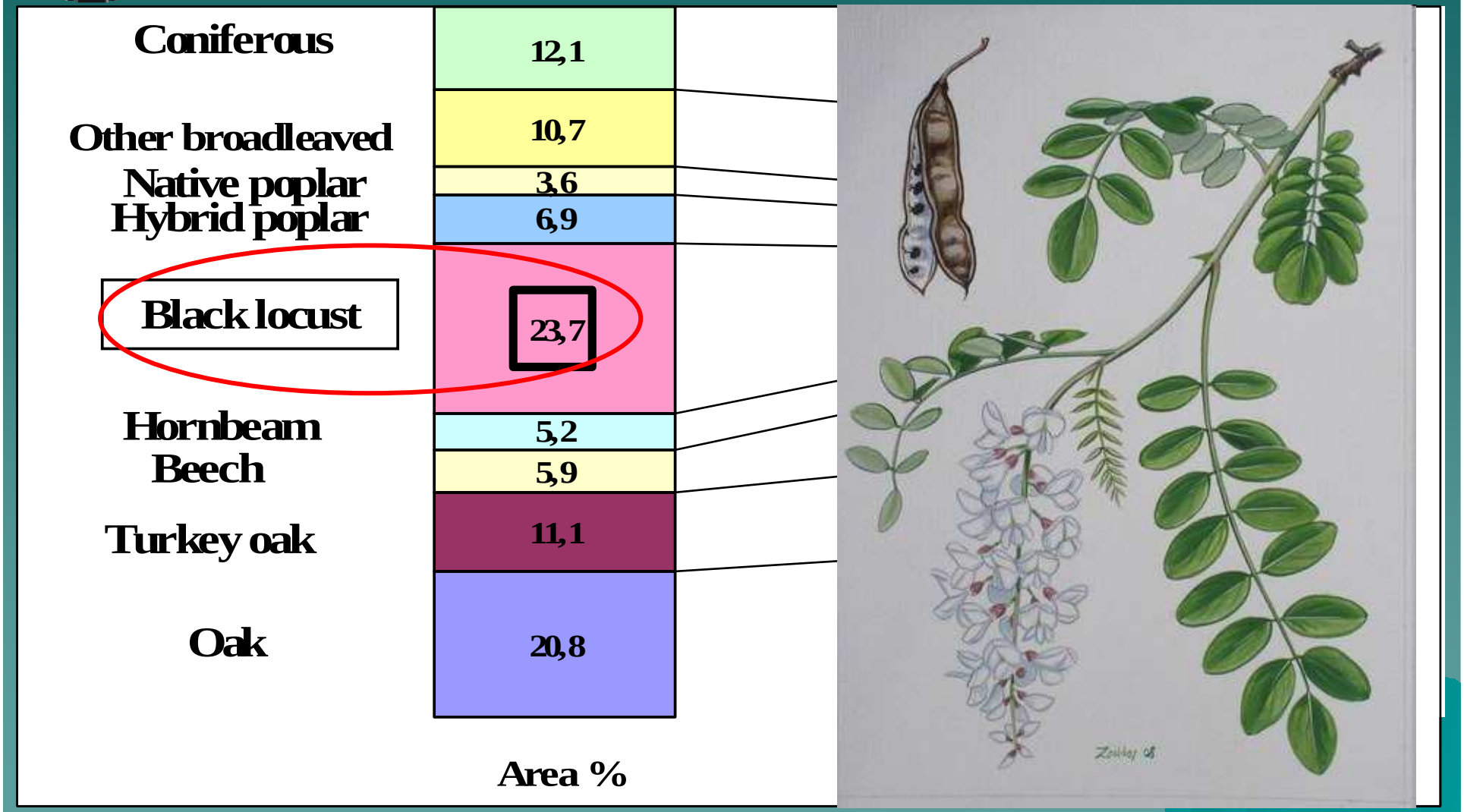
Game damage or climate change?

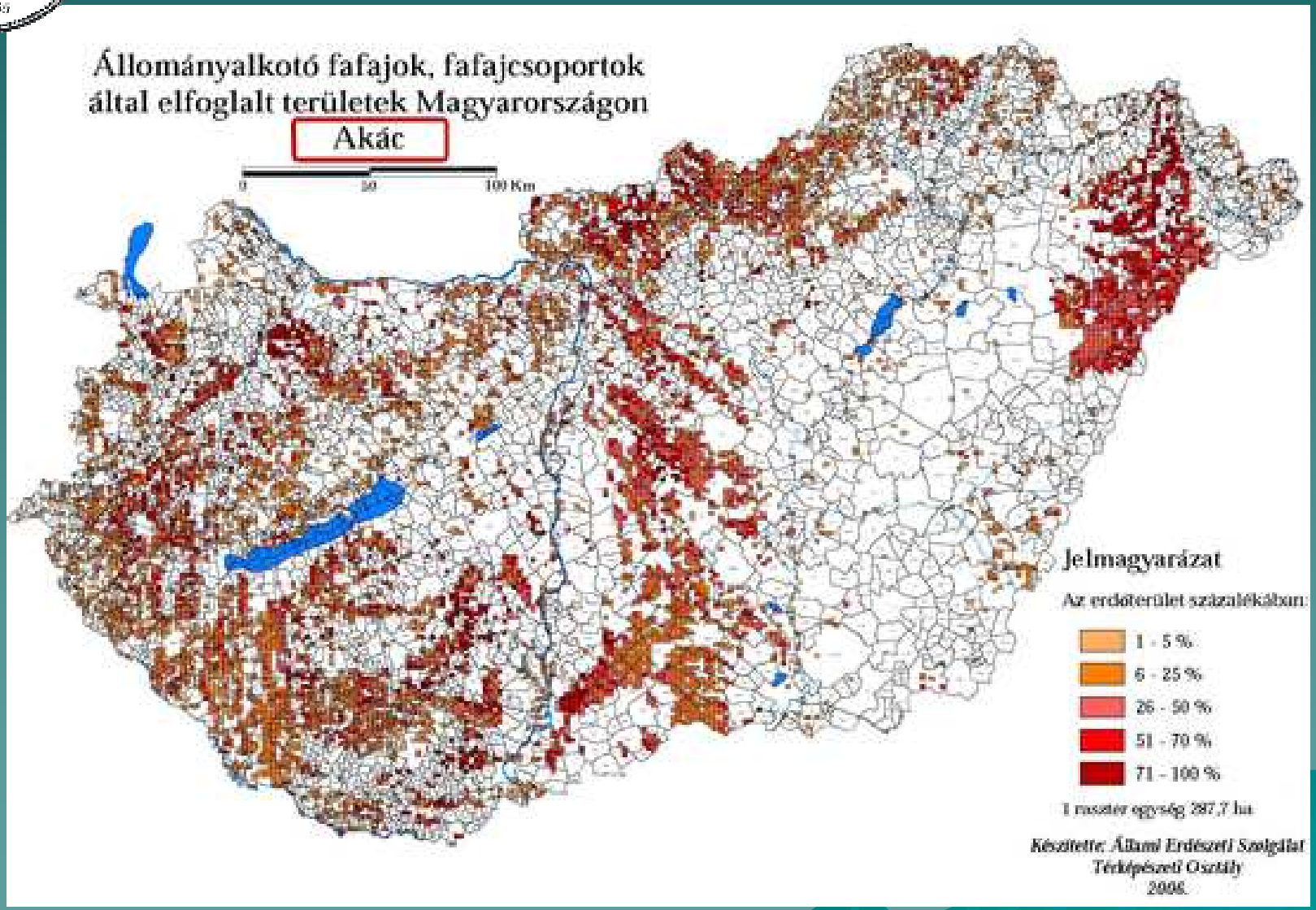
Photo: Krisztián Katona

Black locust dominates Hungarian forested areas (23,7%)



Source: Central Agricultural Office Forest Directorate, HUNGARY
Data as of Dec. 31, 2008.

Areas occupied by black locust in Hungary

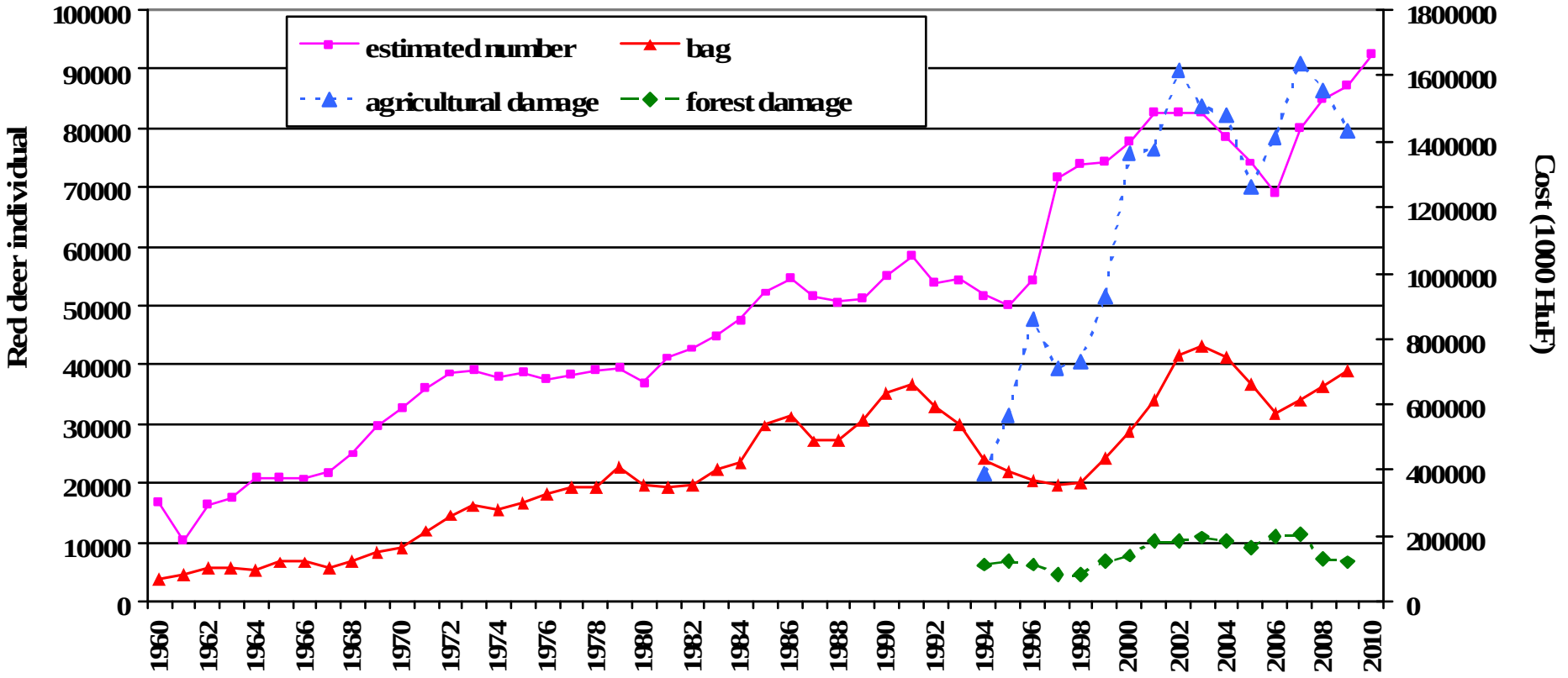


Source: Central Agricultural Office 2006; Zsófia Cserháti, 2011

Black locust plantation

Black locust penetration into juniper forest

Growing deer populations
Serious conflicts about damages



What is consumed, what is browsed?

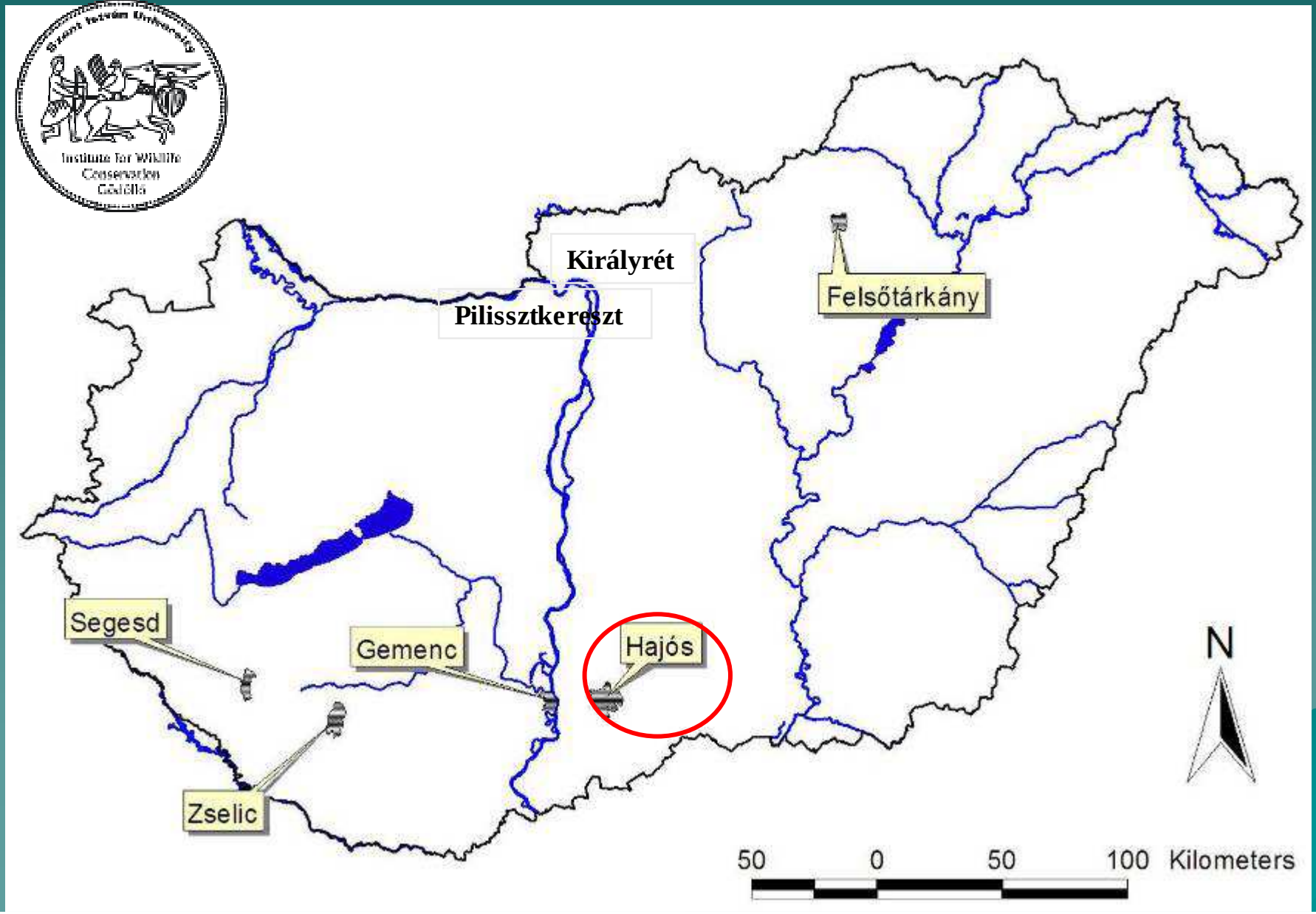
Which forest species are more preferred by wild ungulates (deer)?

- native target tree species (oak)
- non-native target tree species (locust)
- economically non-relevant species

What are the main components of deer diet?

- native target tree species (oak)
- non-native target tree species (locust)
- economically non-relevant species
- supplementary feed

Study areas (Hajósszentgyörgy)



Hajósszentgyörgy –
intensively managed pine and locust forests on sandy soil


Photo: Krisztián Katona


Photo: Krisztián Katona


Photo: Krisztián Katona

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Forest vegetation and browsing

Photo: Gergely Schally

Photo: Krisztián Katona

Institute for Wildlife Conservation Gödöllő

Available and browsed sprouts

Photo: Krisztián Katona

Photo: Krisztián Katona

Microhistological faeces analysis

Digital key for microhistological analysis of herbivore diet

2004

Katalin Mátrai and Krisztián Katona

1000 photos of
320 plant species

Institute for Wildlife Conservation Gödöllő

Indicators of consumption

Photo: Krisztián Katona

Photo: Katalin Mátrai

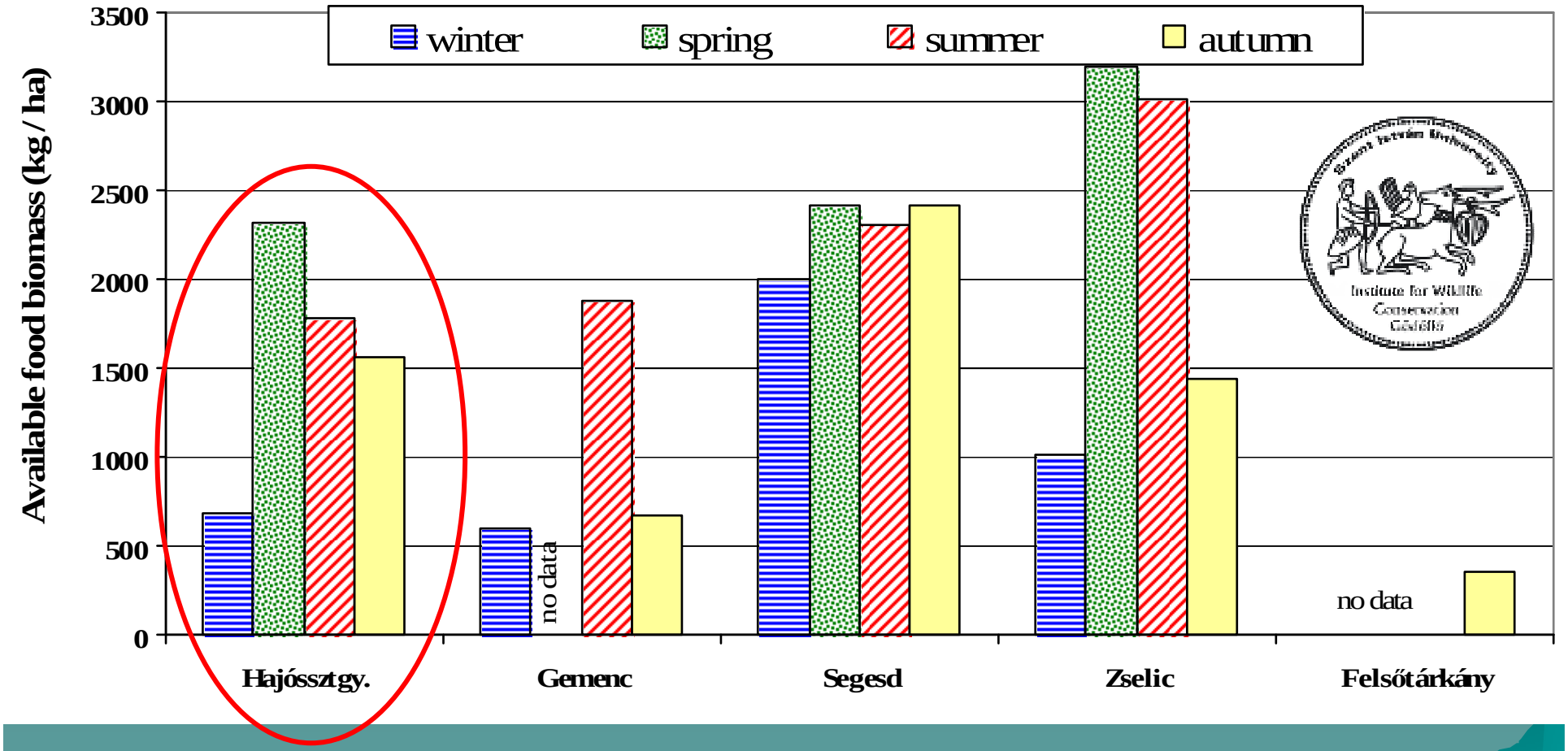
Microscopical analysis

Photo: Krisztián Katona

Macroscopical analysis

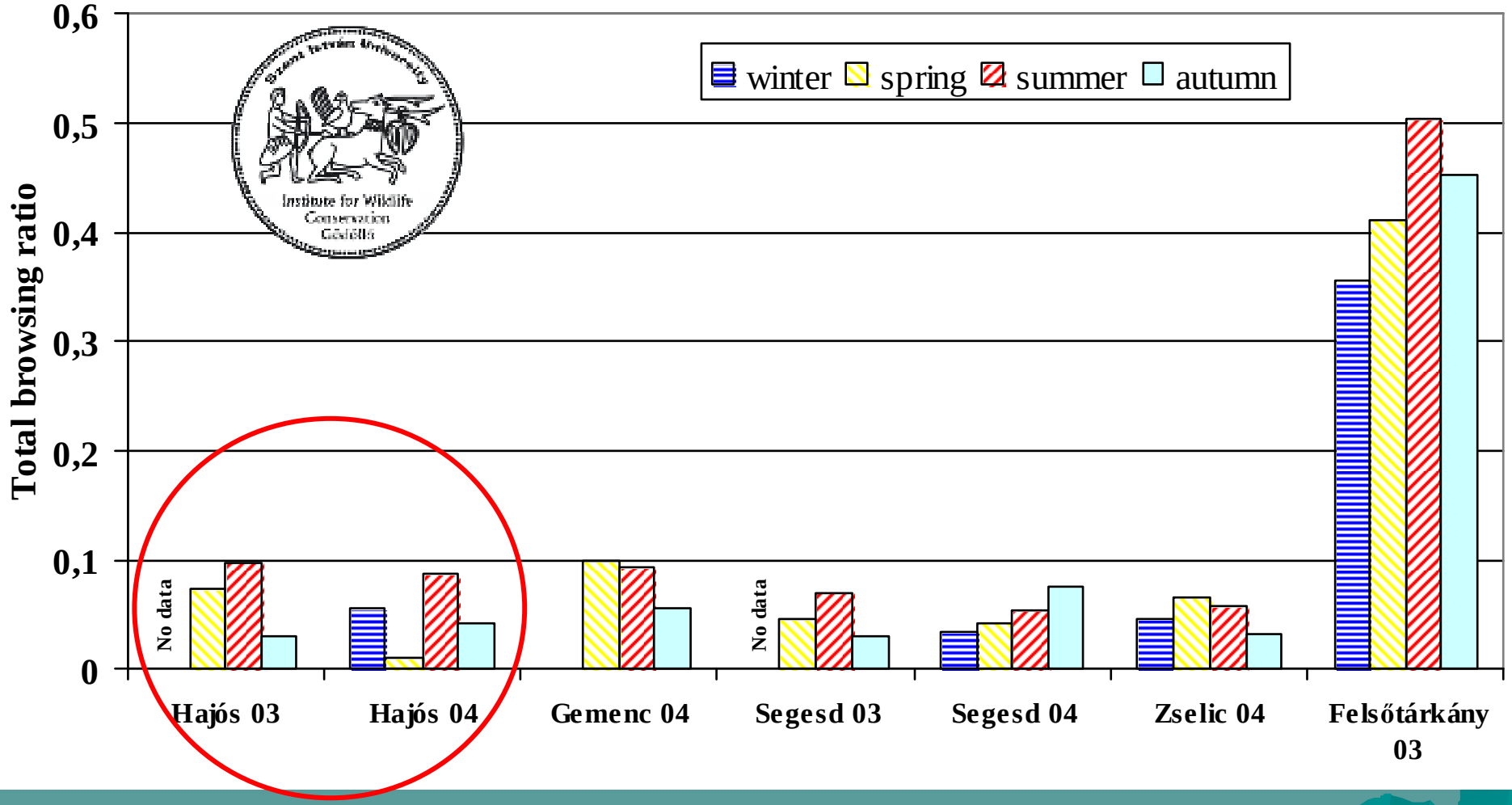
Photo: Katalin Mátrai

Food availability in the understory



Katona, K., Szemethy, L., Nyeste, M., Fodor, Á., Székely, J., Bleier, N., Kovács, V., Olajos, T., Terhes, A. és Demes, T. 2007. The role of understory in the ungulate-forest relationship. Természetvédelmi Közlemények, 13: 119-126.

Browsing in the understory



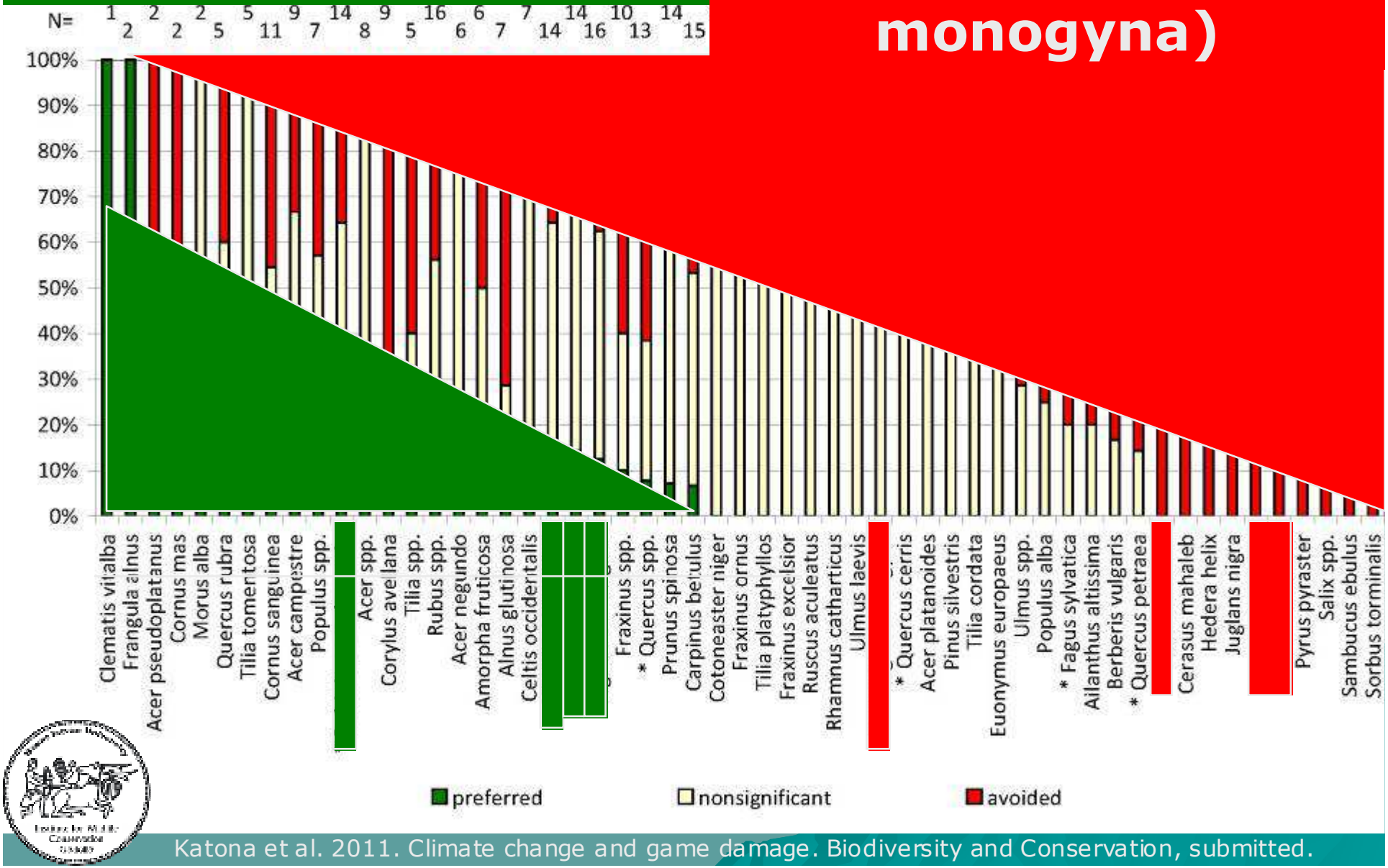
Szemethy, L., Katona, K., Székely, J., Bleier, N., Nyeste, M., Kovács, V., Olajos, T. és Terhes, A. 2004. Comparison of the forage availability and browsing in the understory in different Hungarian forested areas. Vadbiológia, 11: 11-23.

B European privet

(Ligustrum vulgare a)

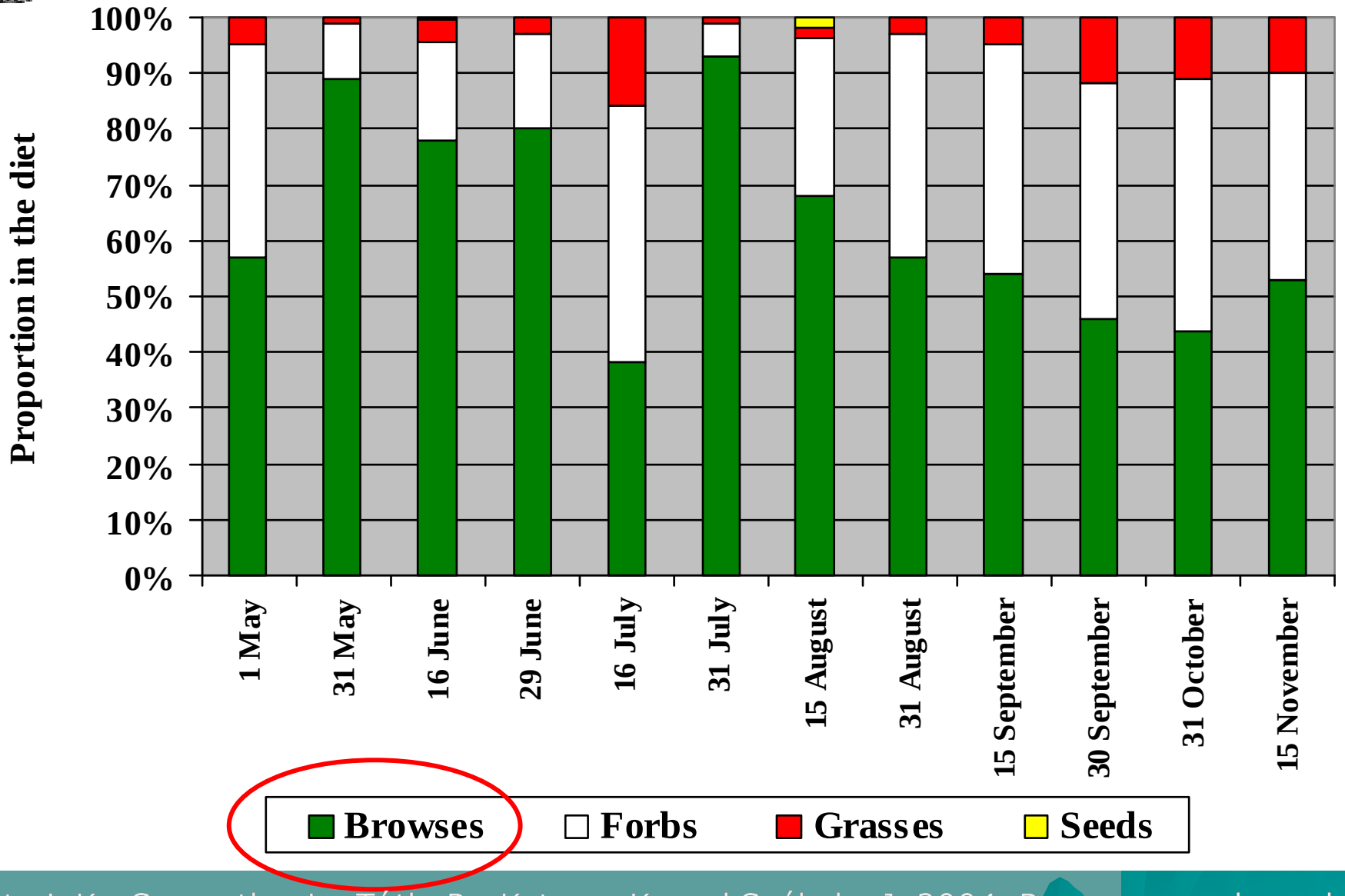
Hawthorn

(Crataegus monogyna)



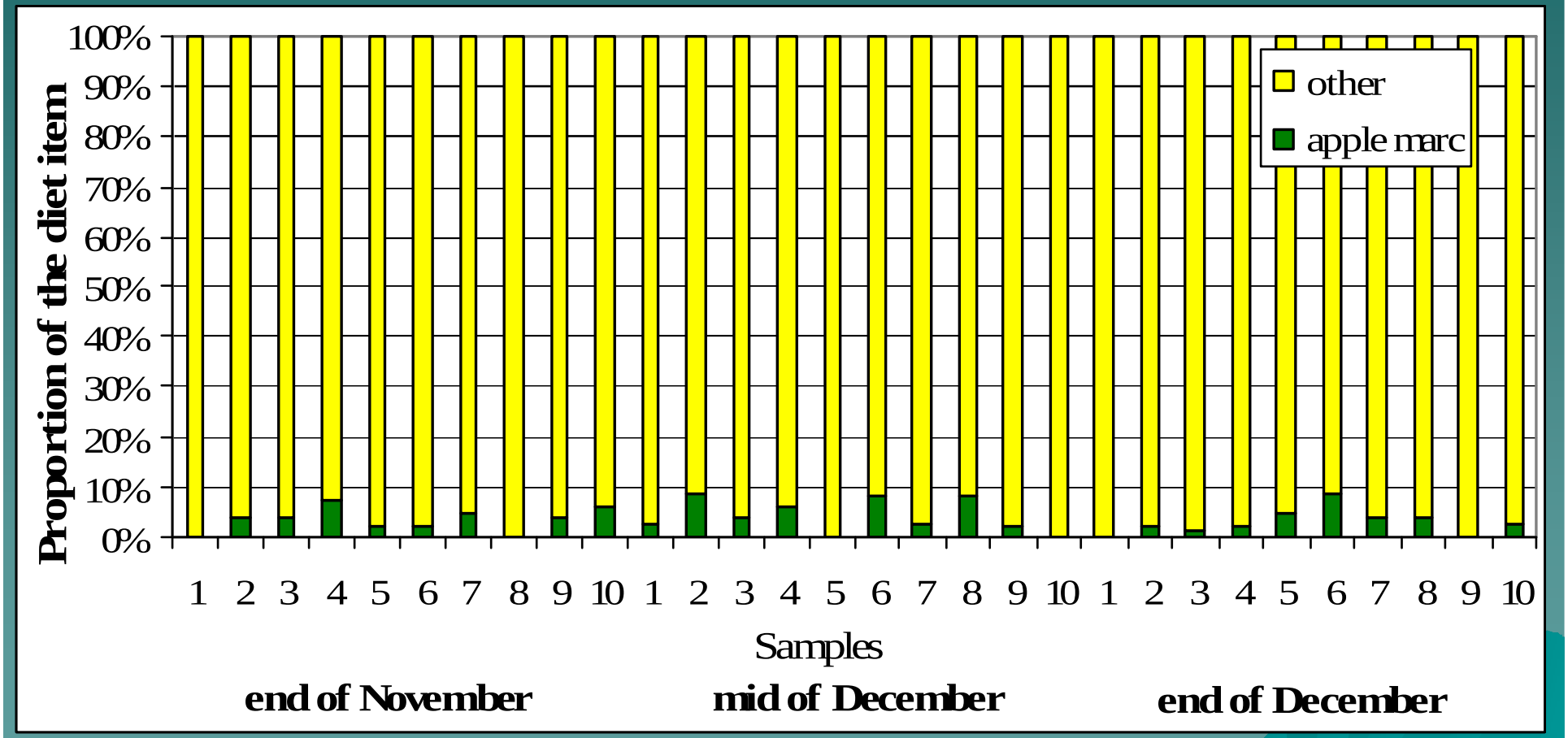
Katona et al. 2011. Climate change and game damage. Biodiversity and Conservation, submitted.

Diet composition of red deer in a forested area
Hajós, 2000



Mátrai, K., Szemethy, L., Tóth, P., Katona, K. and Székely, J. 2004. Resource use by red deer in lowland nonnative forests, Hungary. Journal of Wildlife Management, 68: 879-888.

Proportion of supplementary food in the diet of deer individuals using the feeding plot in Hajósszentgyörgy



Katona, K., Szemethy, L., Gál-Bélteki, A., Terhes, A. and Bartucz, K. 2011. How important is supplementary feed in the winter diet of red deer? A test in Hungary . Wildlife Biology, submitted.

Message

- Pedunculate oak can lose against black locust
  - Drought, drying
- Close to nature forest management (selection cutting and not clear-cutting)
  - Diversity in the forest increases
- Multispecies understory
  - attractiveness of oak species is much less to browsing than that of black locust
- Pedunculate oak can win over black locust
  - selective browsing
- Counteracting impacts:
  - climate change, deer and HUMAN

Acknowledgements

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Thank you for your attention!