



# Expansion of Red Deer and afforestation in Hungary

László Szemethy,  
Róbert Lehoczki,  
Krisztián Katona,  
Norbert Bleier,  
Sándor Csányi

[www.vmi.szie.hu](http://www.vmi.szie.hu)

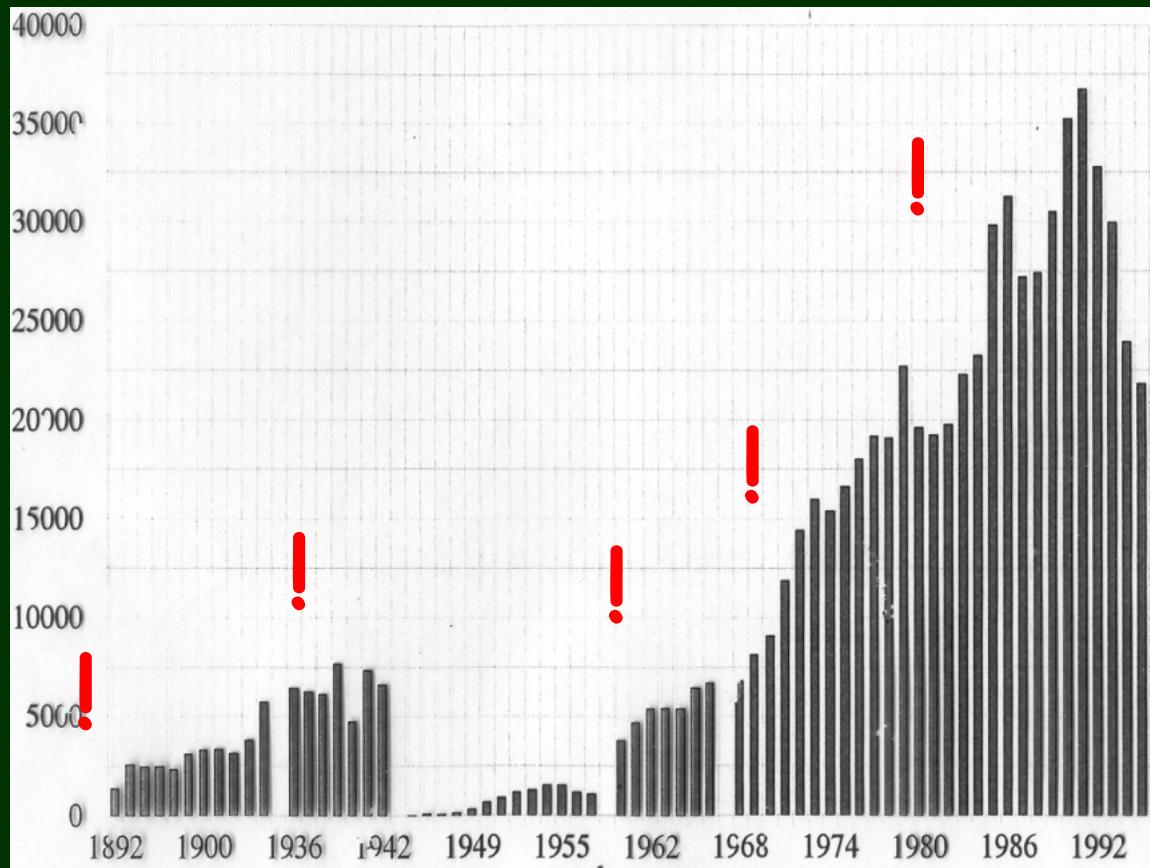


# Background and importance

- large herbivores are „overpopulated”
- increasing game damages in agriculture and forests (?)
- LH population are increasing and expanding
- insufficient management: hunters are responsible



## Population increase: red deer harvest in Hungary 1892-1995



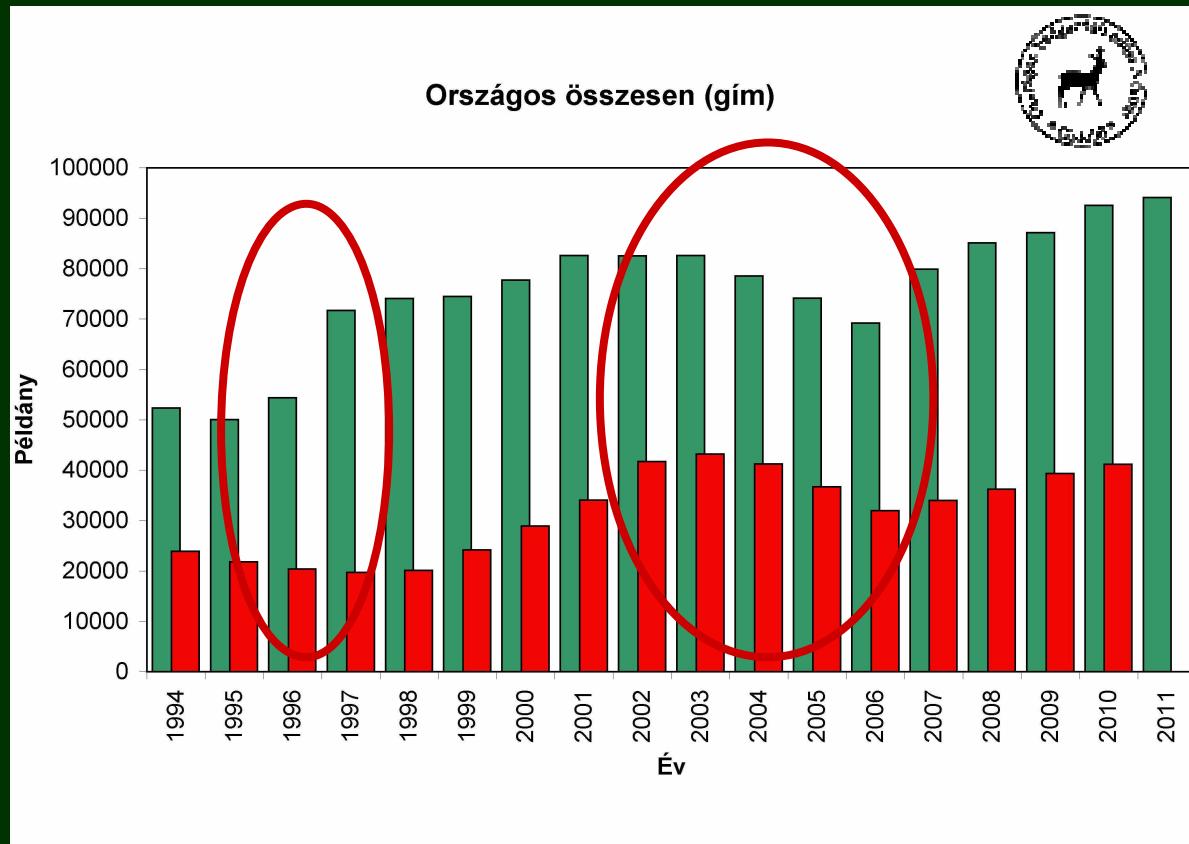
- declaration of overpopulation and necessitating decrease,
- urge control,
- but continuous increase

Tóth, P. and Szemethy, L. 2000. A gímszarvas elterjedési területének változása Magyarországon. Vadbiológia, 7: 19-26.



# Population increase: red deer population size estimation (green) and harvest (red) in Hungary

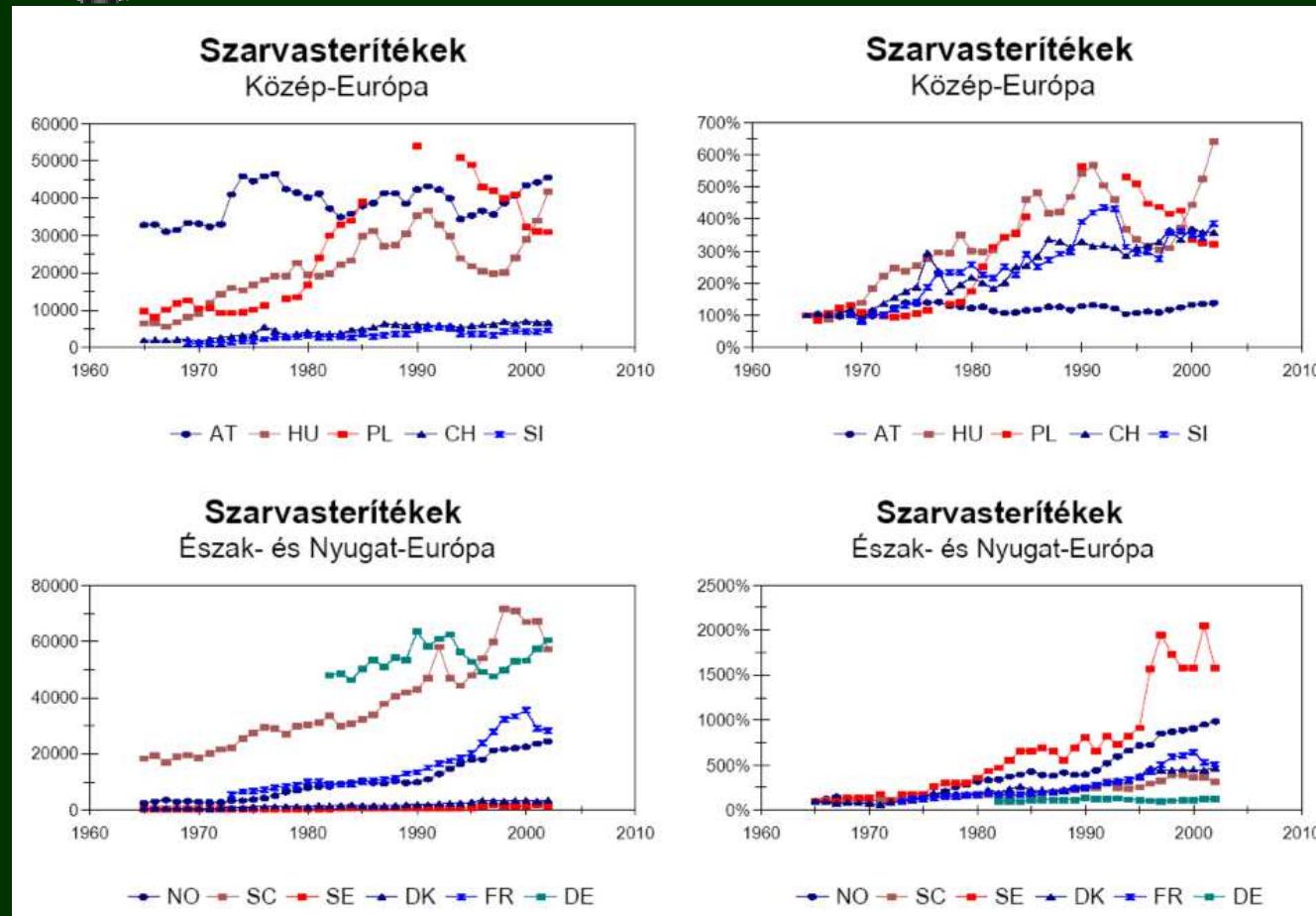
1994-2011



- new hunting system
- pop. control campaign
- result?



## Population increase: red deer harvest in Europe



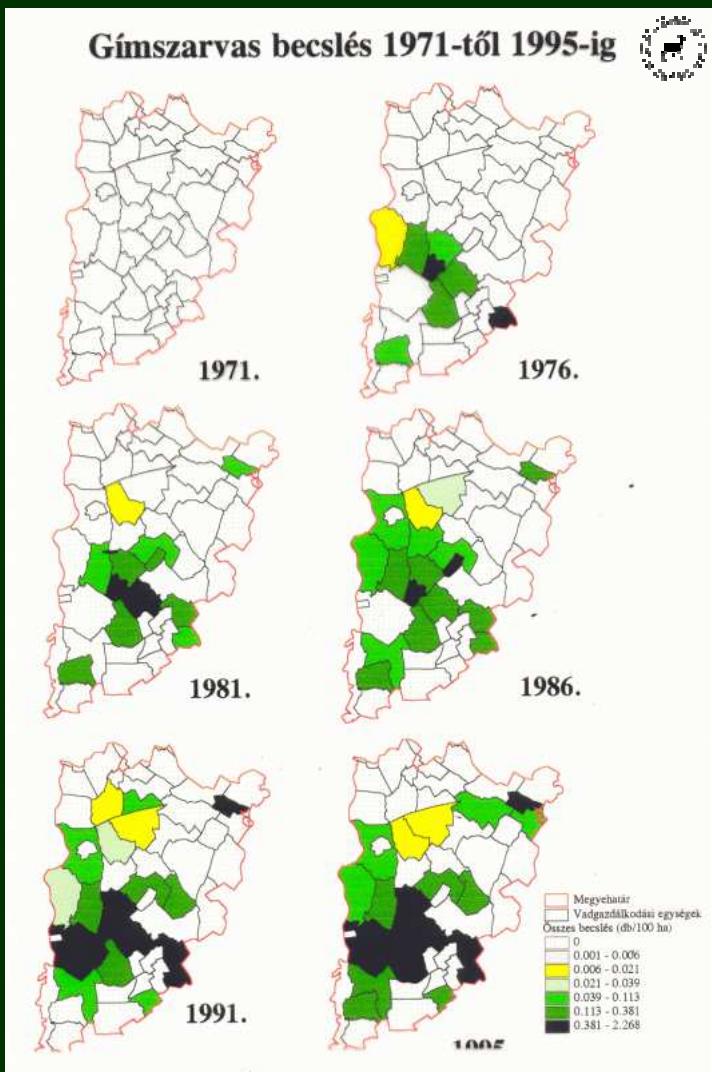
- similar trends in many European countries independently of differences (hunting system, socio-economic conditions, traditions etc)

Milner, J.M., Bonenfant, C., Mysterud, A., Gaillard, J.-M., Csányi, S. and Stenseth, N.C. 2006. Temporal and spatial development of red deer harvesting in Europe: biological and cultural factors. *Journal of Applied Ecology* 2006, 1-14.

Csányi, S. (2009). Nem vagyunk egyedül! A szarvasállomány és a teríték változása az utóbbi fél évszázadban. *Nimród Vadászújság*: 26-29.



# Expansion of red deer population in Bács-Kiskun county 1971-1995

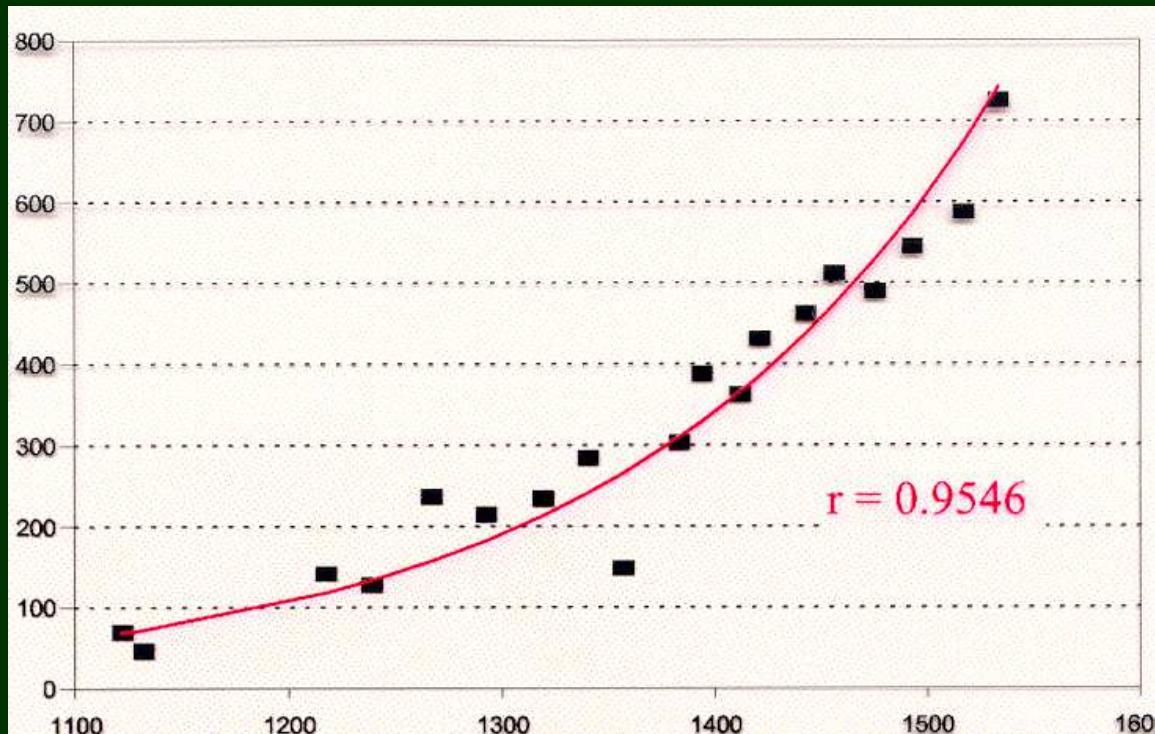


- quick pop. increase and expansion

Tóth, P. and Szemethy, L. 2000. A gímszarvas elterjedési területének változása Magyarországon. Vadbiológia, 7: 19-26.



# Relation of forest cover and red deer number in Bács-Kiskun county

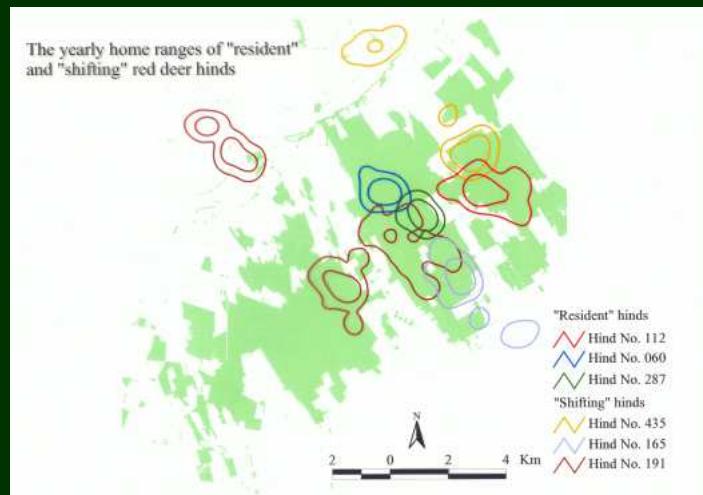


- strong exponential correlation between the forest area and deer pop. size

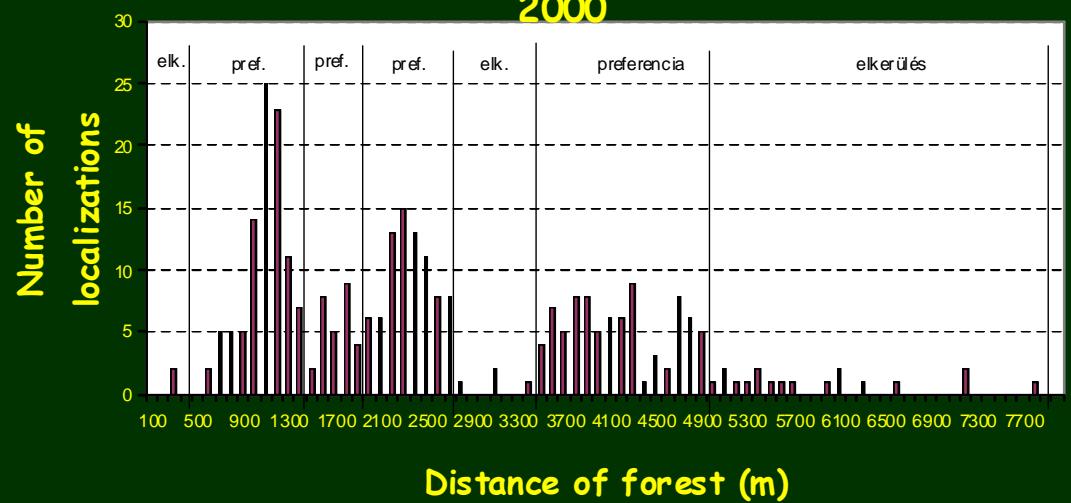
Csányi, S. 1999. A gímszarvas állomány terjeszkedése az Alföldön. Vadbiológia, 6: 43-48.



# Home range shift of red deer in Hajós (radio telemetry, 1993-2006)



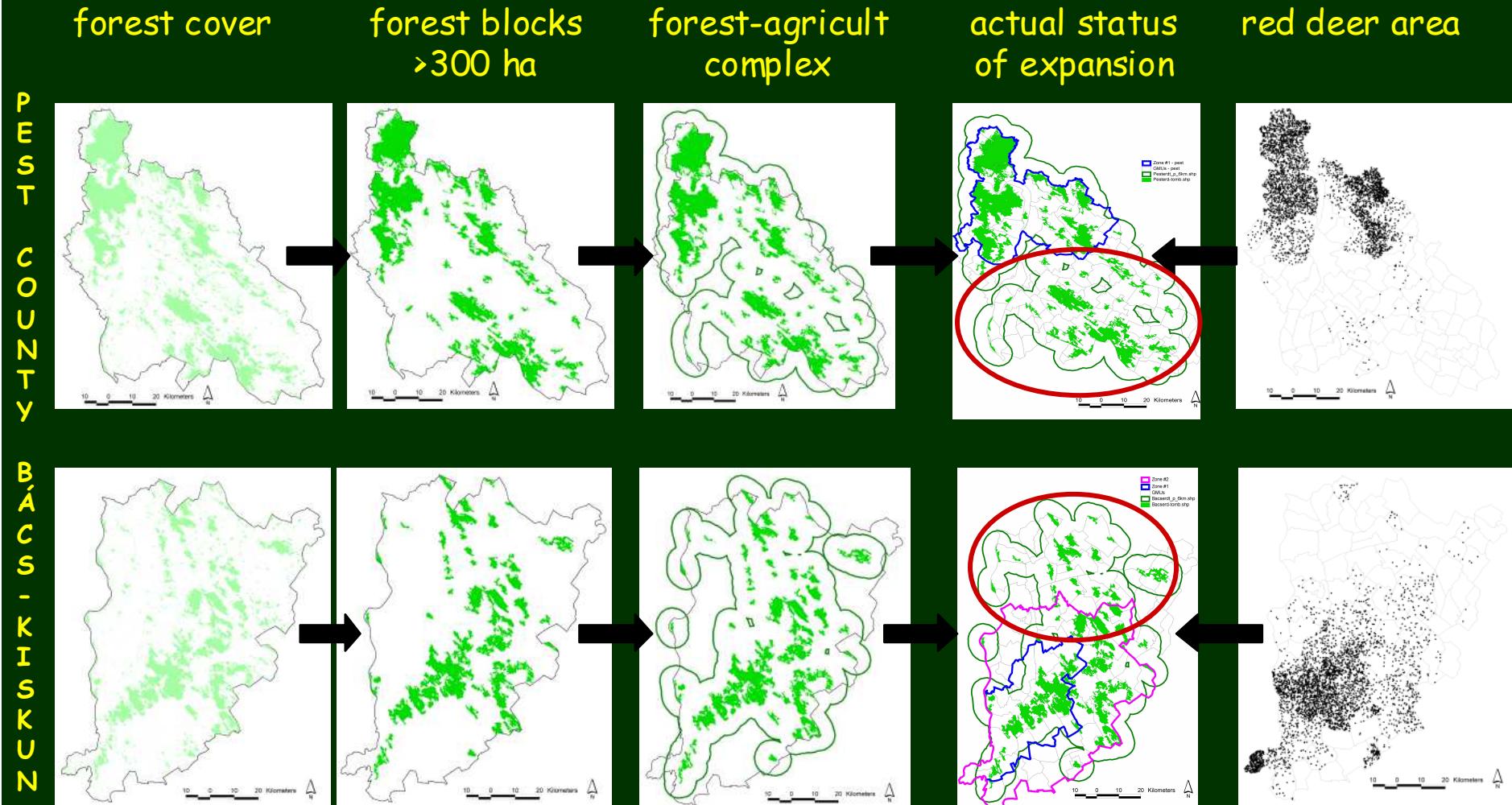
Distance of red deer hind localizations from forest on agriculturel area in Hajós 1994-2000



Szemethy, L., Mátrai, K., Bíró, Zs. and Katona, K. 2003. Seasonal home range shift of red deer in a forest-agriculture area, Hungary. *Acta Theriol.* 48:547-556.

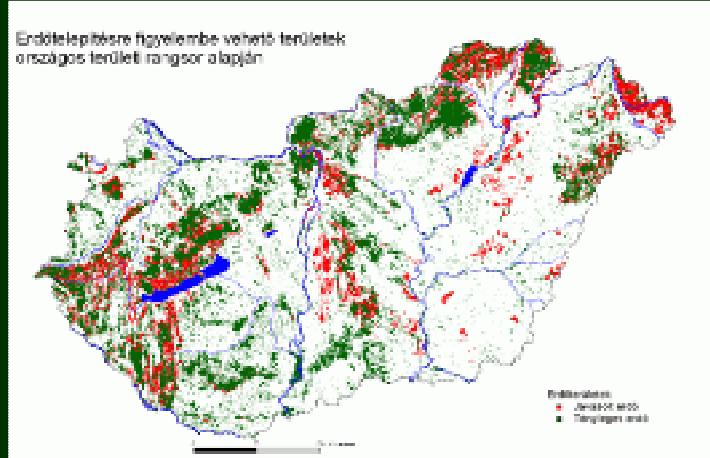


# Actual dispersion and habitat suitability of red deer in Central Hungary

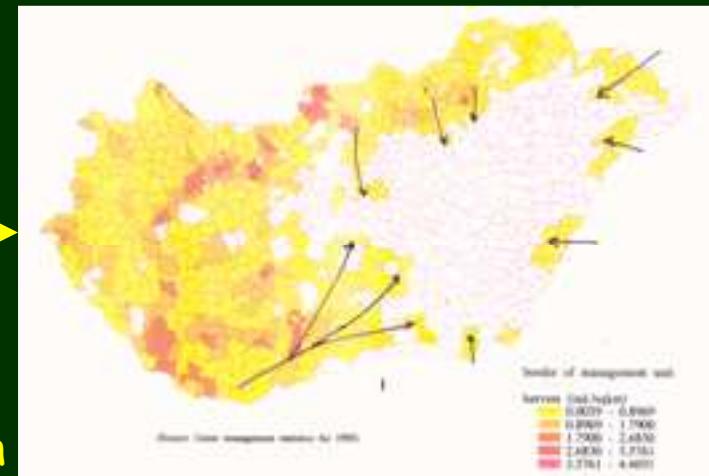




# Forecast for the future



population  
increase and  
area expansion



Existing (green) and planned (red) forests

Forest area will increase from 20% up to 25% in the next 25 years

Predicted area expansion of red deer in Hungary



# Conclusions

- Red deer is not overpopulated.
- As RD adapts well to the environmental changes, and new habitats are created for RD, its population size and area is increasing and it will increase in the future.
- The efficiency of any kind of methods used for population reduction may be questionable.
- Red deer can occur far from the forest blocks temporally in vegetation period causing problems in these areas.
- It is necessary to consider the effects of the red deer (and other big games) in management and conservation plans and environment impact assessment of afforestation.

# Thank you for your attention!



[www.vmi.szie.hu](http://www.vmi.szie.hu)