



Universitatea *Transilvania* din Braşov

**HABILITATION THESIS
SUMMARY**

Title: LARGE CARNIVORES MANAGEMENT IN ROMANIA

Domain: SILVICULTURE

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Wildlife Management is the science and the art of conservation and sustainable development of functional ecosystems and viable populations taking into account ecological, social and economic factors in order to balance both nature conservation and public interest.

Some species have disappeared and others have lost a good part of the original occupied area and/or population size. There are also species which prosper as a result of anthropogenic activity. In the last decades important steps were registered in statistical analysis of the wildlife research. Wildlife genetics was more and more involved in management of the game populations.

Wildlife researchers and managers intend to maintain in ecological, social and economic optimum game populations, to numerically reduce the “pest” and to increase these ones who are endangered. In order to use the results of the research we have to analyze the data, to compare the conclusions with the results of other researches and to publish or present in conferences the new ideas.

Large carnivores are symbolic, key and umbrella species for a functional ecosystem. Being on the top of the food chain they are influencing directly and indirectly, ecologically and ethologically many species and play an important role in conservation of populations and functional ecosystems. The balance between populations size, the habitat caring capacity and human interest it is reflected in “*optimum population size*”.

Large Carnivore Initiative for Europe (LCIE) were I am a member of the core group, as working group of IUCN, has as main objective “*to maintain and rebuild in coexistence with humans, viable populations of large carnivores as integrated part of landscape and ecosystems across Europe*”.

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (*Habitat Directive*) it is one of the main laws for nature protection in EU countries. European Union countries should harmonize national legal provisions with the requirements of this Directive. Bear, wolf and lynx are listed in Annex II of the Directive. This includes species of wild fauna and flora of community interest whose conservation requires the declaration of Special Areas of Conservation - SAC - within the ecological network Natura 2000. They also appear in Annex IV as some species of Community interest requiring strict protection (capturing, killing and disturbing them is forbidden).

In accordance with Article 16 of the Directive, countries can make certain derogations from the provisions above under certain conditions. Preserving populations of large carnivores in Romania is regulated by the Nature Conservation Law no. 57/2007 regarding the regime of protected areas, conservation of natural habitats, wild flora and fauna, the Hunting and Protection of Game Interest Species Law No 407/2006 and the Law 149/2015 and the Management Plans of the Hunting Areas.

Within the group of specialist for large carnivore in Europe I analyzed different methods for monitoring populations depending on their size and density, climatic conditions where they are (eg. snow existence) and cost effectiveness ratio. Since 2006 I was responsible for annual population estimation of large carnivore in Romania. The number of bears is estimated through snow tracking, feeding size direct observations and reproductive units. (COY - females with cubs of the year). Estimations of the lynx populations it is done in winter and spring based on snow tracks, occupied area and size of the territory of the adult females. For wolves we used snow tracking, average pack size, and average pack territory size. There were also used other methods like presence / absence with photo trap cameras or DNA analyses. DNA analyses were used also for the determination of the genetic variability and gene flow.

Large Carnivore are territorial. The type of activity and the size of their territory were determined by classical and satellite radiotelemetry. At least 100 locations for each individual with more than 24 hours between locations for classic telemetry and thousands of locations for satellite telemetry allowed us to have information on habitat preference in habitat availability, type of activity in different habitats in different times of the year, size of the territories, etc. Carnivore diet was identified by analyzing the excrements or stomach contents of dead specimens.

Conflicts with large carnivores were identified by sociological surveys. Management of large carnivores is a challenge considering their biological characteristics outstandingly important place in human mind and considerable international interest for their conservation.

Management plans should provide long-term survival of large carnivore populations in Romania. In order to achieve this goal some actions have to be taken for conservation and rehabilitation of ecosystems occupied by large carnivores, assessing environmental impact of human activities (building highways for example) and monitoring of all the changes, which take place in the populations.

Overall large carnivores recorded a comeback to the European level due to changes in human attitudes and changes in land use. Also the main prey species have experienced a spectacular numerical growth which has led to much better conditions for feeding carnivores and

reduce conflicts with livestock breeders. In Romania, the size, density and the human acceptance of the large carnivore population are remarkable.

For the future my academic carrier will be developed in accordance with the management plan of the Forest Faculty - Transilvania University - Silviculture Department. Research and teaching processes are correlated. The best students will be involved in research in order to learn more and discover new aspects of wildlife ecology and management. The learning process in my classes will be interactive and attractive. I will continue the research in wildlife ecology and ethology and I will be involved in wildlife management. The teaching materials will be renewed each year in order to be updated with relevant information.