

RECENT DATA ON BROWN BEAR DAMAGE IN AGRICULTURE IN N.E. AND CENTRAL PINDOS RANGE – GREECE.

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1. Introduction

Greece hosts one of the southernmost populations of endangered brown bear populations in Europe, reaching below the N 39° parallel. Expanding range comprises two distinct nuclei of 13,500 Km² total. Population size is estimated between 190-350 individuals. Brown bears (*Ursus arctos*) as opportunistic omnivores and occasional predators show a relatively low proportion of animal origin food items in their diet (circa 10-15% in Greece, of which only a part corresponds to livestock) (Mertzanis 1991, Mertzanis 1994, Mertzanis et al. 1996, Paralykidis 2005, Giannakopoulos et al. 2006). This feeding behaviour relies upon: food availability, food concentration and accessibility, the three main characteristics of domesticated livestock and crop as human-related bear food resources. Bear damage on agriculture in Greece was systematically investigated in the frame of two ongoing LIFE-Nature projects (2009-2013) in two adjacent sectors within permanent bear range located in northern and southern Pindos mountain range.

2. Project area

The project area lies in the Prefectures of Grevena, Trikala, in NW Greece and includes the northern and central parts part of the Pindos mountain range. The area is characterized by a highly diverse habitat mosaic, with variable terrain and vegetation structure and consistency (oak forests, black pine, fir, mixed forests, pastures and cultivated lands). The vegetation of the project area includes the following zones: *Quercetalia pubescentis*, *Fagetalia*, *Vacinio-Picetalia* and *Astragalo-Acantholimonetalia* (Athanasidiades 1986).

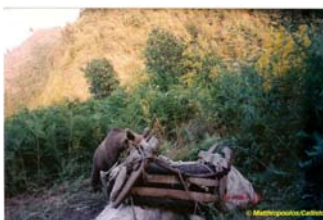
4. Results

- Bear damage on livestock was low compared to livestock availability (~1% of the recorded livestock) and affected mainly cattle: 32.4% of total damage claims.
- Overall damage intensity was also low: circa 65% of the recorded cases and 77.65% (from official claims) of bear attacks, correspond to losses from 1 to 4 small sized livestock
- Crop damages were recorded mainly in corn, wheat fields and vineyards, while damages to apiaries were important averaging 25% of the total damage claims.
- Damages are characterized by a culminating period from May to October marked by two yearly picks in June-July and October.
- Overall total compensation cost paid to farmers reaches 110,000€ yearly.
- The most effective long-term solution to minimize bear – human conflict related to bear damage on livestock and crop seems to be the use of preventive measures such us: electric fencing and livestock guarding dogs.



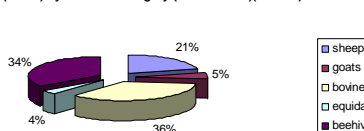
3. Materials and methods

- We used standardized semi-structured type questionnaires through direct interviews conducted from October 2009 to January 2010 on a sample of seventy five (75) livestock raisers.
- Moreover we evaluated 780 official compensation claims from 2007 to 2009 in the two study areas.



Different cases of bear damage on : livestock, beehives, crop.

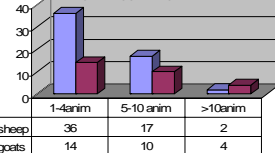
Frequency of damage caused by bears in the project area (n=338) by livestock category (source ELGA)(2006-09)



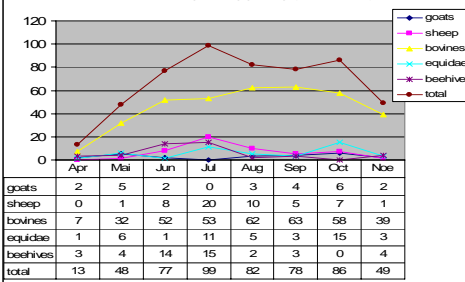
Bear damage on crops: frequency of consumption (kg) by types of cultivations



Bear damage intensity in the project area (number of losses/attack) on small livestock (2006-09) (source ELGA)



Seasonal distribution of bear damage by livestock category and nb of incidents(2006-09) (n=637) (source ELGA)



Brown bear avoiding an electric fenced beehive unit



Local shepherd with good LGD specimens
Photo: A. Giannakopoulos/Callisto

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