

Who's afraid of the Big Bad Wolf? Attitudes towards carnivores

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Introduction

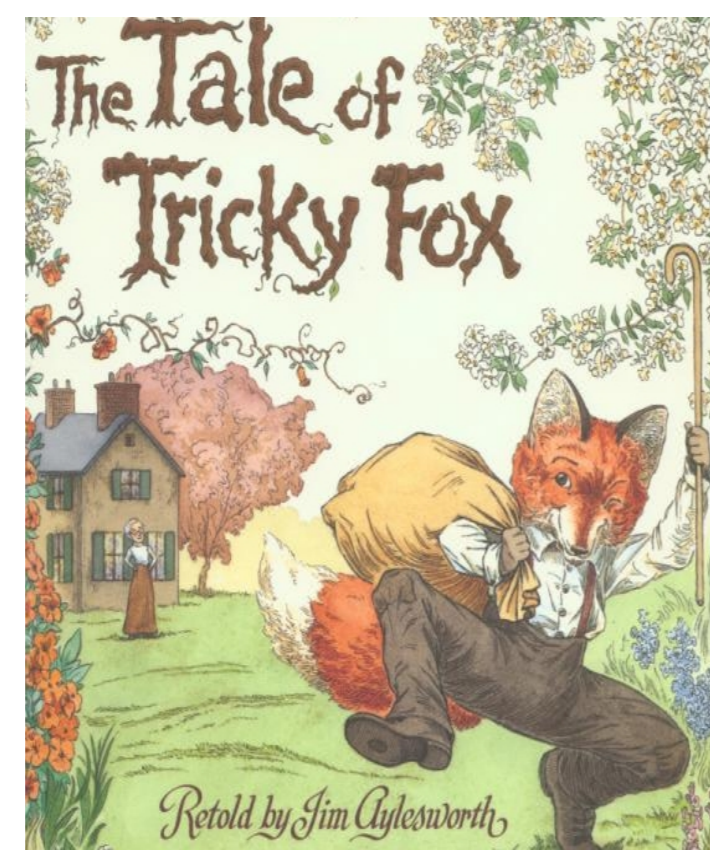
Human-wildlife conflict is a widespread conservation problem with urgent minimization needs [1].

Due to their large spatial requirements, the long-term viability of many carnivore species cannot be ensured by protected areas alone [2]. Thus, many require persistence in multi-use areas where they are especially prone to come into conflict with humans [3].

Consequently, carnivores have frequently been seen as vermin, vilified and killed due to impact of predation on agricultural interests, interaction with hunters and fishermen, general fear and anxiety for personal safety [4], and innate human prejudice [5].

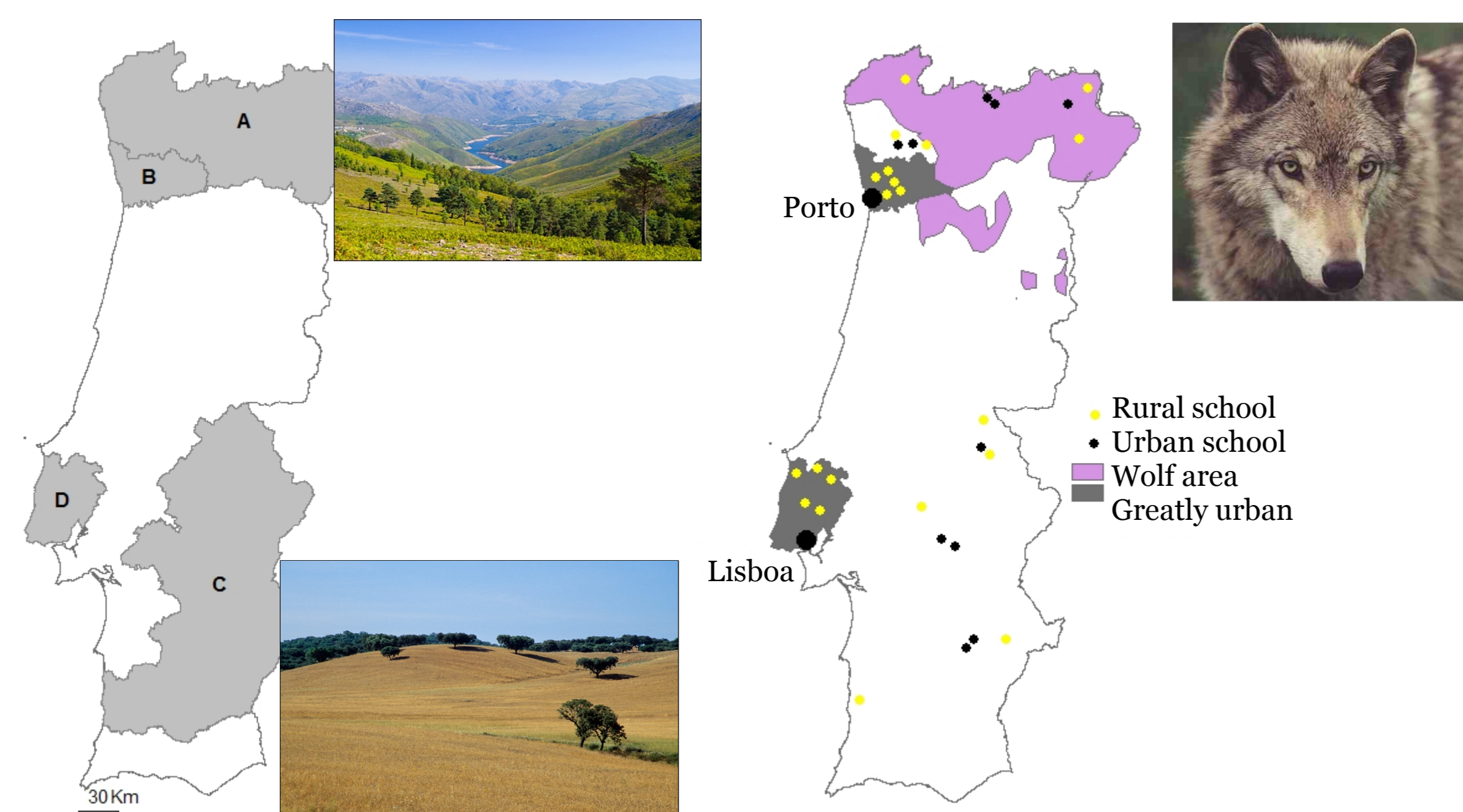
Understanding which factors influence attitudes is key to targeting the most appropriate conflict-solving solutions.

Therefore, this study aimed at understanding perceptions and attitudes regarding carnivores and their conservation in Portugal, in order to help ensure the development of effective conservation programs.



Study area and methods

To test the hypotheses that attitudes towards carnivores and knowledge about them are affected by: (1) presence of carnivores, (2) degree of naturalization (urban or rural area), and (3) distance to the distribution area of a large carnivore (northern or southern area), 969 Portuguese high school students' (age 16 ± 1 years) from 40 schools equally distributed in 4 study areas (shown below) were analysed.



Students' attitudes were assessed through a self-administered written questionnaire in December 2006 - January 2007. Several individual characteristics were included as potential predictors.

CATegorical Principal Component Analysis was used for component extraction and analysis, and linear mixed-modelling was used for testing hypothesis, with 'school' as a random effect to account for non-independence of observations.

Results

Very positive attitudes towards carnivores and their conservation were recorded, and an almost neutral perception of human-carnivore relationship was found among respondents. Knowledge about carnivore species was generally low.

Urban respondents had significantly lower attitude scores than rural counterparts, and significant differences were specially relevant between rural and urban northern study areas ($t=2,57$; $p=0,006$) (figure 1).

No other significant effects were found for area-related characteristics.

Best fit models, explaining 23-26% of the variation, included only individual-specific parameters (see flowchart below).

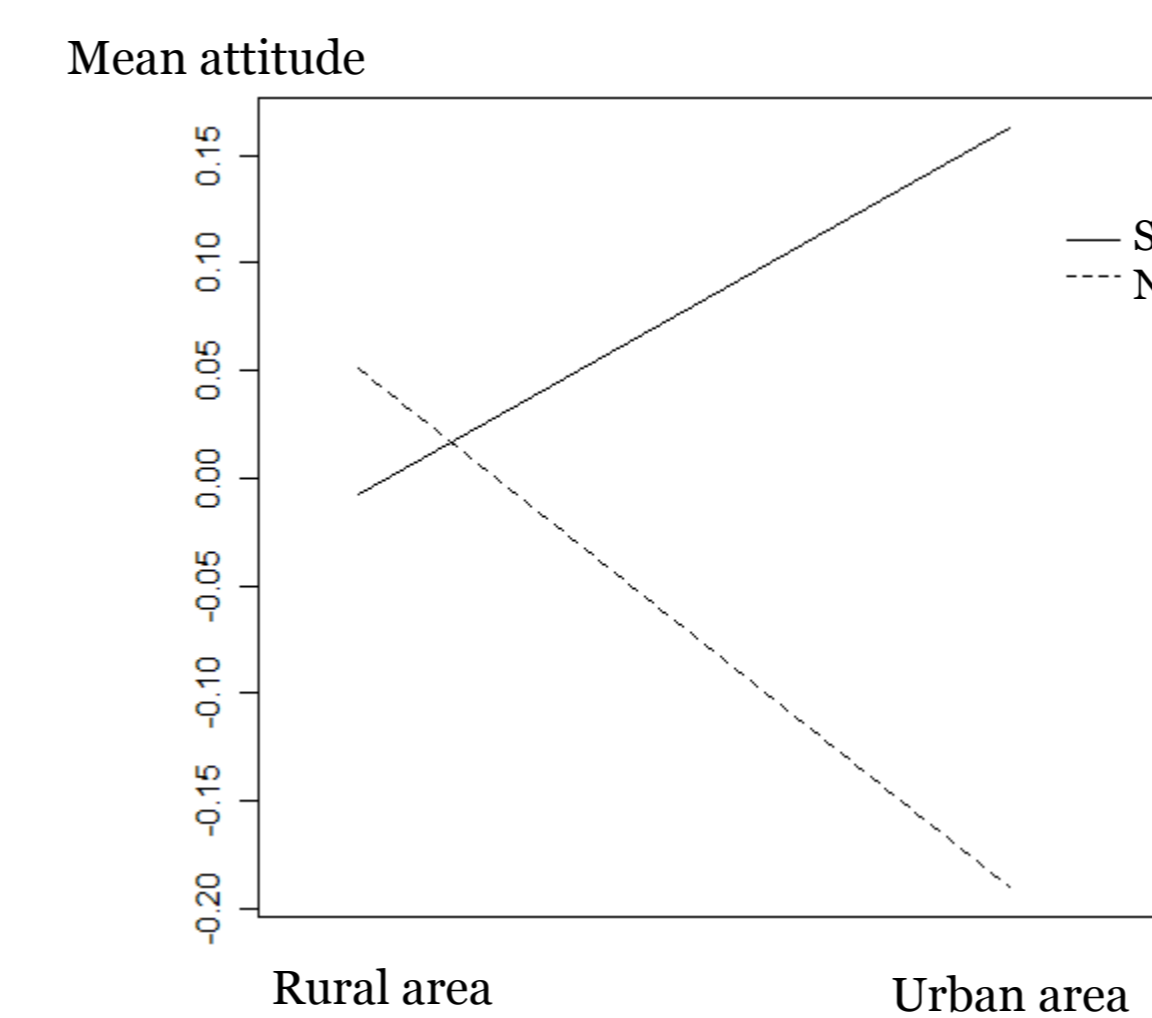


Figure 1. Interaction plot illustrating effect of "degree of urbanization" * "area location" on attitudes towards carnivores.

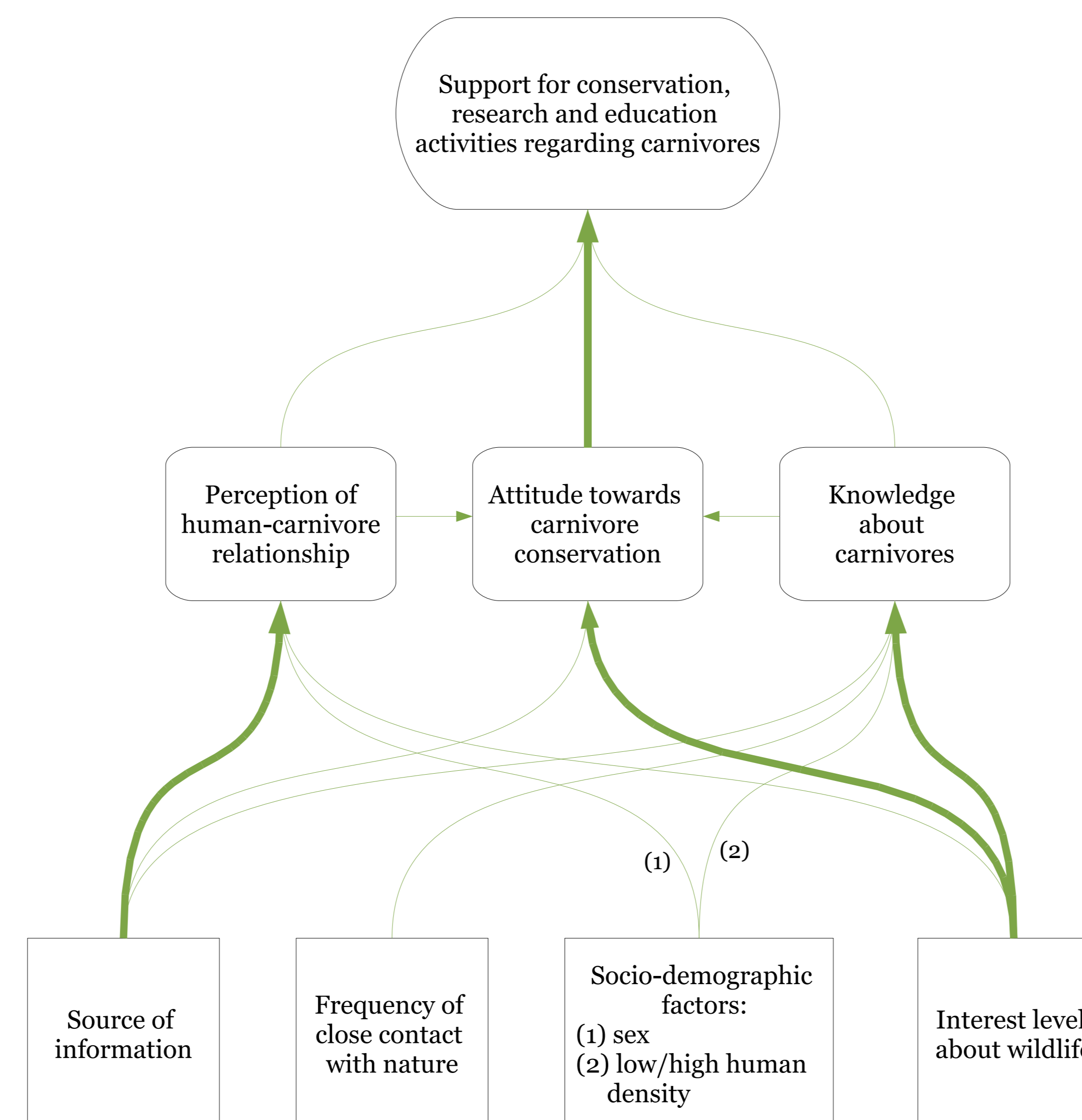


Figure 2. Summary of results from best fit models obtained by testing of the relationship of different variables on the attitude towards carnivore conservation and thus the support for carnivore conservation.

Thicker arrows illustrate the variable which explains most of the variation for a certain response.

Discussion

Similarly to this study, results from other countries indicate that students have a strong positive feeling or a polarized viewpoint towards carnivores, a general feeling of fear and general low knowledge about carnivores.

Effect of degree of naturalization is not clear across studies: some indicate urban students have more positive attitudes, while others indicate the opposite. Lack of clear criteria to distinguish urban and rural areas between studies?

Degree of naturalization has shown a significant effect when students were from North Portugal (closer to wolf distribution areas). Is this a result of educational campaigns aimed at increasing rural citizens' tolerance of large carnivores or are urban northern students more afraid due to greater animal phobia caused by loss of contact with the wolf?



Implications for conservation



Support for carnivore conservation, research, and interest in education activities was high; educational campaigns in schools could thus be useful to reinforce positive attitudes, increase knowledge levels, and decrease self-reported fear.

Variation in attitudes and knowledge was best explained by individual-related parameters, what indicates difficulty in shaping public attitudes if targets are chosen based only on their residence area. Cultural background, family history and personal experience could be key factors to consider.

Whereas students' attitudes toward carnivores may be overall positive, it is fundamental to assess other interest groups in order to develop public information that focus on the concerns, disbelieves and key issues of the various interest groups.

Lastly, acceptance of carnivores depends on animal characteristics[6], but also on people's demographic and personal variables, which implies that sociologists, teachers, and other professionals should be involved in future conservation actions.

Literature cited

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