Mapping brown bear (*Ursus arctos*) habitat preference from camera trapping and telemetry data: implications for wind farm development in Vasilitsa mountain, Greece

Background and aim

- Wind farms and their infrastructure have negative impacts on wildlife, which include mostly indirect impacts by habitat modifications and behavioural alterations.
- Large accompanying infrastructure is required for the construction of wind farms and the study area is a Natura 2000 area with approved future plans for wind farm development.
- The **aim of the study** was to assess the relative abundance, circadian activity and habitat selection of brown bears in the area, and create a habitat suitability map in order for decision-makers to re-evaluate wind farm development in the area.

Methods

By using camera trapping in the 15 grid 5 x 5 km study area:

- Assessment of brown bear relative abundance
- Comparison of brown bear circadian activity and human circadian activity

By using telemetry data from older studies in the area:

- Assessment of brown bear habitat selection
- Creation of a habitat suitability map for brown bears in the study area

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Results

- Brown bear relative abundance was found to be comparably high in the areas of planned wind farm development.
- Temporal division between brown bear and human circadian activity, indicating that brown bears might have changed their behaviour because of human disturbance in the study area.
- Habitat selection showed that brown bears prefer broad-leaved and mixed forests, heterogeneous agricultural areas and shrublands.
- 22 out of 31 planned wind farms are located in areas with moderate to high suitability for brown bears.

Conclusion

A re-evaluation of the current plans for wind farm development in Vasilitsa mountain is critical if a better wildlife conservation strategy is to be implemented.

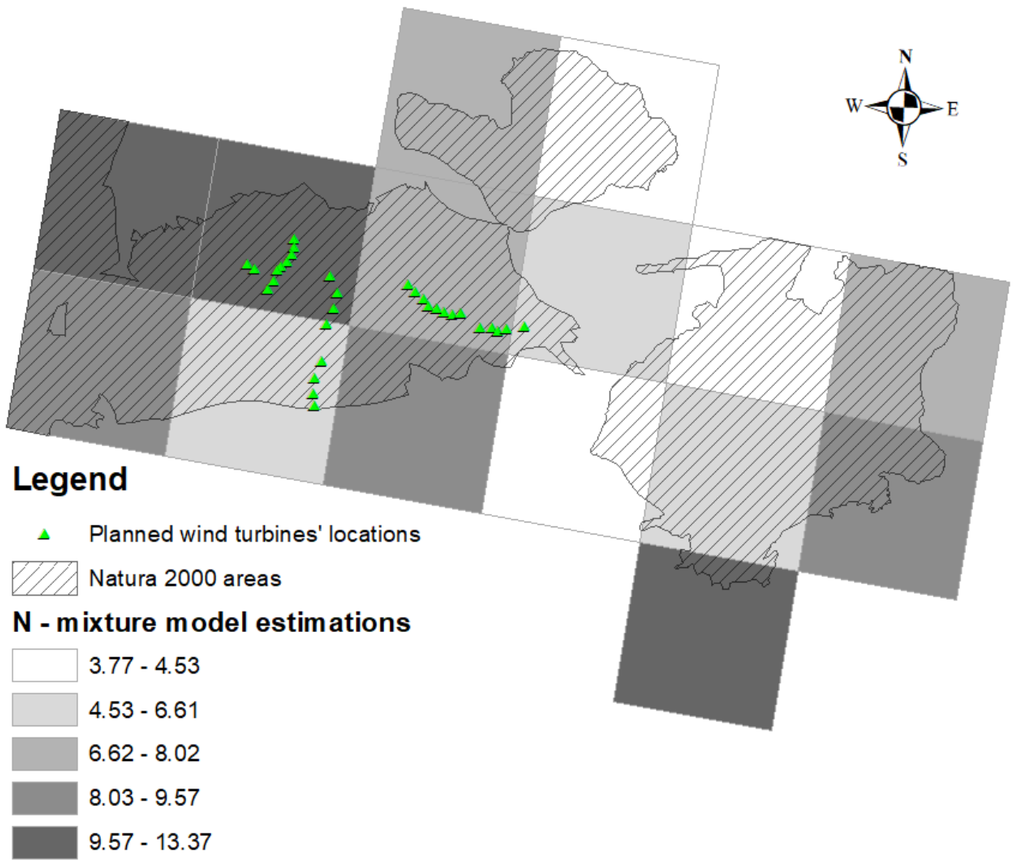

Figure 1. Relative abundance estimations in each grid cell in the study area.

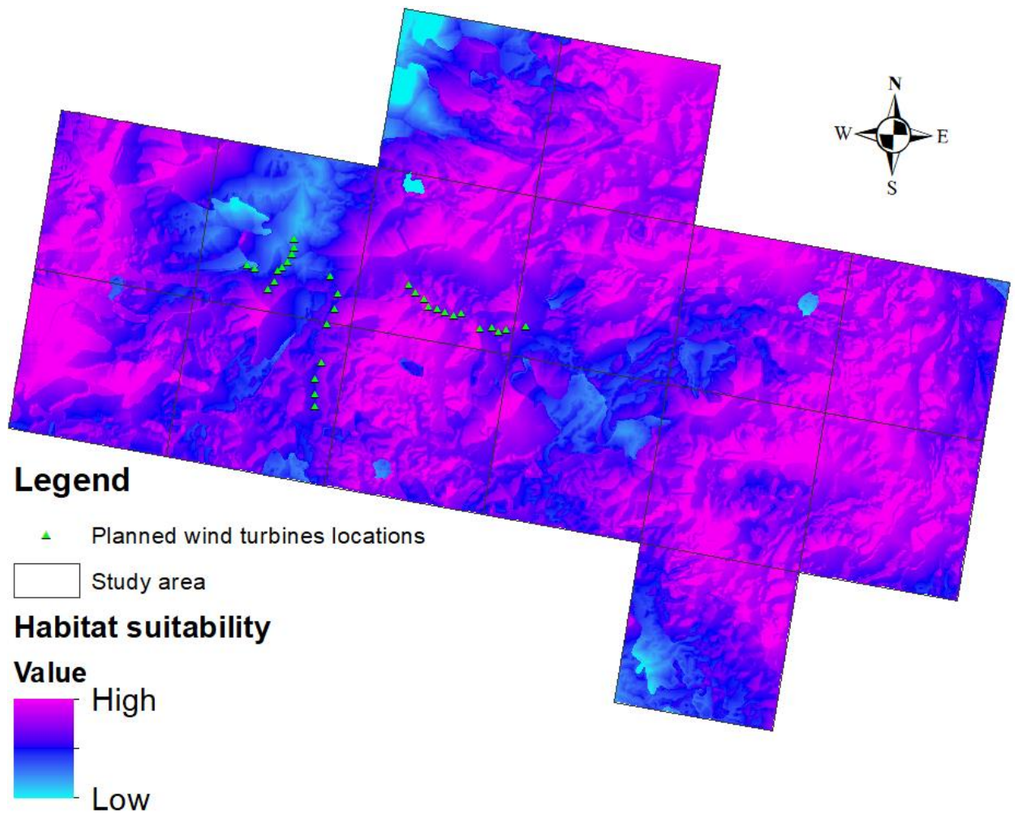

Figure 2. Habitat suitability map for the study area.