



CROATIA DISSERTATION/THESIS PROJECT

CR04 Population levels of Hermann's Tortoise in Krka National Park

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Hermann's Tortoise (*Testudo hermanni*) was formerly widespread throughout the Western and Central Mediterranean basin, but habitat loss and direct exploitation for the pet trade has led to its extirpation from much of its range. It is considered by the IUCN to be Near-Threatened globally, and is classified as a Data-deficient Natura 2000 species (indicating further research needs to be conducted on the remaining European population). Croatia (including the grassland and scrub habitats of Krka National Park) remains an important stronghold for *T. hermanni*, although very little research has been completed regarding the demographics of the species here. Obtaining a better understanding of the population size of Hermann's Tortoise in Krka, the age and sex structure of this population, and how it is distributed across different habitats within the Park, would allow for a better appreciation of how important the site is for the species, and how best to manage it.

Students taking this option will work alongside an experienced herpetologist, and will complete line transects and timed searches for *T. hermanni* in the grassland and scrub habitats of Krka National Park. All Tortoises encountered will have their GPS location noted, and will then be returned to a processing station where they will be aged, sexed, and have morphometric measurements taken (carapace length, plastron length, weight, etc). These tortoises will then be given a unique mark by clipping their marginal scute scales in a defined pattern, allow for Mark-release-recapture analysis to be completed, and then released at the same site of capture.

The data sourced on this project will allow students to estimate the total *T. hermanni* population in Krka, describe how population density is stratified between different habitats, and determine the age structure of the Tortoise community here. This information can then be used to evaluate the importance of the National Park for this globally Near-threatened species, determine key areas of the Park which are particularly important for *T. hermanni*, and source broad ecological data on this relatively poorly-studied species.

Recommended Reading

- Anderson, D.R., Burnham., K.P., Lubow, B.C., Thomas, L., Corn, P.S., Medica, P.A. & Marlow, R.W. (2001) Field trials of line transect methods applied to estimation of Desert Tortoise abundance. *The Journal of Wildlife Management* **65**: 583-597.
- Carthy, R.R., Oli, M.K., Wooding, J.B., Berish, J.E. & Meyer, W.D. (2008) *Analysis of Gopher Tortoise Population Estimation Techniques*. Internal report: Engineer Research and Development Center.
- Couturier, T., Besnard, A., Bertolero, A., Bosc, C., Astruc, G. & Cheylan, M. (2014) Factors determining the abundance and occurrence of Hermann's tortoise *Testudo hermanni* in France

and Spain: Fire regime and landscape changes as the main drivers. *Biological Conservation* **170**: 177–187.

Couturier, T., Cheylan, M., Bertolero, A., Astruc, G. & Besnard, A (2013) Estimating abundance and population trends when detection is low and highly variable: A comparison of three methods for the Hermann's tortoise. *Journal of Wildlife Management* **77**: 454–462.

Livoreil, B. (2009) Distribution of the Endangered Hermann's tortoise *Testudo hermanni* in Var, France, and recommendations for its conservation. *Oryx* **43**: 299-305.

Meek, R. & Inskipp, R. (1981) Aspects of the Field Biology of a Population of Hermann's Tortoise (*Testudo hermanni*) in Southern Yugoslavia. *British Journal of Herpetology* **6**: 159-164.