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The importance of domestic animal parks for the conservation of agro-biodiversity

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Domestic animals are one of the most important inventions of man. The special relationship between people and their domestic animals began about 15,000 BC. Domestic animals changed our world and formed our culture. In many generations a great diversity of animal breeds evolved. This is a unique cultural and historical treasure, which we want to preserve for future generations in our park. However, Ark Warder is more than a zoo it is a landscape park and furthermore a research project. Unfortunately this genetic variety, which arose out of thousands of years, is about to become extinct. Every month another rare animal breed vanishes from earth. At this rate, many breeds of old domestic animal are more endangered than some exotic wild species. Ark Warder, conveniently located in Northern Germany, with 40 hectares it is Europe's largest center for rare and endangered domestic animal breeds. Through the park's conservation efforts more than 1,200 animals from 86 different breeds are protected. In order to halt this alarming extinction, five principles guide the conservation efforts of Ark Warder: 1. Conservation through preservation - through this objective, valuable old breeds are maintained and population size is increased. 2. Conservation through the establishment of satellite stations - with pastures distributed outside the park, Ark Warder ensures the protection of breeds against epidemics. These satellite pastures also allow us to increase the gene pool and utilize selected animals for agricultural purposes. 3. Conservation through education - we believe that by educating the general public the genetic diversity of domestic animals be saved. 4. Protection by networking with national and international institutions - In order to work successfully, Ark Warder needs a functioning network. 5. Protection through research - Ark Warder works in close collaboration with various institutions supporting projects on the physiological characteristics of old domestic animal breeds.

Recent Publications

1. Ballweg I C, Froelich K, Fandrey E, Kliem H and Pfaffl M (2016) Comparison of the immune competence of Turopolje, German Landrace × Turopolje, and German Landrace × Pietrain pigs after PRRSV vaccination. *Veterinary Immunology and Immunopathology* 174:35–44.
2. Frölich K and Jandowsky A (2017) Die Bedeutung der Erhaltung vom Aussterben bedrohter Nutztierassen am Beispiel der Arche Warder. *Tierärztliche Praxis Großtiere* 1, 33-41.
3. Ludwig A, Alderson L, Fandrey E, Lieckfeldt D, Soederlund T K and Frölich K (2013) Tracing the genetic roots of the indigenous White Park Cattle. *Animal Genetics*, 44:383-386.
4. Schröder O, Lieckfeldt D, Lutz W, Rudloff C, Frölich K and Ludwig A (2016) Limited hybridization between domestic sheep and the European mouflon in Western Germany. *European Journal of Wildlife Research*, 62(3):307–314.
5. Sorg D, Fandrey E, Frölich K, Meyer H H D and Kliem H (2013) The innate immune response of primary bovine mammary epithelial cells from the ancient White Park and Highland cattle compared to the modern dairy breeds Brown Swiss and Red Holstein. *Animal Genetic Resources*, 52:91-104.

Biography

Kai Frolich is a Doctor of Veterinary Medicine, holding a PhD and additional Master's degree and a second PhD in Biology. Since 2007, he is the Director and Head Veterinarian of the Tierpark Ark Warder – center for rare domestic breeds and since 2014 he is working as a Visiting Professor at the University of Hildesheim at the Department of Biology. From 1992 until 2006 he worked at the Leibniz Institute for Zoo Biology and Wildlife Research Berlin (Head of research group wildlife diseases since 1997). He has long experience in wild and domestic animal species, particularly in infectious diseases. He was the Assistant Editor for *European Journal of Wildlife Research* and *Journal of Wildlife Diseases* and is regional Coordinator of Europe for The World Conservation Union-Veterinary Specialist Group and Vice-Chairman of the board of trustees of Tönnies Foundation. He is author of 14 scientific book chapters and books and 85 scientific peer reviewed papers.

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