




With support from:

 Federal Ministry of Food and Agriculture

Project manager:

 Federal Office for Agriculture and Food






By location of the

 German Bundestag

ARCHE WARDER
 Institut für alte Rassen- und Nutztierarten e.V.

VdZ

Optimizing the contribution of zoological gardens to the conservation of endangered domestic livestock breeds

Dr. Julia Kögler, Sinje Büttner, Stefanie Klingel, Prof. Dr. Dr. Kai Frölich

ERFP Ex Situ Conservation WG meeting; 1. June 2022


1

VdZ



- **VdZ = Association of Zoological Gardens**
- **Office:** In Berlin since 2016
- **Members:** 71 scientifically managed zoos/animal parks in four countries [DE (56), AT (6), CH (8), ES (1)].
- **Visitor numbers:** More than 45 million visits in 2019
- **Animal stock:** 200,000 vertebrates with 8,200 livestock animals. On average per zoo: 79 livestock animals (55 mammals/24 birds), 13 breeds.









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2

VdZ


VdZ

- **Species protection:** ~8 million EUR as well as personnel, expertise, donations in kind for 170 (inter)national nature and species protection projects in 61 countries. 2018/19: 3072 animals in 46 species released. Management of 106 international breeding programs. 7 of 22 animal species with IUCN status "EW" are present in VdZ zoos.
- **Education:** 88% of members have a zoo school. 1.25 million visitors/year use more than 171,000 educational programs. 72% of zoos offer courses to students, university staff and educators.



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3

VdZ


VdZ

- **Research:** From 2008-2018 contribution to 1,056 peer-reviewed articles in over 250 journals. 200 publications/ year. Worldwide database and European biobank.
- **Animal welfare:** 25 release stations: Around 3,300 wild animals in need of help are cared for every year and released back into the wild if possible.
- **Recreation:** 1,960 ha area (~2,744 soccer fields) in urban space.



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4

Animal park Arche Warder

- World's largest center for rare and endangered domestic and livestock breeds
- 40 ha park area + 120 ha leased land
- 1,200 animals from 83 ancient domestic breeds; some wild animal species (including stem forms)



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5

Animal park Arche Warder

The holistic concept comprises 3 focal points:

(1) Landscape zoo based on 6 pillars

- I. Conservation breeding
- II. Satellite stations
- III. Environmental education
- IV. Networking
- V. Research
- VI. Biotope protection



(2) Education



(3) Marketing of products



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6

Potential and unique features of zoos



- Non-profitable owners of domestic breeds
- Many breeds present, but usually only few individuals of each breed
- Expertise, valuable and diverse animal population, capacities (breeding, quarantine, vet.)
- Population management for small populations / scientific conservation breeding
- *Ex-situ in-vivo* husbandry in zoos is complementary to *in-situ in-vivo* conservation in an agricultural context or to cryopreservation
- Educational platform for millions of people, diverse audience
- Different animal disease regulations (satellite stations)
- Network of 200 organized zoos in Germany



7

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7

The project

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Initiative and leadership: VdZ und Animal park Arche Warder

Partner: Zoo associations, associations of livestock breeders, scientists

Duration: May 2020 to April 2023

Funding: Federal Ministry of Food and Agriculture (BMEL) / Federal Office for Agriculture and Food (BLE)

Projekt goal: Promote and optimize conservation of rare livestock breeds in zoos.

Measures:

1. Scientific conservation breeding and population management
2. Network expansion and public relations
3. Education

8

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8

Progress and achievements

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1. Scientific conservation breeding and population management

- Optimizing cross-company breeding management for focus breeds and other breeds

✓ Selection and purchase of 5 focus breeds

Based on 12 criteria (level of endangerment, strong regional distribution, body size, population in zoos, number of holding zoos, educational value, possibilities herd book breeding, availability of female breeding animals/sperm availability; male animals in zoos, sire exchange, financial support
Deutsches Schwarzbuntes Niederungsrand (DSN) – ERH, Hinterwälder Rind – BEO, Rauhwolliges Pommersches Landschaf- BEO, Coburger Fuchsschaf – BEO, Bunte Deutsche Edelziege (BDE) – BEO

✓ Annual animal inventory

Farm animal report 2020: 54 of 68 participating zoos kept 1,334 domestic livestock animals from 81 breeds (= 50 % of the German breeds) - including 762 animals from 35 large animal breeds.
Kügler, J. (2021): Bestandsmonitoring einheimischer Nutztierassen in Zoologischen Gärten als Basis für eine ex-situ in-vivo Erhaltungsstrategie. Der Zoologische Garten 89, 57-66. Online www.vdz-zoos.org

✓ Genetic analysis of relevant (breeding) animals - variability within breeds

Was carried out in DSN cattle (n=13) and Hinterwald cattle (n=7) from zoos and forms the genetic basis for breeding recommendations.

9

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1. Scientific conservation breeding and population management

- Optimizing cross-company breeding management for focus breeds and other breeds

✓ Problem identification and recommendations for action

- Increasing the holding zoos and the number of individuals of the focus breeds (so far purchase of 14 animals of the focus breeds)
- Promote herd book entries and create more herdbook breeding situations in holder zoos
- Making the zoo stock better suitable for herd book entries (exchange, purchase, rejuvenate)
- Individual recommendations regarding actions for zoos
- In general: replace non-endangered breeds by endangered ones

✓ [Cryopreservation]

- Expert talks took place with the German gene bank for livestock animals
- VdZ is available as a contact and puts them in touch with zoos if suitable

10

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VdZ

2. Network expansion and public relations

✓ **Project accompanying working group**

21 participants from government, zoos, zoo and breeding associations, science, education

✓ **Networking with new partners and sensitization**

Increase internal and external communication on "Zoos and livestock breeds"
Other DWV and DTG zoos and breeding associations
Zoo visits, conferences (zoo associations, science, BMEL/DGfZ etc.)
International platforms (ERFP, SAVE Foundation)

→ **Writing press releases, publications and reports**

Press conferences, articles, social media, radio, TV

→ **Establishment of an annual symposium**

Interdisciplinary VdZ symposium on the preservation of ancient livestock breeds
(22.11.- 23.11.2022, Animal park Nordhorn (DE); speaker welcome)

11

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11

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VdZ

3. Education

• Establishment of the topic of livestock animal breeds in the zoo schools

✓ **Sensitization of the zoo educational staff**

Association of German-speaking zoo educators are involved

✓ **Invention and of 50 "VdZ livestock suitcases" for education in zoos**

Creation of the concept for the "VdZ livestock suitcase"
Creation of accompanying booklet
Test phase incl. evaluation & production completed
Shipping in June 2022 to German-speaking zoos





12

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12

6