

### 3. Biodiversity of animals - its importance in breeding work

The speaker of this presentation is Mrs Ewa Wójcik. She's a professor from the Institute of Animal Science and Fisheries, Faculty of Agrobioengineering and Animal Husbandry in Siedlce University of Natural Sciences and Humanities.

She is going to present a short lecture on the topic of Biodiversity of animals - its importance in breeding work

#### Biodiversity

Diversity of all living organisms found on Earth in terrestrial, marine and freshwater ecosystems and in the ecological complexes of which they are a part of, this includes diversity within species, between species, and the diversity of ecosystems.

Biodiversity occurs at three levels of nature organization:

- Non-species (plant communities, landscapes),
- Species,
- Genetic.

#### Main threats to biodiversity

- Forestry,
- Agriculture,
- Intensive breeding,
- Fishing and angling,
- Hunting,
- Water and marine management,
- Town and country planning,

Species protection in Poland has a rich history.

The first mention of animal protection can be found in the following regulations:

Year 1532 king Sigismund the Old introduced the protection of bison, aurochs, falcons and swans;

Year 1578 king Stefan Batory introduced conservation periods for fish during spawning and defined the rules and methods of their fishing;

Year 1868 The National Sejm in Lviv passed the Act for the Protection of Animals Occurring in the Tatras: marmot and wild goats;

Year 1919 - introduction of the provisions on the protection of rare animals, as well as plants and natural monuments;

Year 1934 approval of the first law on nature conservation in Poland.

We have many categories of endangered species:

- EXTINCT (EX)
- EXTINCT IN THE WILD (EW)
- CRITICALLY ENDANGERED (CR)
- ENDANGERED (EN)
- VULNERABLE (VU)
- NEAR THREATENED (NT)
- LEAST CONCERN (LC)

And two more groups which are of the lowest level in terms of danger are:

- DATA DEFICIENT (DD)
- NOT EVALUATED (NE)

Poland has also its own Red Book of Animals and currently on this list there is one extinct species in Poland called tarpan (*Equus gmelini*)

In 1996 Poland ratified the Convention on Biological Diversity.

On behalf of the Republic of Poland this convention was ratified and signed by the President in Rio de Janeiro on 5 June 1992.

In 1996, Poland ratified the Convention of acting in accordance with the message of the Convention on Biological Diversity, Poland officially joined the implementation of the World Strategy for the Conservation of Animal Genetic Resources undertaken by FAO (Food and Agriculture Organization of the United Nations).

In 1999, work began on the National Program for the Conservation of Animal Genetic Resources, whose primary goal was to ensure that the genetic diversity of livestock necessary for food production and agriculture will be preserved now and in the future.

On 25 April 2012, Poland adopted the "Strategy for sustainable development of rural areas, agriculture and fisheries" (Resolution No. 163 of the Council of Ministers, of 9 November 2012) is related to the concept of multifunctional agriculture, indicating the need to shape agricultural production in accordance with the requirements of the environment and landscape preservation.

A National Strategy for the Sustainable Use and Protection of Genetic Resources of Farm Animals and an Action Plan for these Resources was developed under the Multiannual Programme of the Institute of Animal Production of the National Research Institute: "Protection and management of national genetic resources of livestock under conditions of sustainable use". The genetic resources of farm animals kept in Poland are significant; each species is represented by several breeds, varieties and lines, among which there are a number of valuable native (local) breeds, produced in a specific region, perfectly adapted to local environmental conditions: climate, soil, fodder resources and subsistence conditions, characterized by specific functional features and unique genotype, often providing unique products, traditionally used by local communities.

All information on the protection of farm animal genetic resources in Poland can be found at: <http://www.bioroznorodnosc.izoo.krakow.pl/>

Livestock covered by the genetic resources conservation programme

Cattle

Polish Red – the oldest Polish breed, whose informal protection was started in 1973,

White-Backed – a breed that has existed in Poland for centuries; the programme was launched in 2003,

Polish Red and White – the programme was launched in 2007,

Polish Black and White - was launched in 2008.

On a first photograph we can see the White-Backed cattle

On a second, Polish Red cow.

Third, Polish Black and White.

And on the last photograph, Polish Red and White cow.

Seven breeds are covered by horse genetic resources protection programs:

Hutsuls – since 1999,

Polish horses – since 1999,

Małopolski horses – since 2005,

Silesian horses – since 2005,  
Wielkopolski horses – since 2007,  
Sokólski horses – since 2008,  
Sztum horses – since 2008.

On a first photograph we can see a Hutsul horse.

On a second, Polish horse.

Third, Malopolski horse.

Fourth, Wielkopolski Horse

Then we can see Silesian horse, Sokólski and Sztum Horses.

Pigs

Genetic protection covers breeds derived from primitive pigs from the Polish and Vilnius regions.

The natural development of the pig population of local breeds, given the current market conditions, would be impossible due to worse performance rates for fattening and slaughter in relation to meat breeds and their hybrids.

Pigs of local breeds have the following characteristics: good fertility, prolificity and maternal characteristics, very good meat quality, genetic resistance to diseases specific to these breeds and genetic and phenotypic differences from breeds commonly held.

The pigs that are under the genetic protection programme are:

- Puławska Pig
- White Goldsmith's Pig
- Golden Spotted Pig

Sheep

Native primitive sheep breeds played a large role in the formation of later noble regional types of sheep, and the old type merino was the progenitor of a group of merino sheep characterized by excellent quality wool.

Local sheep breeds are characterized by very good adaptation to local environmental conditions, minimum feed requirements and high resistance to diseases and unfavorable living conditions.

Protected by the genetic programme are the following sheep breeds:

- Whitehead Sheep
- Podhale Cakiel
- Colored Merino
- Polish Old-Style Merino
- Blackhead Sheep
- Kamieniec Sheep
- Corriedale Sheep
- Olkuska Sheep
- Sheep of the Foothills
- Pomeranian Sheep
- Świniarka Sheep
- Uhruska Sheep
- Polish Heath Sheep
- Żelaznieńska Sheep
- Polish Mountain Sheep
- Polish Colored Mountain Sheep

In regards to goats, there are three breeds that are under the genetic protection program:

- Karpacka Goat
- Sandomierska Goat
- Kazimierzowska Goat

Among chickens, we have seven breeds that are protected by the genetic programme:

- Polish Crested (CP-11)
- Polish Crested (CP-22)
- Rhode Island Red (K-22)
- Rhode Island White (A-33)
- Leghorn (G-99, H-22 i H-33)
- Sussex (S-66)
- POLBAR (Pb)
- Green-Legged Partridge (Z-11 i Zk)
- Yellow-Legged Partridge (Ż-33)

The national program for the protection of animal genetic resources covers 14 breeds/varieties of geese, including:

- Bilgoraj (Bi)
- Zatorska (ZD-1)
- Garbonosa (Ga)
- Kartuska (Ka)
- Kielecka (Ki)
- Lublin (Lu)
- Subcarpathian (Pd)
- Pomeranian (Po)
- Rypinska (Ry)
- Suwalska (Su)
- Slovak (Sł)
- Romanesque (Ro)
- Cuban (Ku)
- Landes (LsD-01)

Also covered by the national programme for the animal genetic resources are ducks. Those ducks species are:

- Polish Pekin
- Danish Pekin
- French Pekin
- English Pekin
- Mini-ducks

Among furry animals covered by the programme are:

Popielno White Rabbit  
 Beige Chinchilla  
 White-Necked Fox  
 Pastel Fox  
 Breeding Polecat

Also found in the protection programme are coypu:

- Black Dominant
- Amber-Golden
- Non-Albino White
- Sable
- Pearly
- Greenlandic

Fish are also protected by the programme.

- Rainbow Trout
- Zator Carp
- Starzawa Carp
- Lithuanian Carp
- Ukrainian Carp
- Polish Golyski Carp

Bees which are also protected are:

- Campino,
- Augustów,
- Asta,
- Northern,
- Kraińska line Good

Thank you for your attention!