

35 years of keeping and breeding of European Bison (*Bison bonasus*) at Thüringer Waldzoo Gera

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Abstract: The keeping of *Bison bonasus bonasus* started with a old pair from Zoo Leipzig in 1973 at Thüringer Waldzoo Gera. In 1976 a direct import from Bialowieza Forest brought three young European bison to Gera. This established group bred five offspring. In 1991 the genetic line was changed to the Lowland-Caucasian. More than 30 offspring from this line were born during 18 years. In 2009, after more than 35 years of keeping *Bison bonasus*, the line was changed back to the Lowland.

Thüringer Waldzoo Gera

The Thüringer Waldzoo Gera was founded as a small enclosure for native species in 1962. Today this institution is one of the largest and famous zoos in Thuringia, Germany. About 100.000 people visit annually the zoo.

In these zoological garden at approximately 20 hectare site are kept over 500 animals belonging to about 80 different species. There are mainly species from the northern hemisphere, such as roe deer (*Capreolus capreolus*), red deer (*Cervus elaphus*), fallow deer (*Dama dama*) or Przewalski's horse (*Equus caballus przewalskii*). Particularly Waldzoo Gera is successful in breeding the moose (*Alces alces*). Of course the European bison (*Bison bonasus*) is one of the important residents of Thüringer Waldzoo Gera

1973–1991 *Bison bonasus bonasus*

The keeping of European bison in Gera had started with the male PUCZ and the female PULA II (Table 1). Both were born in Poland and came from Zoo Leipzig, Germany. This couple never bred in Gera and they were killed two and three years later. The reasons for killing remains unknown.

In 1976 the zoo had imported three bison from Bialowieza Forest, Poland: male KAR, females KAMPALA and KAMPANIA. KAR and KAMPALA had together only a stillborn. KAR and KAMPANIA bred two offspring however fate of these bison are unknown. In 1981 the female LICANA from Leipzig-Connewitz, Germany supplemented the group. She and KAR bred

Tabela 1. *Bison bonasus bonasus* at the Thüringer Waldzoo Gera in period 1973–1991.
Breeding animals are in bold. TWZ – Thüringer Waldzoo, NP – National Park, TG – Tiergarten, TP – Tierpark, WP – Wildpark, † – dead, ? – unknown, ?? – removed from European Bison Pedigree Book

Sex No.	Name	Parents	Date of birth	Breeder	Place of origin	Date of leaving / Whereabouts
♂ 1020	PUCZ	761 Pumeks 748 Pumianka	06.06.56	Pszczyna Poland	08.11.1973 Zoo Leipzig	28.04.1975 eliminated
♀ 1037	PULA II	829 Pumik 908 Puella	03.12.56	Smardzewice Poland	05.11.1973 Zoo Leipzig	21.04.1976 eliminated
♂ 3397	KAR	<i>B. b. bonasus</i> <i>B. b. bonasus</i>	1973	Bialowieza, Poland	13.05.1976, Bialowieza	18.11.89, eliminated
♀ 3398	KAMPALA	<i>B. b. bonasus</i> <i>B. b. bonasus</i>	1973	Bialowieza, Poland	13.05.1976, Bialowieza	† 24.02.1990
♀ 4095	TH...	3397 Kar 3398 Kampala	01.02.77	TWZ Gera		stillborn
♀ 3399	KAMPANIA	<i>B. b. bonasus</i> <i>B. b. bonasus</i>	1973	Bialowieza, Poland	13.05.1976, Bialowieza	13.09.1990, eliminated
♂ 3906	THOR	3397 Kar 3399 Kampania	22.06.77	TWZ Gera		† 23.01.1982
♂ 4209	THARO	3397 Kar 3399 Kampania	22.07.78	TWZ Gera		1981 TP Gotha † 01.08.1985
♂ 5100	TH...	3397 Kar 3399 Kampania	18.09.82	TWZ Gera		Stillborn
?? 5480	TH...	3397 Kar 3399 Kampania	09.11.83	TWZ Gera		??
♀ 4610	LICANA	3396 Kadmos 3401 Kalinka	07.07.80	WP Leipzig	05.11.1981	28.12.1989, eliminated
♂ 5371	THEO	3397 Kar 4610 Licana	12.07.83	TWZ Gera		† 18.05.1988
♀ 6224	THEA	3397 Kar 4610 Licana	05.10.86	TWZ Gera		13.03.88 TG Stendal alive
♀ 6496	TH...	3397 Kar 4610 Licana	18.09.87	TWZ Gera		† 23.10.1991

three offspring together. Son THEO died of unknown reason. Daughter THEA, born 1986, lives in Stendal, Germany today. She had nine offspring (one of them came to Pszczyna, Poland in 2001). The last offspring of Lowland line from 1987 was sold for company.

In 1989 KAR was slaughtered because a break of his spine. The reasons for the emergency slaughter of KAMPANIA and LICANA is unknown.

1991–2009 *B. b. bonasus* × *B. b. caucasicus* (Lowland-Caucasian line)

During 1990 and 1991 was a time of change. The division of the both lines was for the administration not really important in these time. For more than fourteen months both lines were present at the Thüringer Waldzoo Gera. In this time lived: KAMPANIA, TH... (6496) and IL... (6795) together. For only one month in this group lived also LINE and ZWETSCHKE (Table 2). So the group was a mix of 0,2 Lowland bison *B. b. bonasus* and 1,2 of Lowland-Caucasian line *B. b. bonasus* × *B. b. caucasicus*. The male IL... (6795) should be the new breeding bull. But it had a not diagnosed diarrhoea, and was slaughtered in 1991.

With ORION, LINE, ZWETSCHKE and LINA a very successful breeding of the European bison in Gera had started. ORION and LINE bred only two offspring, because after five years she was slaughtered because of being very aggressive and difficult to manage.

ZWETSCHKE and ORION bred sixteen offspring with LINA. But only five of them are today included into the pedigree register. The same apply for the offspring of LINA and ORION.

In two cases ORION bred with his daughter THYRA. The offspring THALIA and THASIDOS are healthy and without any sign of inbreeding depression.

At the beginning of 2007 we planned to reform our group. It was very important for us to do it in accord with the European Bison Specialist Group IUCN and also the Pedigree Book. After one year the plan was to offer our bison for a project in National Park Skolivski Beskidy, Ukraine and start with a new group of the Lowland line.

Prior to the transport ORION and ZWETSCHKE had legs problems so they was slaughtered in 2008. LINA had metabolic problems and she was also slaughtered three months later. Finally the transport to the Ukraine started in June 2009 with THOSKA, THYRA, THEO; THALIA, THUNDERBIRD and THASIDOS.

We thank in particular Dr. Wanda Olech, Dr. Oksana Maryskevych and the European Bison Friends Society for arrangement of the transport.

2009 *Bison bonasus bonasus*

On 7th June arrive to Gera the male POSTRON, the female POZIOME CZKA and the female POWISŁA (Table 3). They should become the new breeding group of Thüringer Waldzoo Gera.

Nutrition

The bison are fed two times a day, in the morning and in the evening. As food hay and straw are provided, water they can use *ad libitum*. Additionally they

Tabela 2. *Bison bonasus bonasus* x *Bison bonasus caucasicus* at the Thüringer Waldzoo Gera in years 1991–2009.

Sex No.	Name	Parents	Date of birth	Breeder	Date of transfer	Date of leaving Whereabouts
♂ 6795	IL...	4254 Repkow 3907 Ilona	10.07.89	TP Suhl	21.06.90	24.05.91, emergency slaughter
♀ 6992	LINA	4835 Laumo 3987 Linda	27.05.89	WP Leipzig-	24.04.91	16.09.08, emergency slaughter
♀ 6993	LINE	4835 Laumo 5895 Lisette	28.05.89	WP Leipzig-	24.04.91	29.01.98, emergency slaughter
♂ 7041	ORION	5849 Europa 5612 Orsina	01.09.90	WP Chemnitz	07.11.91	03.06.08, emergency slaughter
♀ 7163	ZWETSCHKE	4081 Zwerg 4536 Lauda	10.06.90	TP Hirschfeld,	10.04.91	03.06.08, emergency slaughter
♂ 7943	TH...	7041 Orion 6992 Lina	04.05.93	TWZ Gera		18.06.94, company Kuhnmat, ??
♀ 7944	TH...	7041 Orion 7163 Zwetschke	06.09.93	TWZ Gera		24.09.93, killed by other female
♂ 8214	TH...	7041 Orion 6993 Line	02.07.94	TWZ Gera		09.05.95 company Jobst, ??
♀ 8215	TH...	7041 Orion 6992 Lina	03.08.94	TWZ Gera		09.05.95, company Jobst, ??
♀ 8216	TH...	7041 Orion 7163 Zwetschke	06.08.94	TWZ Gera		09.05.95 company Jobst, ??
♀ 8432	TH...	7041 Orion 6992 Lina	28.07.95	TWZ Gera		15.10.96, company Kuhnmat, ??
♀ 8433	TH...	7041 Orion 6993 Line	25.08.95	TWZ Gera		18.04.96, company Kuhnmat, ??
♀ 8434	TH...	7041 Orion 7163 Zwetschke	17.10.95	TWZ Gera		15.10.96, company Kuhnmat, ??
♂ 8651	THON	7041 Orion 6992 Lina	11.06.96	TWZ Gera		06.06.97, company Jobst, ?? 1997
♀ 8652	THURA	7041 Orion 7163 Zwetschke	16.08.96	TWZ Gera		25.03.97, TP Suhl, alive
♀ 8836	THILA	7041 Orion 7163 Zwetschke	11.06.97	TWZ Gera		29.06.98, company Jobst, ??
♀ 8837	THINA	7041 Orion 6992 Lina	03.10.97	TWZ Gera		29.06.98, company Jobst, ?? 1998
♀ 9017	THUNA	7041 Orion 7163 Zwetschke	24.05.98	TWZ Gera		03.02.99, TP Hirschfeld, † 31.10.2004

Tabela 2. (cont.)

Sex No.	Name	Parents	Date of birth	Breeder	Date of transfer	Date of leaving Whereabouts
♀ 9188	THOARA	7041 Orion 7163 Zwetschke	03.06.99	TWZ Gera		17.05.00, company Jobst, ?
♀ 9303	THEKLA	7041 Orion 7163 Zwetschke	10.05.00	TWZ Gera		02.05.02, comp. Jobst, Eberswalde, ??? 2005 – Meskendahl, alive
♀ 9666	THINKA	7041 Orion 7163 Zwetschke	22.06.01	TWZ Gera		01.08.01, killed by other female
♀ 9774	THOSKA	7041 Orion 7163 Zwetschke	03.07.02	TWZ Gera		09.06.09, NP Skolivski Beskidy, Ukraine, alive
♂ 10024	THERES	7041 Orion 7163 Zwetschke	15.07.03	TWZ Gera		30.03.04, Wild-Berg- hof Buchet † 2004
♀ 10150	THESSA	7041 Orion 7163 Zwetschke	25.06.04	TWZ Gera		20.12.04, Saalfeld, alive
♀ 10352	THETIS	7041 Orion 7163 Zwetschke	29.07.05	TWZ Gera		04.12.06, privat, ??
♂ 10711	THEO	7041 Orion 7163 Zwetschke	09.10.06	TWZ Gera		09.06.09, NP Skolivski Beskidy, Ukraine, alive
♀ 10984	THEOPHANIA	7041 Orion 7163 Zwetschke	10.09.07	TWZ Gera		† 28.10.07
♂ 11342	TH...	7041 Orion 7163 Zwetschke	03.06.08	TWZ Gera		Stillborn
♀ 9018	THIRA	7041 Orion 6992 Lina	15.08.98	TWZ Gera		03.02.99, TP Hirschfeld alive
♂ 9189	THORSTEN	7041 Orion 6992 Lina	14.06.99	TWZ Gera		17.05.00, comp. Jobst, Eberswalde, ?? 2002
♂ 9304	THOR	7041 Orion 6992 Lina	17.05.00	TWZ Gera		02.05.02, comp. Jobst, Eberswalde, ??? 2005 – Meskendahl, alive
♀ 9593	THEBEA	7041 Orion 6992 Lina	22.06.01	TWZ Gera		22.07.03, Wien, Austria, 2003 – Schlos- shof, 2004 – Lainzer, † 29.06.2008
♀ 9773	THYRA	7041 Orion 6992 Lina	21.06.02	TWZ Gera		09.06.09, NP Skolivski Beskidy, Ukraine, alive
♀ 10710	THALIA	7041 Orion 9773 Thyra	05.10.06	TWZ Gera		09.06.09, NP Skolivski Beskidy, Ukraine, alive

Tabela 2. (cont.)

Sex No.	Name	Parents	Date of birth	Breeder	Date of transfer	Date of leaving Whereabouts
♂ 11182	THASIDOS	7041 Orion 9773 Thyra	31.05.08	TWZ Gera		09.06.09, NP Skolivski Beskidy, Ukraine, alive
♀ 10023	THEA	7041 Orion 6992 Lina	20.05.03	TWZ Gera		30.03.04, Wild-Berghof Buchet, † 2004
♂ 10149	THORDIS	7041 Orion 6992 Lina	06.06.04	TWZ Gera		20.12.04, Saalfeld Alive
♀ 10351	THORIT	7041 Orion 6992 Lina	17.07.05	TWZ Gera		04.12.06, privat, ??
♂ 10833	TH...	7041 Orion 6992 Lina	13.06.06	TWZ Gera		16.06.06, fatal accident
♂ 10983	THUNDER-BIRD	7041 Orion 6992 Lina	30.04.07	TWZ Gera		09.06.09, NP Skolivski Beskidy, Ukraine, alive

Tabela 3. *Bison bonasus bonasus* at the Thüringer Waldzoo Gera from 2009.

Sex No.	Name	Parents	Date of birth	Breeder	Date of transfer	Date of leaving/ Whereabouts
♂ 10920	POSTRON	9725 Pozyton 9914 Ponia	25.06.07	Ustron, Poland	07.06.09	
♀ 10979	POZIOME CZKA	9134 Podryw 9530 Postójka	11.06.07	Bydgoszcz, Poland	07.06.09	
♀ 11117	POWISŁA	8295 Polatlas 6909 Polka II	20.09.07	Zoo Warszawa, Poland	07.06.09	

obtain carrots, beets, apples (seasonally) and pellets for grazers. As often as possible we feed them with tree leaves, bark and branches. In planned intervals they are given diet supplements, like Multivit[®] and Rachitin[®].

The enclosures

When the first two bison PUCZ and PULA arrived at Gera, they were kept in a 422 sq. m enclosure with a 36 sq. m stable. It was possible to divide the stable into two boxes. Bison for feeding and for the night were separated in the stable.

A new enclosure of over 5.000 sq. m and a stable with six boxes was built in 1976 (Fig. 1). The enclosure is divided into two parts. One part is about

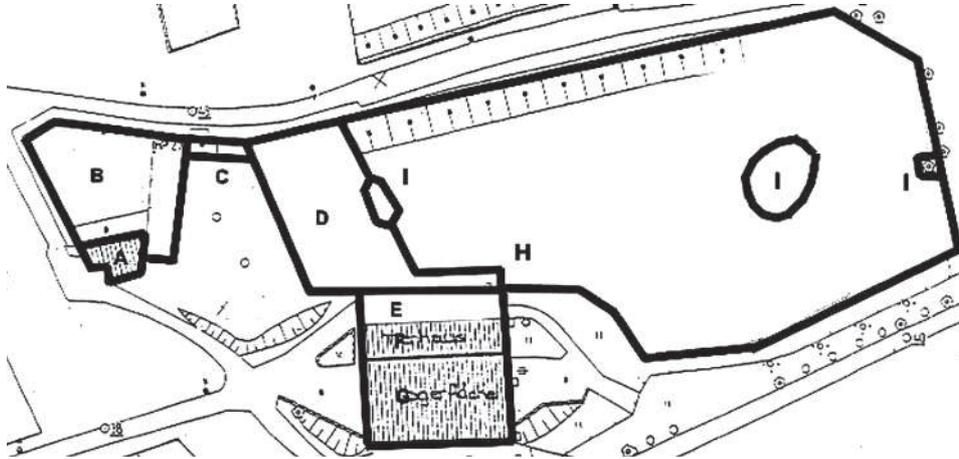


Figure 1. Overview of the old and the new enclosure for European bison at the Thüringer Waldzoo Gera. A – old stable 36 sq. m, B – old enclosure 422 sq. m, C – corridor for transport, D = new enclosure part I, concrete paving slab 500 sq. m, E – six special pens in front of each box, F – new stable with six boxes, G – barn, H – new enclosure part II, grazing land 4500 sq. m, I – islands with trees

4.500 sq. m and the other is about 600 sq. m. The bigger part is a grazing land and the smaller one is covered with special concrete paving slab. The slabs have holes allowing for vegetation growth. In front of each box is a special pen. The new enclosure was opened with three new bison from Bialowieza Forest. In the new enclosure also animals were separated for the night in the stable. However in two cases, the keepers confined a calf not with their mothers and it ended up with a fatal accidents.

In 2002 we rebuild the stable. Three boxes were band together for a playpen and other three boxes were out of order. This arrangement was also not the best one because the bull ate the majority of the food and the situation was very stressful for the group. Furthermore, it was not possible to feed the exact portion of antihelmintic treatment for each bison.

Prior to the transport to the Ukraine in 2009, the bison were habituated to feed in the boxes. In that time the condition of animals was at a regular level. Only food was provided in the stable.

In the future the paddock will be reconditioned and get some new elements for behaviour enrichment and animal welfare. A further step will be include other animals to join the European bison.