

THE DEVELOPMENT OF THE CAPTIVE SNOW LEOPARD POPULATION BETWEEN 1984-1985

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Bi-annual Snow Leopard conferences have been arranged since 1978 when the First International Snow Leopard Conference was hosted by the Helsinki Zoo. The Fourth Congress was arranged by the Krefelder Zoo in 1984 and as the report of the captive stock for 1984 still is in press I take this opportunity to give you a short review of the developments for 1984 and 1985. (Erratum: Due to incorrect information from two zoos, the status for 1983 should be 146/146 and not 144/148 as reported by Blomqvist in 1984. The total number of animals, however, remains 292 as reported.) In this paper, sex is denoted as follows: M/F/unknown.

In 1984 73 (31/41/1) cubs were born of which 47 (24/23) survived for six months or longer. This gives us a cub mortality of 35.6%. A total of 38 (11/26/1) snow leopards died in captivity in 1984. Five [2/3] specimens were wild caught at the same time in the USSR and then located in the zoos of Alma-Ata, Moscow and Novosibirsk. At the end of 1984, the captive stock consisted of 332 (168/164) snow leopards, an increase of 40 animals from the previous year.

CHINESE ZOOS

In 1985 the studbook keeper obtained more detailed information of captive snow leopards in China. This information has been supplied by Prof. Tan Bangjie from the Peking Zoo and Director Liao Yanfa from Xining Zoo, located in the Qinghai-Tibetan highland. On behalf of all the breeders, I want to offer my thanks to these two gentlemen who have provided me with this useful information.

According to Prof. Tan and Director Liao, there were 35 (21/14) snow leopards kept in 15 Chinese zoos in January 1985. Of these only three locations were earlier reported to the studbook. The newly obtained information gives us enough information from 10 more Chinese zoos to have an additional 23 (12/11) snow leopards included in the Fifth Register, which will be published in 1988. We are today aware that there are another two zoos in China which have four snow leopards, but the information is insufficient to have them included in the register.

The only zoo in China which has succeeded in breeding the snow leopard is the Xining Zoo. The first successful breeding took place in 1984 when a wild-caught pair produced a litter of 1/1/1 cubs. Of these cubs, a pair survived. In 1985 another dam produced two cubs at this zoo.

Also worth mentioning for 1985 is that the Melbourne Zoo, which received their first snow leopards in 1983 from New York and San Antonio, succeeded in breeding them in 1985. The litter comprised of two cubs, was born in November 1985, and is the first snow leopard litter to have been born in the southern hemisphere.

Furthermore, two litters were born in each of the eight zoos marked with an asterisk in Table I. Only two litters, bred in Greater Baton Rouge and Little Rock, contained four or more cubs, of which two cubs from the Little Rock litter survived. Of the 35 litters born in 1985, 22 were born in North America, seven in Europe, four in the USSR, while Australia and China as mentioned above, had one litter

each. Altogether 76 (36/33/9) cubs were born, 40 survived six months or longer, giving a cub mortality of 48.7%

Whether this high cub mortality might be attributed to the North American SSP program is difficult to ascertain. This program has restricted the number of breeding animals in order to prevent an explosion of the captive stock and has therefore carefully selected under-represented gene-lines for breeding purpose. By doing this, "safe" breeders have been left outside the program while other animals with poor breeding results have been emphasized for reproduction. In 1983, the survival rate of cubs born within the North American program was 78%, with a 53% survival rate for Western Europe during the same year. In 1985, these figures are 41% for North America and 56% for Europe. This change is, in my opinion, due to the fact that Europe, which still has much poorer breeding results with the snow leopard, uses "safe" breeders, while North America is presently in the position of being able to experiment with its breeding potential. It has, however, clearly been indicated that some lines definitely are over-represented in the stock and that their future breeding should be diminished in order to make room for other under-represented and often poorer breeders to reproduce.

As the total number of animals which died in 1985 was 55 [23/23/9], and no wild animals were captured, we arrived at a status of 378 (193/185) snow leopards in captivity on January 1, 1986. These figures include the 23 Chinese specimens, we therefore have a net increase of 46 snow leopards when the Chinese animals are included. The increase is 23 animals for 1985 when these animals are excluded, an increase of 6.9%, despite the high cub mortality.

Table 1 Changes in Captive snow leopard population 1985

Location	Total 1984 Deaths	Births	Cub Mortality	Total	Imports	Exports	Total 1985
Agrate Conturbia, It	1/1						1/1
Albuquerque, USA	1/1						1/1
Ama-Ata, USSR	1/2	1/1					2/3
Amsterdam, Ne	1/1						1/1
Arnhem, Ne	1/1						1/1
Banham, UK	0/0				1/0 Milwaukee 0/1 Helsinki		1/1
Basel, Swltz	1/3	3/0	1/0	1/0			3/3
Bekesboume, UK	4/5	2/1	1/0	1/0	1/0 Moscow		6/6
Bloomington, USA	4/2					1/1 F. Wayne 1/0 Cincinnati	2/1
Buffalo, USA	1/2	1/0/1	0/0/1	0/0/1			2/2
Calgary, Can	1/1	2/1	1/1	1/1			2/1
Center Hill USA	4/6	2/2	0/1	0/1		0/1 Toledo 0/1 Weir	6/5
Chengdu, China	1/0						1/0
Chessington, UK	0/0				1/0 Zurich		1/0
Chinning Norton, UK	0/0				1/0 Rushden		1/0
Chicago, Brookfield, USA	3/3			1/0		0/1 Rochester	2/2
Chicago, LPZ, USA	6/3					1/0 Rumford 1/1 Racine 1/0 Cleveland 1/1 Philadelphia	
Chongqing, China	0/1					0/1 Omaha	2/0
							0/1

TABLE I, Changes in the Captive Snow Leopard Population in 1985 (continued).

Location	Total Exports 1984	Births 1984	Cub	Total Mortality	Imports Deaths	Total 1985
Cincinnati, USA	0/0				1/1 Cleveland	
					1/0 Kings Island	
					1/0 Bloomington	
					0/1 Kansas City	3/2
Cleveland, USA	3/4	0/0/1	0/0/1	0/0/1	1/0 LPZ	3/3
Colorado Springs, USA	7/5			1/2	1/1 Pueblo	
					2/0 Toneyka	
					0/1 Los Angeles	3/1
Columbia, USA	1/1				1/0 Milwaukee	
					0/1 Leipzig	0/0
Copenhagen, Den	1/1					1/1
Dalian, China	1/1					1/1
Dallas, USA	5/3				1/1 Holiday Island	
					1/0 Hudson	3/2
Denver, USA	2/2					2/2
Des Moines, USA	0/0				1/1 F.Wayne	1/1
Detroit, USA	2/3			1/0		1/3
Dublin, Ir	2/2	0/0/3	0/0/3	1/0/3		1/2
Dushanbe, USSR	1/1					1/1
Edinburgh, UK	0/0				1/1 Marwell	1/1
Edmonton, Can	1/1					1/1
Eichberg, Switz	0/0				1/1 Zurich	1/1
Eskilstuna, S	2/1					2/1
Fort Wayne, USA	0/0				1/1 Bloomington/1 Des Moines	0/0
Grand Rapids, USA	1/1					1/1
Great Yarmouth, UK	0/2					0/2

Location	Total Exports 1984	Births 1984	Cub	Total Mortality	Imports 1985	Exports 1985
Greater Baton Rouge, USA	3/2	2/0/3	2/0/3	2/0/3		3/2
Grodno, USSR	1/0					1/0
Guangzhou, China	0/1					0/1
Helsinki, Fin	6/10	2/2	0/1		0/1	0/1 Banham
						0/1 Wuppertal
Holiday Island, USA	2/2				1/2 S. Lake City	1/0 San Diego
					1/1 Dallas	1/0 Weir
						0/1 Oklahoma
Houston, USA	1/2					2/4
Hudson, USA	0/0				1/0 Dallas	1/2
Jackson, USA	1/1					1/0
Jersey, UK	1/1					1/1
Kansas City, USA	1/2					0/1 Cincinnati
Kaunas, USSR	0/1					0/1 Moscow
Kings Island, USA	1/3					1/0 Cincinnati
Krefeld, GFR	3/7	2/1	2/0		2/0	0/1 Pont-Scorff
Legal, Can	1/1	1/1				3/7
Leipzig, GDR	2/1				0/1	2/2
	2/1					0/1 Columbia
Leningrad, USSR	1/0					1/0
Little Rock, USA	1/1	3/1	1/1	1/1		3/1
Lodi, USA	0/0				1/0 San Francisco	
					0/1 S. Lake City	1/1
Los Angeles, USA	1/1			0/1	1/0 Pittsburgh	
					0/1 Colorado Springs	

TABLE I. Changes In the Captive Snow Leopard Population In 1985
(continued).

Location Total 1984	Total Mortality	Births Deaths	Cub	Total	Imports Deaths	Exports 1985
Marine World, USA	0/0		i		0/1 San Francisco	0/1
Marwell, UK	3/3	1/1		0/1		1/1 Edinburgh 3/2
Melbourne, Aust	1/1	0/2	0/1	0/1		1/2
Memphis, USA	1/2	0/3	0/2	0/2		1/3
Milwaukee, USA	4/3			0/1	1/0 Columbia	1/0 Banham 4/2
Monroe, USA	1/2	2/3	2/1	2/1		0/1 San Diego 1/3
Moscow, USSR	8/4	1/3	0/2	0/2	0/1 Kaunas 0/1 Bronx	1/0 Rekeshoume 1/0 Bronx 1/2 Tallinn 0/1 Poznan 6/4
Munich, GFR	2/2					2/2
Nagoya, Jap	1/1					1/1
New York, Bronx USA	7/7	2/2			1/0 Moscow	0/1 Moscow 1/0 Sioux Falls 9/8
Novosibirsk, USSR	2/1	2/1	2/1	3/1		1/1
Oklahoma City, USA	3/3			1/1	0/1 Holiday Island	2/3
Omaha, USA	4/2	1/2	1/0		0/1 LPZ	4/5
Ostrava, CSSR	1/1					1/1
Peking, China	0/1					0/1
Philadelphia, USA	0/0				1/1 LPZ	1/1
Pittsburgh, USA	2/2					1/0 Los Angeles 0/1 Toronto 0/1 Rochester 1/0
Pont-Scorff, France	0/0				0/1 Krefeld	0/1
Portland, USA	1/1				0/1 San Francisco	1/2
Powell, USA	3/3					0/1 San Antonio 3/2
Location	Total Exports	Births 1984	Cub	Total Mortality	Imports Deaths	Total 1 1985
Poznan, Pol	0/0				0/1 Moscow	0/1
Pueblo, USA	0/0				1/1 Colorado Springs	1/1
Racine, USA	0/0				1/1 LPZ	1/1
Riga, USSR	1/0					1/0
Rochester, USA	4/2			0/1	0/1 Pittsburgh 0/1 Brookfield	0/1 St. Paul 4/2
Rumford, USA	0/0				1/0 LPZ	1/0
Rushden, UK	0/0				1/0 Winnipeg	
Salt Lake City USA	2/4	0/1/0	0/0/1	0/0/1		1/0 Chinning Norton 0/0 1/2 Holiday Island
San Antonio, USA	3/4					0/1 Lodi 1/2 0/1 Powell 3/5
San Diego, USA	1/1	2/0			1/0 Holiday Island	
San Francisco, USA	3/3	1/2	1/1	1/1	0/1 Monroe 1/0 Los Angeles	1/0 Lodi 0/1 Portland 0/1 Marine 3/2

Sapporo. Jap	1/1						1/1
Scotch Plains. USA	1/0						1/0
Seattle. USA	4/4	1/1	1/1	1/2		1/0 Sequim	3/3
Seoul. S. Korea	1/1						1/1
Sequim. USA	0/0				1/0 Seattle		1/0
Shanghai. China	2/1						2/1
Shengyang. China	1/0						1/0
Sioux Falls. USA	0/0				1/0 Bronx		1/0
South Bend, USA	1/1			1/0			0/1

St. Louis, USA	1/2	•1/1	1/0	1/0			1/3
St. Paul. USA	1/0				0/1 Rochester	1/1	
Taiwan. China	0/1						0/1
Tallinn. USSR	1/0				1/2 Moscow		2/2
Tianjin. China	1/0						1/0
Toledo. USA	3/1				0/1 Center Hill	3/2	
Topeka. USA	1/0				2/0 Col. Springs		3/0
Toronto. Can	1/0				0/1 Pittsburgh	1/1	
Tulsa. USA	1/1						1/1
Urumqi, China	3/0						3/0
Weir. USA	0/0				1/0 H. Island		
					0/1 Center Hill		1/1
Winnipeg. Can	3/1					1/0 Rushden	2/1
Wuppertal. GFR	0/0				1/0 Zurich		
					0/1 Helsinki		1/1
Xining. China	4/6	1/1/02		0/1			5/5
Yantai. China	1/0			1/0			0/0
Yinchuang. China	1/1						1/1
Zurich, Switz	5/6					1/0	
						1/1 Eichberg	
						1/0 Wuppertal	2/5

	births	cub mortality	total deaths	
TOTAL (summarized) 332	76	38	55	378
TOTAL (by sexes) 168/164	36/33/11	16/13/9	23/23/9	193/185

REFERENCES

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