Forest reindeer report for 2015

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Wild status in Finland

The forest reindeer is a well protected species in Finland, the sole EU nation that still has a wild population of *Rangifer tarandus fennicus*. Although the species gained protected status as early as 1913, it was already too late and it's probable that the forest reindeer had already died out in Finland at that point. Fortunately it survived on the Russian side of the border, and in the 1950s a few individuals could again be spotted returning from the Soviet Union. In 1958, Finland recorded its first calving since the War. Migration continued, and thanks to intensive protection measures the population slowly began to recover during the 1970s. Today Finland's forest reindeer are divided into three separate populations: one in the eastern parts of the country (Kuhmo), another in central Finland (Suomenselkä) originating from individuals transferred from Kuhmo (*Blomqvist & Richardson 2012*), and lastly a small splinter population of a few dozen animals (Ähtäri) that originated from individuals released from Ähtäri Zoo between 1988 and 1993 (*Blomqvist 2004*). A fourth population at Lieksa, south of Kuhmo, which in the mid-1970s still comprised almost 170 individuals, has now vanished, no animals having been seen in this region since 2005.

The Kuhmo population grew by 11 per cent a year from 900 individuals in 1995 to 1,700 in 2001 when it reached its peak (Figure 1). Figure 1 shows that the Suomenselkä population also expanded from 250 to 800 animals over the same period and peaked at 1,400 in 2006. The Figure reveals that this positive development would later come to a halt, and that eastern Finland's population has continued to decline over the past decade. In 2015 the number of forest reindeer in Kuhmo was thus 700 (*Sirkka 2015*), and today it's only the reintroduced population in Suomenselkä that is showing a positive increase. Suomenselkä's forest reindeer population currently represents 65 per cent of the EU total, and one third of the entire world stock.

New reintroductions underway

In order to safeguard the species' future in the Finnish fauna, a Forest Reindeer Action Plan was drawn up in 2007 (*Ministry of Agriculture & Forestry 2007*). Although the plan mentions population-strengthening measures and further releases, at the time of writing these were not particularly high on the list of priorities. High predation pressure among calves in Kuhmo and consequent high mortality, together with the unexpectedly slow expansion of forest reindeer in the Suomenselkä area, have led to greater emphasis on reintroductions in central Finland where predator density is significantly lower than in the east. In recent years a number of workshops and seminars have been organised with the result that two new Natura 2000 areas have been designated for releases.

The chosen sites are the Seitseminen and Lauhanvuori national parks (Figure 2), both of which have excellent forest reindeer habitats and a lower predator density than the Kuhmo region in eastern Finland. Seitseminen national park was founded in 1982 and was expanded seven years later. It consists principally of ancient woodland in a varied marshy and forested landscape. The reserve covers more than 45 square kilometres surrounded by large, state-owned forests and is therefore a suitable reintroduction area for forest reindeer. Likewise, the 53 square kilometre Lauhanvuori national park was selected because of its ideal forest reindeer biotope, and also because the area was the last part of south-west Finland where forest reindeer lived.

In both parks, 15-hectare enclosures are being constructed where forest reindeer breeding can be managed over five years.

Figure 1. Development of wild forest reindeer population in Finland 1995-2015.

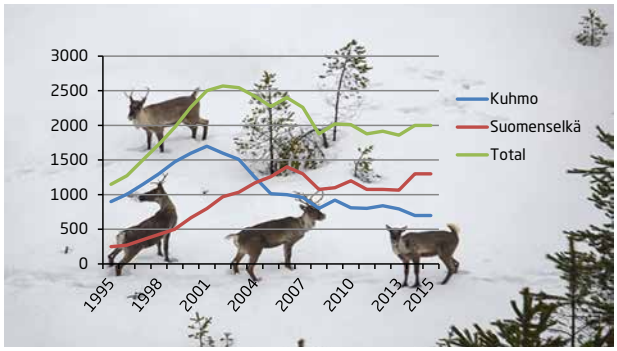


Figure 2. Current distribution range of forest reindeer in Finland and the new reintroduction sites in Seitseminen and Launahvuori national parks where the planned reintroductions will take place in 2017-2021.

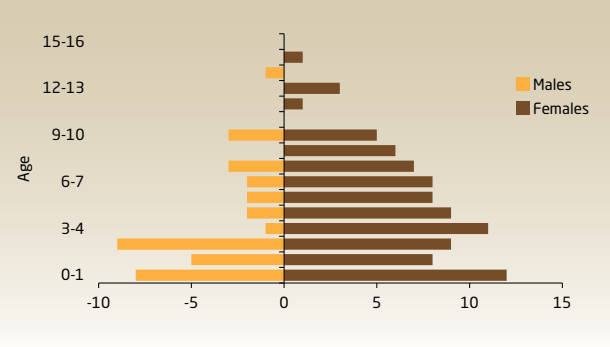
There will be daily control and supervision of the animals in the enclosures, which will be electronically monitored. Electric fences will keep out predators. When reindeer born in the enclosures reach 1.5 to two years of age, they will be released into the Natura areas.

The Ähtäri region (Figure 2) comprises a 100,000-hectare area of forest where a dozen forest reindeer released from Ähtäri zoo at the end of the 1980s are still living. Although the deer have been there for a quarter of a century, the expected rise in numbers has not come about. The prospects for their long-term survival are now considered non-existent without an influx of new genes from outside. It is hoped that an injection of fresh genes might result in the isolated population around Ähtäri accelerating the joining up of the populations in Suomenselkä with the proposed releases in Seitseminen and Lauhanvuori, thereby benefiting the expansion of the species south-westwards.

Figure 3. A Husbandry Guidelines including an updated studbook was published in 2015.

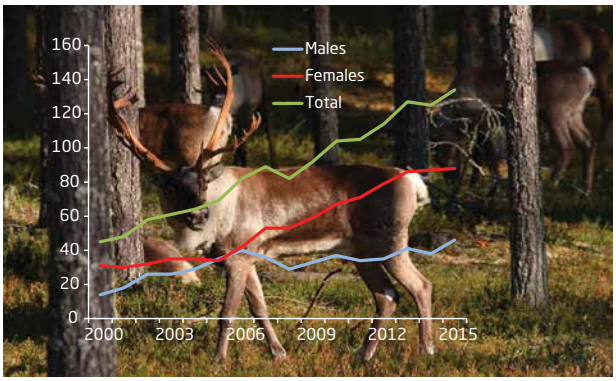
Breeding will be conducted with wild-caught forest reindeer from Kuhmo which will be crossed with captive-born animals from EAZA zoos in Finland and Sweden. At Ähtäri zoo, a five-hectare enclosure has been built which is divided into three sections to act as collecting enclosures for calves born from 2014 to 2016, before the animals can be transferred to the actual breeding enclosures at Seitseminen and Lauhanvuori.

Figure 4. Age and sex distribution of captive population as of 2015.



Finland's Natural Resources Institute (LUKE) is responsible for the capture of new founder animals for breeding, which is planned for a five-year period from 2017 to 2021. Some of the released females will be fitted with GPS collars for monitoring, in compliance with the IUCN's recommendations in Guidelines for Reintroduction. When the breeding period is over, the wild-born individuals will be incorporated into the captive population to

Figure 5. Development of *ex situ* population of forest reindeer 2000-2015.



compensate for the genetic diversity lost by the *ex situ* population in the 40-odd years the species has been kept in captivity.

The captive population in EAZA

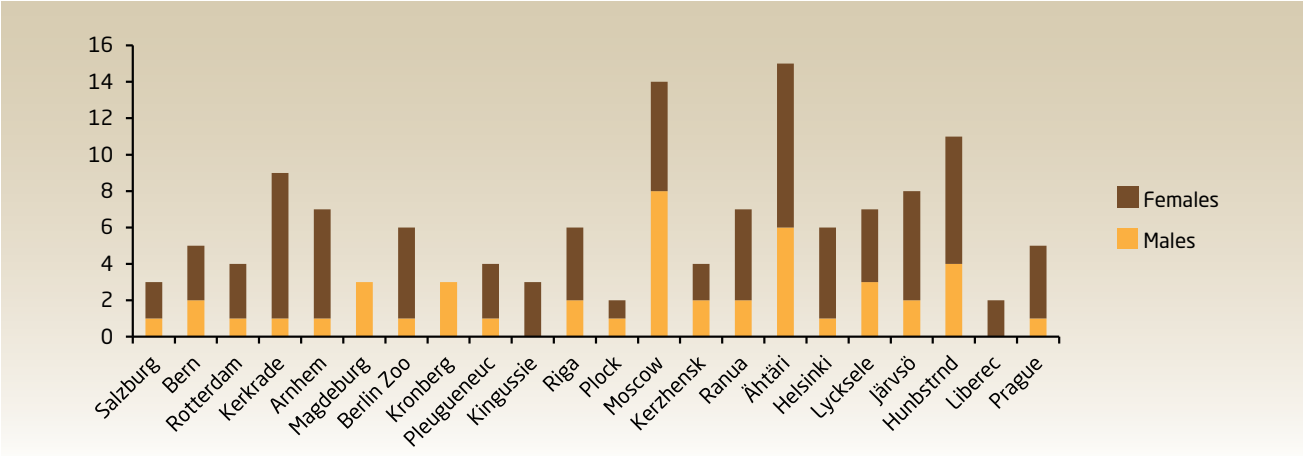
During the past year a husbandry manual for forest reindeer was published (*Blomqvist 2015*) which also is available on EAZA Deer Tag's website. The guidelines also contains an updated studbook (Figure 3) covering all individuals in the ex situ stock. Worth mentioning is also, that the vet from Helsinki Zoo, Sanna Sainmaa, will support the breeding programme as its veterinary advisor.

During 2015, 50 calves were born, of which 60 per cent survived (Table 1). Since 11.10 adults also died, the zoo population increased by only nine animals during the year. Figure 4 shows that the current ex situ stock comprises mainly young animals of reproductive age, and the outlook for continued positive development is thus promising. This is confirmed by Figure 5,

Table 1. Changes in captive forest reindeer population 2015. New participant marked with * *and in italics.*

Participant	Status 1.1.2015	Born	DNS	In	Out	Total Deaths	Status 1.1.2016
Ahtari/FIN	1.10	3.1	1.1	4.0 Ranua	-	2.2	6.9
Arnhem/NL	1.5	1.1.1	1.0.1	-	-	1.0.1	1.6
Berlin Zoo/D	1.6	-	-	-	0.1 Plock	-	1.5
Bern/CH	3.2	1.1	-	-	1.0 Salzburg 1.0 Liberec	-	2.3
Helsinki/FIN	1.4	2.1	1.0	-	-	2.0	1.5
Hunnebostrand/S	1.7	3.1	0.1	-	-	0.1	4.7
Jarvso/S	2.7	2.2.2	0.0.2	1.0 Lycksele	1.0 Lycksele	2.3.2	2.6
Kerkrade/NL	4.7	1.4.2	1.1.2	-	-	4.3.2	1.8
Kerzhensk/RUS	2.3	1.0	1.0	-	-	1.1	2.2
Kingussie/UK	1.4	0.0.1	0.0.1	-	-	1.1.1	0.3
*Kronberg/D**	-	-	-	*3.0 Riga*	-	-	*3.0*
Liberec/CZ	0.2	-	-	1.0 Bern	-	1.0	0.2
Lycksele/S	2.7	2.2	0.2	1.0 Jarvso	1.0 Jarvso 0.2 Ranua	1.3	3.4
Magdeburg/D	3.0	-	-	-	-	-	3.0
Moscow/RUS	5.6	4.1	-	-	-	1.1	8.6
Pleugueneuc/F	1.3	-	-	-	-	-	1.3
*Plock/POL**	-	-	-	*1.0 Rotterdam* *0.1 Berlin*	-	-	*1.1*
Prague/CZ	1.3	1.2	1.1	-	-	1.1	1.4
Ranua/FIN	5.2	1.2	0.1	0.2 Lycksele	4.0 Ahtari	0.1	2.5
Riga/LAT	3.4	2.1	0.1	-	3.0 Kroberg	0.1	2.4
Rotterdam/NL	2.2	0.1	-	-	1.0 Plock	-	1.3
Salzburg/AUT	0.2	-	-	1.0 Bern	-	-	1.2
Total (22 institutions)	**39.86 (125)**	**24.20.6 (50)**	**6.8.6 (20)**	**12.3 (15)**	**12.3 (15)**	**17.18.6 (41)**	**46.88 (134)**

Figure 6. Number of *R. t. fennicus* kept in zoos 2015.



which reveals that the captive population has shown an upward trend over the past decade from 69 forest reindeer in 2005 to 135 animals in 2015. At the start of 2015, the stock comprised 46 stags and 88 hinds divided among 22 zoos in Europe (Figure 6). Two new zoos, Opel Zoo in Kronberg, Germany and Plock Zoo in Poland, signed up to the breeding programme during the year, while three new parks already have reserved young reindeer and will join in 2016.

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