

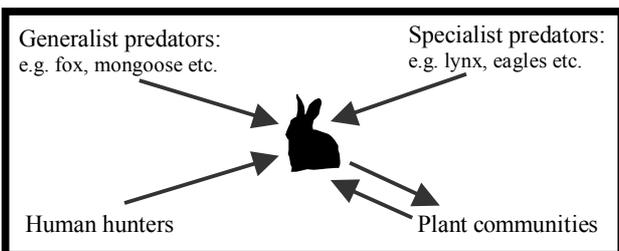
Welcome to the fourth edition of *LynxBrief*, a monthly briefing paper focusing on the conservation of the Iberian Lynx, **the most endangered big cat species in the world**. Example letters are now available on the SOS Lynx website (www.soslynx.org) concerning issues raised each month. Comments on any issue related to the Iberian Lynx can be sent as usual to: lynxbrief@yahoo.co.uk

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The importance of rabbits

This edition of *LynxBrief* focuses on the European rabbit, which is a “keystone species” in Spain and Portugal, and particularly important for the Iberian Lynx. Over 30 animal species feed upon rabbits in the Iberian peninsula and rabbits have an important impact upon plant communities. In addition, rabbits have an economic importance as the basis for small game hunting estates across much of Spain and Portugal.



Specialist rabbit predators such as the Iberian Lynx and Imperial Eagle feed almost exclusively upon wild rabbits, and their populations can only persist where rabbits are present. The Iberian Lynx diet consists of 80-85% rabbits, and a female with cubs will catch up to four rabbits per day. When rabbits are scarce, both survival and reproduction rates of lynx decline.



The decline in rabbits has been one of the three main causes of Iberian Lynx decline (the other two being loss of lynx habitat and high non-natural mortality). Moreover, recovering rabbits will be one of the biggest challenges for conserving Iberian Lynx and other rare predators, as discussed in the next sections.

Wild rabbits originated in Spain and Portugal. However, rabbits have been introduced by humans into much of the rest of western Europe, and other areas such as Australia and parts of South America. Where rabbits have been introduced, they have often spread rapidly (due to the lack of natural predators) and have caused significant damage to agriculture and native ecosystems. Attempts have thus been made to eradicate rabbits from countries such as Australia – see page 2. It is important to stress, however, that the recovery of rabbits in Spain and Portugal is just as important as their eradication elsewhere.



The Decline of Rabbits in Iberia

Rabbit populations in Spain and Portugal have declined drastically over the last 50 years, and it is estimated that rabbit numbers are now just 5% what they were in the 1950s. Moreover, rabbit survival has been patchy, with small areas of high density and many areas with no surviving populations.

The decline in rabbits in Iberia has three main causes:

1. **Rabbit diseases** – Myxomatosis introduced into and spread from France in the 1950s, and; Rabbit Haemorrhagic Disease (RHD) spread through Iberia in the late 1980s. *Myxomatosis is spread by fleas and mosquitos and usually is most prevalent in spring and summer. RHD is spread by direct contact and is most prevalent in winter and spring. The impact of both diseases varies unpredictably year to year.*
2. **Excessive hunting** – by hunters, farmers and land-owners, either for income from commercial hunting or to reduce the impact of rabbits upon crops. *Some farmers have contributed to local rabbit extinctions by killing those few rabbits that survive disease epidemics. In addition, some hunters do not adhere strictly to hunting seasons or limits on bag counts.*
3. **Habitat change** – urbanisation, exotic forestry and the change from extensive to intensive agriculture have reduced available rabbit food and habitat. *Rabbits ideally require a mosaic of scrub and grass to provide food and shelter from predators.*

Rabbit diseases, excessive hunting and habitat change have combined with the large number of rabbit predator species to prolong and exacerbate the decline in rabbits; this is despite the high reproductive rates of rabbits (up to 12 litters per year) that have led to rabbit “plagues” in other parts of the world.

The decline in rabbits has helped to bring the Iberian Lynx (and the Imperial Eagle) to the edge of extinction, and although the lack of rabbits in a small area can be partly compensated for by supplying extra food in enclosures for lynx (e.g. in Doñana Biological Reserve), this is not practically possible over large areas. Thus the successful recovery of Iberian Lynx in the future will be partly dependent upon the sustained recovery of wild rabbits. This will be a big challenge because rabbit recovery to date has not been very successful and a lot will need to be learned in a short time, as discussed below.

Recovering Rabbits in Iberia

Due to the importance of rabbits for endangered predators (e.g. Iberian Lynx) and the hunting community, and the length and severity of rabbit decline, quite a lot of work has been done to attempt to recover rabbit populations by governments, NGOs and scientists. This work has included: reintroducing captive bred rabbits, developing vaccines against rabbit diseases, improving rabbit habitat, controlling common rabbit predators and building artificial rabbit warrens. Unfortunately, however, these projects have not yet been successful in achieving **long-term** rabbit recovery: some projects have increased rabbit densities for a few years, but in most cases rabbit densities have fallen again after 4-5 years when rabbit diseases have returned.

Several reasons have been suggested to explain the lack of successful rabbit recovery to date, including that:

1. There is insufficient general awareness of the ecological importance and decline of rabbits in Iberia, at the local, national and international levels.
2. Some hunting, agriculture and land-use policies and practices continue to contradict rabbit recovery.
3. Attempts to recover rabbits have not been going long enough, with many projects only a few years old.
4. There is a lack of scientific understanding as to how the factors causing rabbit decline interact, and as to why some areas still support rabbits and others not.
5. There has been insufficient monitoring of rabbits to provide accurate data about rabbit decline, current presence and the success of recovery projects. Moreover, rabbit monitoring that has been undertaken has used a diversity of methods, such that results from different studies cannot be compared.
6. There has been a lack of information sharing and collaboration between projects and organisations, with past mistakes often being repeated.
7. There is still no effective way to control the long-term impact of diseases on wild rabbit populations.

In order to progress rabbit recovery in the future the second International Iberian Lynx Seminar (Cordoba, December 2004) recommended that an Iberian Rabbit Strategy be created. In addition, personnel from the Spanish Environment Ministry are currently working to record and analyse the many different rabbit recovery projects, to recommend new protocols for rabbit monitoring and recovery techniques. These findings will be published in Summer 2005. It has also been proposed that a rabbit conference be organised to help raise the profile of rabbits, and facilitate rabbit recovery in Spain and Portugal.

Those interested in encouraging the creation of an Iberian Rabbit Strategy should write to the Spanish and Portuguese Environment Ministers, using the details below:

Excma. Sra. D^a. Cristina Narbona Ruiz
Ministra de Medio Ambiente
Plaza de San Juan de la Cruz s/n, 28071 Madrid, SPAIN

Exa. Dr. Francisco Nunes Correia,
Ministro do Ambiente,
Rua de "O Século" 51, 1200-433 Lisboa, PORTUGAL

Genetic Modification: hope or threat?

Due to the devastating impact of both Myxomatosis and Rabbit Haemorrhagic Disease, quite a lot of effort has been put into developing vaccines against these diseases. Initial work concentrated on developing vaccines for captive and domestic rabbits. These vaccines need to be injected into each individual rabbit and generally only confer immunity for a short period (e.g. 6 months). These conventional vaccines have also been used by those releasing captive bred rabbits back into the wild, but with limited impact, given that the vaccines are short lived and it is impossible to vaccinate all the offspring of reintroduced rabbits.



Given these limitations, some hunting groups, conservationists and biotechnology companies have more recently been focusing on producing GM live vaccines. The advantage of a GM live vaccine is that it is a modified virus that can spread between wild rabbits, conferring immunity to diseases without the need to inject each individual rabbit. In addition, it has been possible to genetically engineer a single live vaccine (LapinVac) to confer immunity to both myxomatosis and RHD.

There are, however, many problems with LapinVac. Firstly, as a genetically modified live virus, once released it would not be possible to control its spread or determine the long-term effects this new virus might have upon the environment and human health. Secondly, LapinVac could easily spread (as conventional diseases have) to other countries where rabbits have been introduced and rabbit diseases are important to limit rabbit numbers. This could increase the negative impact of rabbits in these countries. LapinVac is currently being held up at the EU approval stage, partly due to these concerns. In addition, there is a lack of assays to evaluate the effectiveness of this kind of vaccine under field conditions.

More worryingly for rabbits and lynx in Spain and Portugal, researchers and some conservationists in Australia have been working hard to develop a genetically modified live virus that makes rabbits infertile. It is hoped that this new immunocontraceptive virus might be the "magic bullet" to eradicate rabbits, removing a significant burden to agriculture and native ecosystems. The obvious problem, however, is that once released in Australia, this new deadly virus could spread to other parts of the world, including eventually to Spain and Portugal. This might be expected given the history of previous disease spreads and the fact that some farmers in Europe might be keen to have the immunocontraceptive virus here. If this disease did arrive in Spain and Portugal it could reduce rabbits number further – potentially to extinction – with a devastating impact upon the Iberian Lynx and other predators.

Researchers have already managed to produce a virus that makes rabbit infertile in the short-term, and the production of a virus that makes rabbits permanently infertile is a possibility in the next few years. Those concerned about the possible long-term spread of this immunocontraceptive virus to the rest of the world, including to Iberia, should write to the Australian Government's Office of the Gene Technology Regulator:

Office of the Gene Technology Regulator
MDP54 PO Box 100 Woden ACT 2606, Australia
Email ogtr@health.gov.au

Update on Spanish Natura 2000 proposal

The previous edition of *LynxBrief* focused on the importance of the EU Natura 2000 initiative as a mechanism to help protect and restore sufficient inter-connected areas of habitat for the long-term recovery of the Iberian Lynx. In particular, it was stressed that there is a need to expand the current Spanish Natura 2000 proposal to include:

1. Areas in **Castilla-La Mancha** to link Montes Toledo with the Sierra Morena, to allow Iberian Lynx to communicate between these two zones in the future.
2. Viñas de Peñallana (**Andalucía**), where lynx already live and breed, and where illegal and proposed urbanisation threatens lynx survival and recovery.
3. Areas in South Western **Andalucía** in between Doñana and Portugal, to allow the isolated Doñana population to be reconnected with the Sierra Morena.

(See map in the previous *LynxBrief* for exact locations)

The EU and the Spanish Government are each partly responsible for co-ordinating and approving the Spanish Natura 2000 proposal. However, in addition, the Governments of the Spanish Autonomous Regions also have a key role in proposing Natura 2000 areas. It is thus important that those concerned about the need to expand the Spanish Natura 2000 proposal also write to the Junta de Castilla-La Mancha (concerning areas between Montes Toledo and the Sierra Morena) and the Junta de Andalucía (concerning Viñas de Peñallana and areas in between Doñana and Portugal), at the following addresses:

Junta de Andalucía:

**Excmo. Sr Presidente de la Junta de Andalucía,
Dr Manuel Chaves, Palacio de San Telmo,
Avenida de Roma, 41071 Sevilla, SPAIN
email: manuel.chaves@juntadeandalucia.es**

Junta de Castilla-La Mancha:

**Excmo. Sr Presidente de la Junta de Castilla-La Mancha
José María Barreda Fontes, Palacio de Fuensalida Plaza del
Conde 2, 45071 Toledo, SPAIN**

Football to fund Lynx Conservation!



A recently created Portuguese football team (Algarve United) will be donating 10% of ticket sales and membership fees to fund long-term Iberian Lynx conservation in Portugal. This money will be used to fund improvement and recovery of lynx habitat, particularly in areas affected by forest fires in recent years in the Algarve.

Algarve United have recently won promotion to the Portuguese Third Division and have the Iberian Lynx as their logo. This promotion should help raise the profile of the Iberian Lynx, and raise additional funds for future lynx habitat improvement and recovery. See: http://news.bbc.co.uk/1/hi/programmes/from_our_own_correspondent/4579015.stm

lynxbrief@yahoo.co.uk

Conclusions

It is important that all those interested and working in lynx conservation (in research, conservation and/or lobbying) work together to ensure the survival of this beautiful and important creature, particularly in the face of conflicting policies and interests.

This edition of *LynxBrief* has focused on one particular aspect of lynx conservation – recovering wild rabbits – which will be essential for long-term lynx recovery. In particular it is **RECOMMENDED** that those concerned about rabbit (and thus lynx) recovery should write to the Spanish and Portuguese Governments to call on them to create an Iberian Rabbit Strategy.

It is also **RECOMMENDED** that those concerned about rabbit (and thus lynx) recovery should write to the Australian Government to urge them not to approve the release of new GM rabbit immunocontraceptive viruses.

Finally, anyone concerned about the need to expand the Natura 2000 proposal in Spain should write to both the Junta de Castilla-La Mancha and the Junta de Andalucía.

LynxBrief sends best wishes to all those interested and working in lynx (and rabbit) conservation, and looks forward to receiving more of your comments.

About the author

LynxBrief is edited by **Dan Ward**, who has a degree in Natural Sciences (Cambridge University), a MSc specialising in Environmental Policy and experience in conservation projects in Scotland, New Zealand, Ecuador and Spain. He accepts no responsibility for the use that may be made of this report.

About SOS Lynx

SOS lynx is a campaign organisation set up in 2000 to promote the conservation of the Iberian Lynx, and works mainly at the International level. For more information about, and to support, SOS lynx, see: www.soslynx.org

About Ecologistas en Acción – Andalucía

Ecologistas en Acción – Andalucía is a federation of ecological groups that works to conserve the Iberian Lynx and the natural environment in general, and promotes peace and solidarity. Ecologistas en Acción is not necessarily identified with all the contents of this publication. You can contact the organisation by email at: andalucia@ecologistasenaccion.org

About One Planet Living and Pelicano SA

In 2001, UN Secretary General Kofi Annan said: “Our biggest challenge this new century is to take an idea that seems abstract – sustainable development – and turn it into a reality for all the world’s people”. BioRegional and WWF have sought to take up this challenge. One Planet Living (OPL) is a joint initiative that aims to make it easy, attractive and affordable for people everywhere to adopt sustainable lifestyles, and at the same time support nature conservation. Pelicano SA, a Portuguese developer, is a Founding Global Partner of the OPL initiative, and is directly supporting lynx conservation in Portugal.