

Iberian Lynx (*Lynx pardinus*)

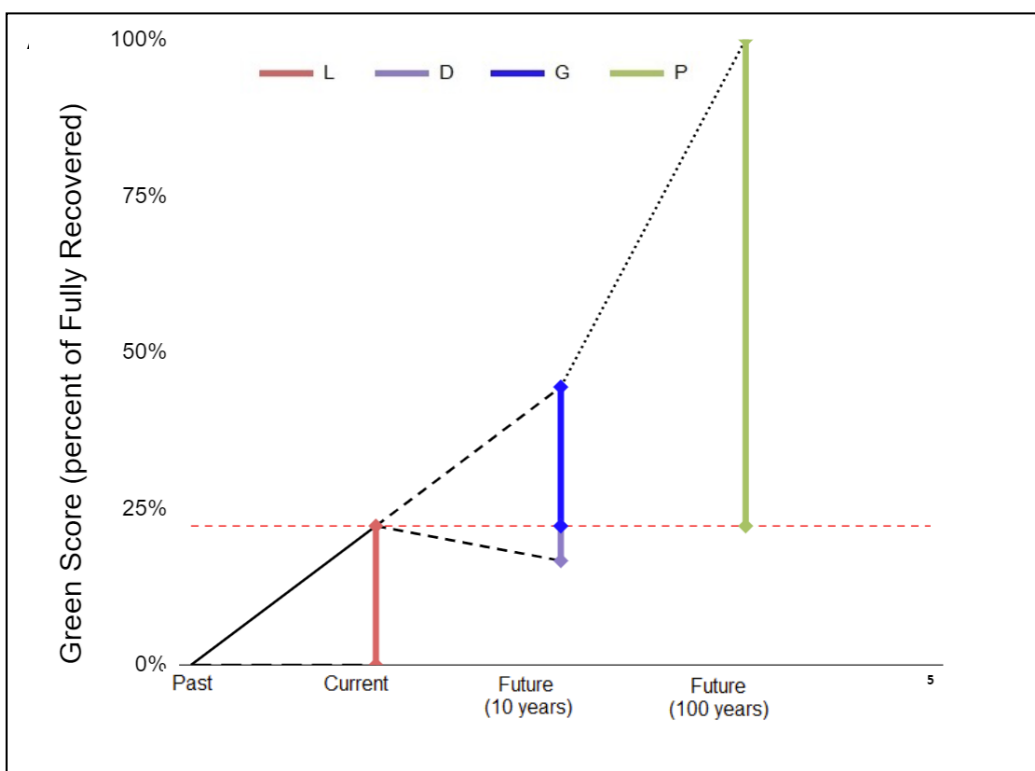


Figure S1. Graphical representation of the conservation metrics based on the Green Scores. Key: Vertical arrows represent the four conservation metrics: L – Conservation Legacy (may not appear if current and counterfactual states are the same); D – Conservation Dependence (may not appear if current and future-without-conservation states are the same); G – Conservation Gain (may not appear if current and future-with-conservation states are the same); P – Recovery Potential (may not appear if current and potential states are the same). Horizontal red dashed line represents the Current Green Score. Solid black line: observed change in the Green Score of the species (ignore it if "Former" state is not specified). Long-dashed black line: (counterfactual) past change expected in the absence of past conservation efforts. Dashed black lines: future scenarios of change expected with and without current and future conservation efforts. Dotted black line: long-term potential change expected with future conservation innovation and efforts.

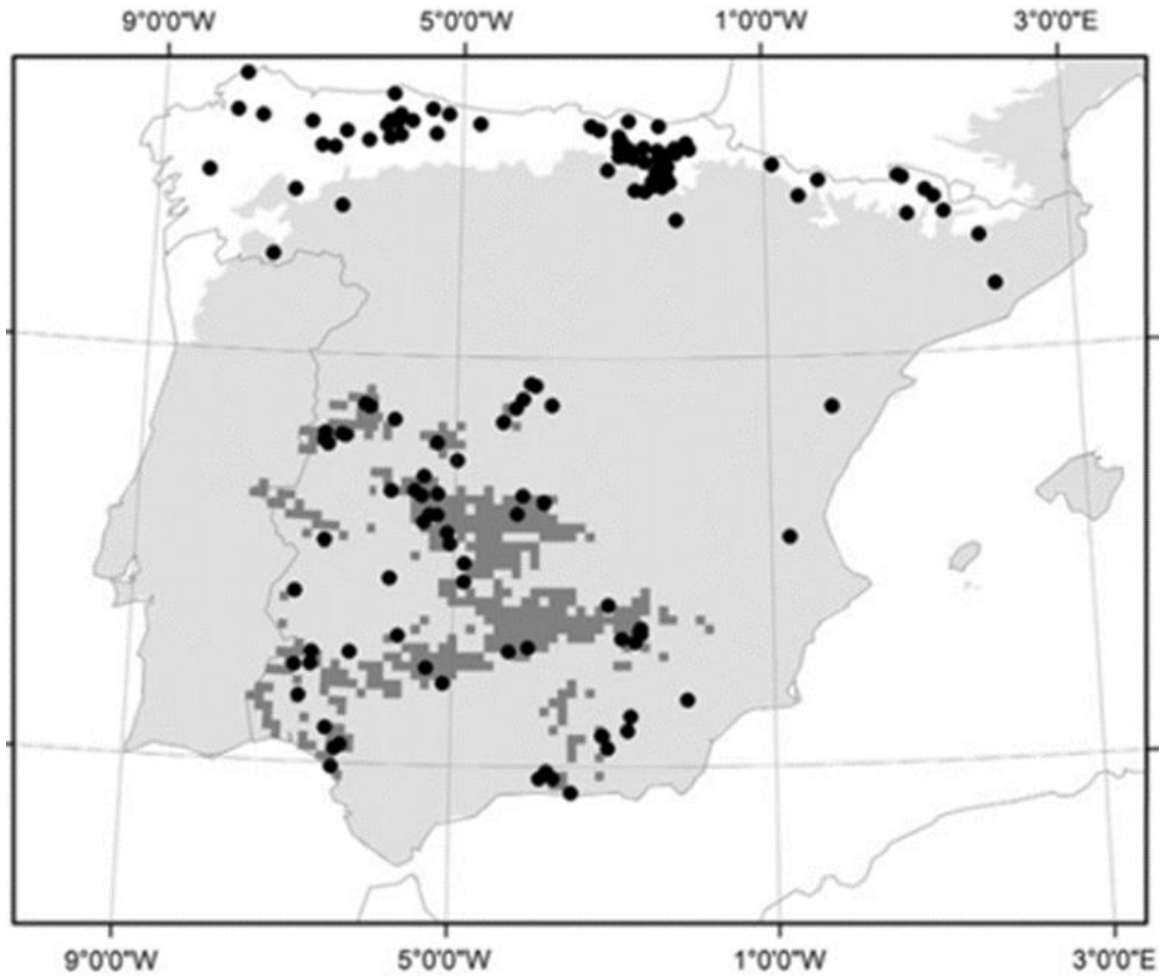


Figure S2. The species' indigenous range in southwestern Europe. Distribution records were extracted from historic documents dated between the 16th and 19th centuries. The authors of this compilation suggest that lynx records (black dots) in the Atlantic and Alpine bioclimatic areas (unshaded northern areas in the map) are likely to represent Eurasian Lynx occurrence, not Iberian Lynx. Records in the Mediterranean bioclimatic region (light shade) represent Iberian Lynx occurrences. Dark shading is the Iberian Lynx distribution in 1950 on a 10 km grid (after Rodríguez and Delibes 2003). Source: Clavero and Delibes (2013), Figure 1. Clavero and Delibes (2013) assume that all records in Northern Iberia belonged to Eurasian Lynx due to the Atlantic climate there. However, Villalpando-Moreno (2020) showed the occurrence of both species up in the north.

Table S1. Conservation actions relevant to the species that were considered in the assessment. Actions are either past, ongoing, planned for the next 10 years, or possible to implement in the long-term aspiration scenario.

Actions with Codes	Notes
1.2. Land/water protection: Resource & habitat protection	It is important to protect habitat and the physical/functional connectivity of habitat patches. Work is being done to identify areas of functional connectivity between subpopulations.
2.1. Land/water management: Site/area management	
2.2. Land/water management: Invasive/problematic species control	Domestic and feral dogs and cats.
2.3. Land/water management: Habitat & natural process restoration	
3.1.1. Harvest management	The species is subject to predator control, but not actively hunted; there is some bycatch.
3.3.1. Species re-introduction: Reintroduction	Protocol has been created to guide the selection of reintroduction areas, and reintroduction work has already begun in four new areas: in 2022, Sierra Arana (Andalusia); in 2023, Altos de Lorca (Murcia) and Valdecañas (Extremadura); in 2024, Campos de Hellín (Castilla la Mancha).
3.4.1. <i>Ex-situ</i> conservation: Captive breeding/artificial propagation	
3.4.2. <i>Ex-situ</i> conservation: Genome resource bank	
4.1. Education and Awareness: Formal education	
4.2. Education and Awareness: Training	A trainers' training project is underway, aimed at security forces, environmental agents, driving schoolteachers and primary and secondary school teachers.
4.3. Education and Awareness: Awareness & communications	Work to strengthen the collaboration with different stakeholders such as hunters, gamekeepers, livestock breeders, landowners, etc. is ongoing.
5.1.2. Legislation, National level	
5.1.3. Legislation, Sub-national level	

Actions with Codes	Notes
5.2. Policies and regulations	Mitigation of roadkill; anti-poaching laws (enforcement varies between regions).
5.3. Private sector standards & codes	Environmental Impact Assessments (avoid lynx areas for building, intensive or hyper-intensive agriculture, mining, reservoirs, highways, or any other activity or land use destroying habitat or generating permanent disturbance) and mitigation measures for renewable energy plants, roads, habitat management for big game hunting, forestry, agriculture, and extensive farming (not always enforced). Safety measures in irrigation ponds in agricultural landscapes used by Iberian Lynx.
5.4.1. Compliance and enforcement - International level	This is a lynx reintroduction project condition of EU funding for development.
5.4.2. Compliance and enforcement- National level	
5.4.3. Compliance and enforcement- Sub-national level	
6.4. Livelihood, economic & other incentives: Conservation payments	Conflict with farmers can be resolved through payments to prevent and compensate for attacks. Prevention: repairing poultry houses, providing electric shepherds, advising farmers, and active listening. Compensation: when an attack on livestock is reported, an expert assessment is made and if it is confirmed that the attack was caused by an Iberian Lynx, the damage caused is compensated.
6.5. Livelihood, economic & other incentives: Non-monetary values	

Table S2. Threats relevant to the species that were considered in the assessment. The threats are either past, ongoing, or expected to arise in the next 100 years.

Actions with Codes	Notes
1.1 Residential & commercial development: Housing & urban areas	
1.2 Residential & commercial development: Commercial & industrial areas	
1.3 Residential & commercial development: Tourism & recreation areas	
2.1.1 Agriculture & aquaculture: Annual & perennial non-timber crops: Shifting agriculture	
2.1.2 Agriculture & aquaculture: Annual & perennial non-timber crops: Small-holder farming	Structural and functional simplification of agricultural landscapes.
2.1.3 Agriculture & aquaculture: Annual & perennial non-timber crops: Agro-industry farming	Potential bioaccumulation of pesticides via rabbits (unknown).
2.2.2 Agriculture & aquaculture: Wood & pulp plantations: Agro-industry plantations	
2.3.3 Agriculture & aquaculture: Livestock farming & ranching: Agro-industry grazing, ranching or farming	Red Deer farming, habitat management orientated around other large game species, and substitution of non-irrigated traditional olive groves and vineyards with intensive or hyper-intensive irrigated variants that rabbits are unlikely to use.
3.2 Energy production & mining: Mining & quarrying	Causes polluted water, habitat destruction, and an increase in traffic.
3.3 Energy production & mining: Renewable energy	
4.1 Transportation & service corridors: Roads & railroads	
5.1.1 Biological resource use: Hunting & collecting terrestrial animals: Intentional use (species being assessed is the target)	
5.1.2 Biological resource use: Hunting & collecting terrestrial animals: Unintentional effects (species being assessed is not the target)	In some areas where the lynx is present, some hunting reserves are orienting their activity towards big game, which means changes in the management model to

Actions with Codes	Notes
	favour these species that may be detrimental to small game (i.e., the Lynx's prey). Likewise, big game species compete with the wild rabbit for resources and, as in the case of the Wild Boar, prey on it, depleting the lynx's prey source.
5.1.3 Biological resource use: Hunting & collecting terrestrial animals: Persecution/control	The global poaching rate is estimated at 5%. Populations in Guadalmellato and Guarrizas have poaching rates of 12% and 9%, respectively. It can be deduced that there is direct persecution in these areas. In Guadalmellato poaching has prevented a population increase. This data is relevant for several of the conservation impact scenarios.
6.1 Human intrusions & disturbance: Recreational activities	In the era of social networks, everything is exposed to being seen and visited by the whole world. In some cases, excessive pressure from nature tourism can have negative effects.
7.1.1 Natural system modifications: Fire & fire suppression: Increase in fire frequency/intensity	Wildfires.
7.2.1 Natural system modifications: Dams & water management/use: Abstraction of surface water (domestic use)	
7.2.2 Natural system modifications: Dams & water management/use: Abstraction of surface water (commercial use)	
7.2.3 Natural system modifications: Dams & water management/use: Abstraction of surface water (agricultural use)	
7.2.4 Natural system modifications: Dams & water management/use: Abstraction of surface water (unknown use)	Construction of new dams will destroy good habitat for rabbits in valley bottoms. Threat 7.2.7. refers to dams for agricultural use but this impact arises from dams of any kind.
7.2.7 Natural system modifications: Dams & water management/use: Abstraction of ground water (agricultural use)	Removes natural grass for rabbits.

Actions with Codes	Notes
7.2.9 Natural system modifications: Dams & water management/use: Small dams	Past threat, future risk.
7.2.10 Natural system modifications: Dams & water management/use: Large dams	Past threat, future risk.
7.2.11 Natural system modifications: Dams & water management/use: Dams (size unknown)	Past threat, future risk.
8.1.1 Invasive & other problematic species, genes & diseases: Invasive non-native/alien species/diseases: Unspecified species	Viral strains or other disease agents (or their vectors) coming from outside with the aid of the global trade; direct e.g. from domestic cats, or indirect e.g., rabbit diseases.
8.2.2 Invasive & other problematic species, genes & diseases: Problematic native species/diseases: Named species	Feral dogs; domestic and feral cats (disease reservoirs).
8.5.2 Invasive & other problematic species, genes & diseases: Viral/prion-induced diseases: Named "species" (disease)	Indirectly through rabbits; spillover from domestic animals or wild reservoirs.
9.2.2 Pollution: Industrial & military effluents: Seepage from mining	One case recorded.
9.3.1 Pollution: Agricultural & forestry effluents: Nutrient loads	Eutrophication reduces grassland diversity; may affect rabbits (unknown).
9.3.3 Pollution: Agricultural & forestry effluents: Herbicides & pesticides	
9.4 Pollution: Garbage & solid waste	Plastic remains can accidentally be consumed. There is a case of a dead lynx being found with remnants of plastic gloves in its stomach.
11.1 Climate change & severe weather: Habitat shifting & alteration	
11.2 Climate change & severe weather: Droughts	
11.3 Climate change & severe weather: Temperature extremes	
11.4 Climate change & severe weather: Storms & flooding	
12.1 Other threat	Myxomatosis and Rabbit Haemorrhagic Disease outbreaks and new variants.

References

- Clavero, M. and Delibes, M. 2013. Using historical accounts to set conservation baselines: the case of Lynx species in Spain. *Biodiversity and Conservation* 22: 1691–1702.
- Rodríguez, A. and Delibes, M. 2003. Population fragmentation and extinction in the Iberian lynx. *Biological Conservation* 109: 321–331.
- Villalpando Moreno, A. 2020. *Lynx* sp. at Spain during XIXth century. A case of study from Ecohistory. *Riparia* 6: 74–150.

Appendix 1. Assessor Self-Review

1. Disclose any potential conflicts of interest, which could bias the assessment.

A number of assessors are actively involved in lynx conservation.

2. Is there any discrepancy between this assessment and the Red List assessment for the species? If so, comment on the likely reason for this discrepancy.

No (this was done at the same time as the RL reassessment)

3. Review the impact that you assigned to the various threats and conservation actions. Would the trajectory of the species be very different if other choices were made? If so, review your justification for these choices. If appropriate, widen the bounds on tabs 4 and 5-8 (change the lower and upper plausible values) to reflect the uncertainty introduced by the possibility of these other choices. How, if at all, did this review question cause this assessment to change? If no changes were needed, please write "no changes".

No changes

Appendix 2. Reviewers Comments

1. Disclose any potential conflicts of interest which could bias your review.

All reviewers: none

2. After reviewing the assessment, and given any personal knowledge of the species and the region, can you think of any other factors which could affect species' status besides those listed by the assessor(s)?

All reviewers: none

3. Can you think of any other conservation actions which may have had an impact on species' status besides those listed by the assessor(s)?

All reviewers: none

4. Do you disagree with the assessor(s)' evaluation of the impact of any of the factors or conservation actions on the species? E.g., do you disagree with the evaluation of the extent (spatial or temporal) of the factor/action, or its magnitude (in the case of actions, effectiveness)?

Procedural reviewer: no

Species info reviewer 1: Rabbit diseases play a central role in the future prospects of the lynx. Disease outbreaks are totally unpredictable. This fact introduces significant uncertainty into the predictions and perhaps it is not sufficiently explained or is not given the relevance it deserves.

Poaching in general is underestimated. With the data of the individuals marked during the Life Iberlince, it was estimated that the average poaching rate is 5%, in some populations such as Guadalmellato it reaches 12% and has prevented the increase in the population. This data is relevant for several scenarios. Direct persecution based on the number of individuals killed by gunshots seems to be underestimated.

Species info reviewer 2: The Green List seems to me to be a very powerful evaluation tool. It is much more complete than I thought and considers all the important issues to make an adequate evaluation of a species, as long as the necessary information exists, as is the case with the lynx.

Species info reviewer 3: I share the evaluation of the advisors. He considers it tight and rigorous in all scenarios. For the corresponding assumptions, the annual growth rate of 20% of the Iberian Lynx population, the new areas of reintroduction (perhaps not those that are going to begin in the short term), the causes of non-natural mortality maintained at thresholds that they do not condition the positive trend of the species, the good social acceptance of the Iberian Lynx in all areas (possibly the key to success), genetic management work, etc. I have missed, however, that in the chapter on conservation actions, connectivity work does not have a specific section. It is to be expected, as is already the case, that in the future many of the resources allocated to conservation will be allocated to connectivity and habitat defragmentation tasks.

It is true what the previous reviewer comments about the uncertainty of the wild rabbit population, but it should not be a major problem, especially with the populations that are being created and are planned to be created in areas of high abundance of this species. The cause that brought the Iberian Lynx to the brink of extinction was persecution, not the lack of rabbits. Although this obviously also had an influence.

Currently, unnatural mortality is not conditioning the positive trend of the species, although unfortunately it remains at rates (6.5% roadkill and 4.9% illegal persecution), which are very difficult to reduce.

Finally, another line of work in which we have to continue investing resources and efforts is the genetic management of the species, given its low genetic diversity.

- 5. Do you disagree with any of the probabilistic assertions made by the assessor(s) (i.e., do you disagree that on the balance of the evidence, a certain outcome would be observed)?**

All reviewers: no

- 6. Do you feel that uncertainty in outcomes has been appropriately accounted for?**

All reviewers: yes

- 7. Do you have knowledge of any conflict of interest on the part of the assessor(s) that they did not document?**

All reviewers: no

- 8. Do you have any concerns about the assessment process which was employed?**

Procedural reviewer; species info reviewers 2 and 3: None

Species info reviewer 1: It would be desirable if more interest groups and/or competent administrations had participated.

- 9. What is the effect (if any) of your answers to 1-8 on the final assessment made by the assessor(s)?**

All reviewers: none

- 10. Do you recommend that the assessment be referred for further evaluation?**

All reviewers: no