



REPORT ABOUT THE DEVELOPMENT OF THE CONSERVATION PROGRAMMES OF THE IBERIAN LYNX IN ANDALUSIA

A. – CONSERVATION PROGRAMMES ALREADY IN ACTION

1. PROJECTS FORM THE REGIONAL ENVIRONMENTAL MINISTRY, JUNTA DE ANDALUCIA (ANDALUSIAN REGIONAL GOVERNMENT):

- “PROGRAM OF PLANS OF ACTION FOR THE CONSERVATION OF THE IBERIAN LYNX IN ANDALUSIA”.
- CONDITIONING OF THE CHORTAL AND PALANCO FORESTS (UNDER NEGOCIATION).
- COMPLEMENTARY PLANS OF ACTINO FOR THE CONSERVATION OF THE IBERIAN LYNX (UNDER NEGOCIATION).

2. PROJECTS OF THE EUROPEAN COMMISSION:

- LIFE NAT/E/8609: “RECUPERATION OF THE IBERIAN LYNX POPULATION IN ANDALUSIA”.

This project is being developed by the Regional Environmental Ministry, as the beneficiary, and Ecologists in Action, CBD Habitats Foundation, General Direction of Nature Conservation (Regional Environmental Ministry) and the following hunting associations: ATECA, APROCA and the Andalusian Hunting Federation, all of them as members.

B. – DEVELOPMENT OF THE CONSERVACION PROGRAMMES

1. - INTRODUCTION

This report describes the actions plans that are being developed by the Regional Environmental Ministry of the Junta de Andalucía (Andalusian Regional Government), focused on the Conservation of the Iberian Lynx in Andalusia. These actions are being financed by the Regional Environmental Ministry of the Junta de Andalucía (Andalusian Regional Government) and by the European Commission through LIFE02 NAT/E/8609. The actions described here are those executed from October 2001 until the end of January 2003.

2. - WORKS DEVELOPED:





2.1. – MONITORING OF THE IBERIAN LYNX POPULATIONS: Different methodologies have been used for the monitoring of the Iberian Lynx population:

2.1.1. – SYSTEMATIC SAMPLING IN 5 X 5 KM SQUARES: A total of 301 squares have been sampled, 752,500 has, that correspond to more than 1,500 hours of walking through the countryside. Three hundred seventy-one systematic walks have been carried out, visiting a total of 295 farms/private properties. During these walks excrements are gathered, the different species of carnivores that are present are detected, locations are selected for setting photographs and relative abundance of prey species (rabbit and partridge) are taken. Only in 52 squares (41 farms) has the unmistakable presence of the Iberian Lynx been confirmed (photographs or DNA in excrements). In all of these cases the location have been made in A zones, that is to say, the primary and traditional areas of the species (FIGURE 1. -).

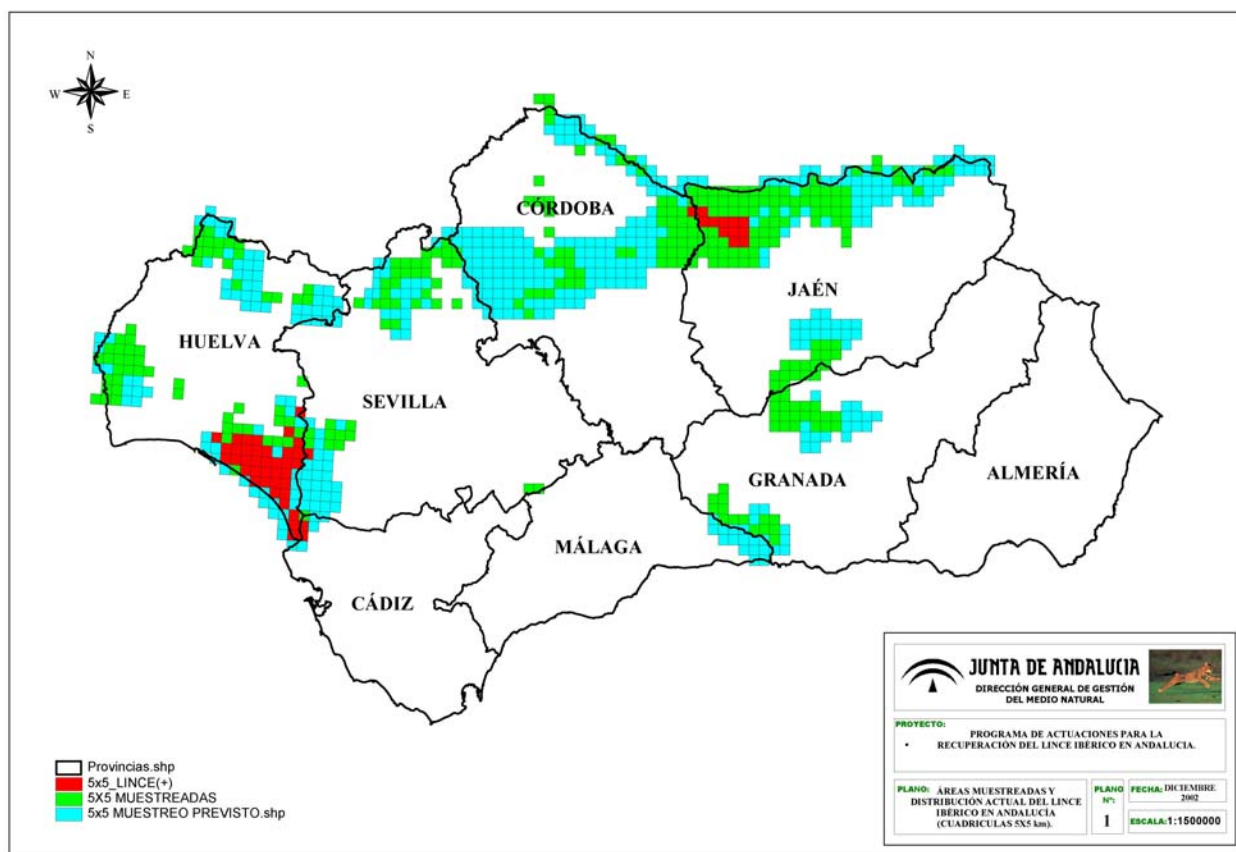


FIGURA 1. – Current distribution of the Iberian Lynx in Andalusia in 5 x 5 km squares.





2.1.2. – TAKING REMOTE PHOTOGRAPHS: by means of pre-set cameras (more than 27,000 cameras/night are used) more than 773 photographs of the Iberian Lynx have been obtained. By means of the comparison of fur patterns 109 distinct animals have been identified (74 in Andújar-Cardena and 33 in Doñana). This action is developed in co-ordination with ADENA/WWF, CBD Habitats Foundation and the Regional Environmental Ministry.

2.1.3. – GENETIC ANALYSIS OF THE EXCREMENT: The excrement gathered during the systematic walks has been analysed by the Doñana Biological Station (Superior Council for Scientific Investigation). Up to right now a total of 557 excrements have been analysed, of which only 169 contained Iberian Lynx DNA (30.34 %).

2.2. - IBERIAN LYNX REPRODUCTION: During the monitoring tasks, a minimum of 24 females capable of reproduction has been located (8 in the Doñana area and 16 in Andújar-Cardena). Another 6 females could have reproduced there is no conclusive proof. The minimum reproductive success of the females with confirmed reproduction in Andújar (it has not been possible to be certain about the true size of some litters) has been 2.2 cubs for each female capable of reproduction. Some adult females controlled by means of set-up photography probably have not reproduced or have had early, and as a result the global reproductive success (cub / adult female) has been overestimated.

2.3. – MANAGEMENT AGREEMENTS

Due to the fact that the majority of the Iberian Lynx population is found on private property, any management measure associated with the Iberian Lynx needs a strict collaboration between the Administration and the owners of said farms. To achieve this, one of the first priorities has been the signing of a collaboration agreement between the Regional Environmental Ministry and said private farms.

With the data contributed for the elaboration of section 2.2, the farms and zones are prioritised as seen fit. Up to right now, a total of 68 agreements have been signed with private farms (Regional Environmental Ministry 90,067 has, CBD-Habitat Foundation 12,817 has. and ADENA/WWF 2,670 has.) plus 10,301 has that the Administration owns in the region of Cardena-Andújar. All of this makes a total of 116,155 has over which diverse habitat management measures are being executed, focused principally in fostering the rabbit populations, these being the main prey of the Iberian Lynx and improving their habitat.





2.4. – ACTION PLANS AND MEASURES DEVELOPED

2.4.1. – IMPROVE THE PREY POPULATIONS, CONNECTION BETWEEN THE IBERIAN LYNX POPULATIONS AND IMPROVING THE REPRODUCTION CONDITIONS:

Given that the distribution of the rabbit highly conditions that of the Iberian Lynx, the improvement of the prey populations, indirectly implies an improvement in the survival conditions of the Iberian Lynx (reproduction, connection between populations, etc.). For all of this in areas where the Iberian Lynx is present or in its surroundings the following action plans have been executed:

- Seeding pasturelands with foraging species to improve the rabbit populations.
- Manual clearing and fertilising, to augment locally the availability of trophic resources for the rabbit.
- Controlled rabbit repopulation: For the development of this measure the previous execution of a series of action plans (see below) have been necessary. A total of more than 1,800 rabbits have been repopulated.
- Establishing fixed and mobile rabbit traps for their live capture. These captures are carried out in lynx-free areas to then carry out repopulations in lynx zones.
- Creation of quarantines to assure the best possible success in the rabbit repopulations (vaccination and parasite elimination), before the actual repopulations take place.
- Construction of enclosed areas for nursing young and containing the rabbits: a series of enclosed areas have been constructed with troughs, access to food, fences that keep predators out (electric) and artificial hutches that allow for the placement of the repopulated animals in the release point.

During the execution of the actions described above a series of modifications to the execution protocols have been adopted to make them more effective. This has supposed a series of adaptations/modifications in the initial enclosed areas to augment their effectiveness.

To improve the reproductive conditions and to support the previous action plans some enclosed areas dedicated to the supplementary feeding of the Iberian Lynx have been created. These are accessible to the lynx, but not to other general predators. In these enclosed areas a prey population is permanently maintained available for the consumption of wild Iberian Lynxes. This measure allows augmenting locally the availability of trophic resources for the Iberian Lynx and thus improves the nursing conditions (reproductive success).





Recuperation of the Iberian Lynx (*Lynx pardinus*) populations in Andalusia.
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This is especially important in areas where reproductive success can be conditioned by low rabbit density (FIGURE 2. - and FIGUREA 3. -).

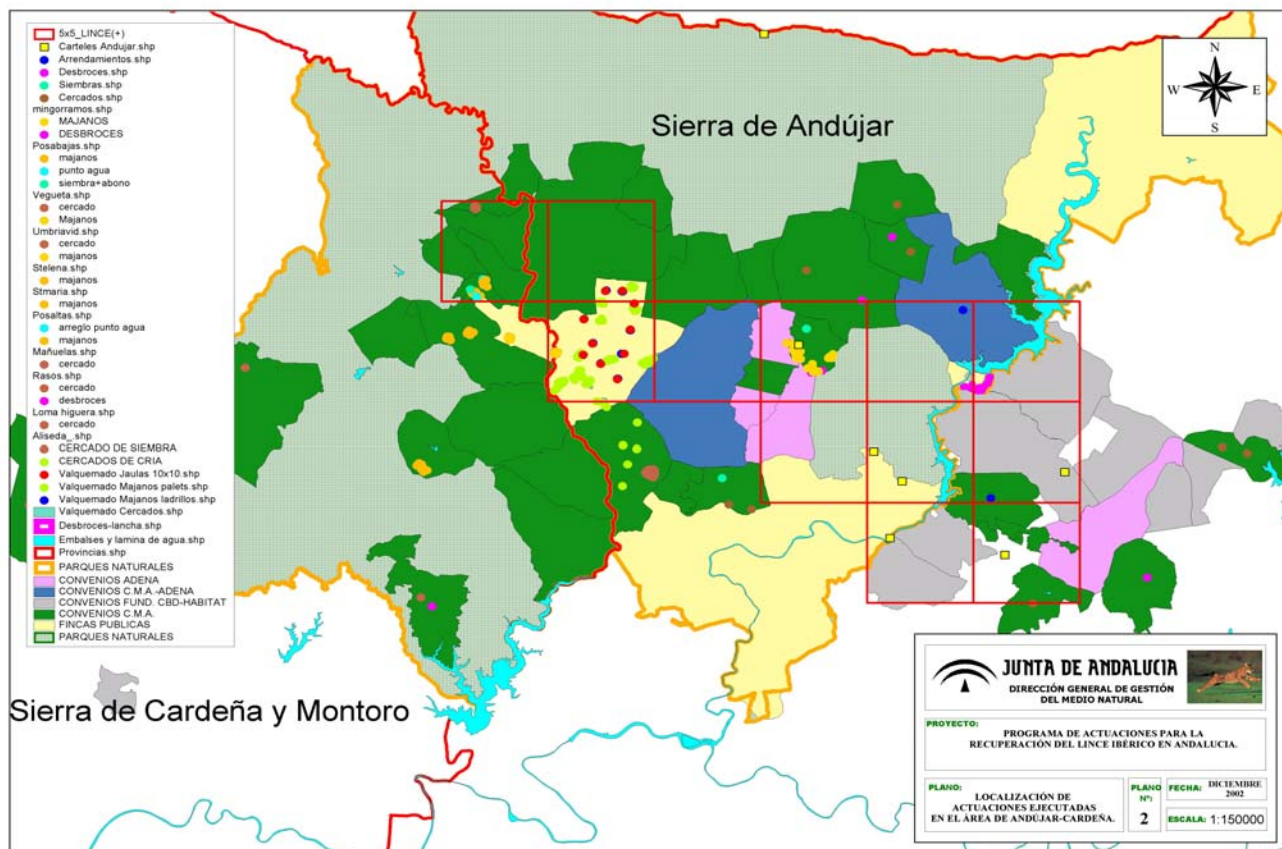
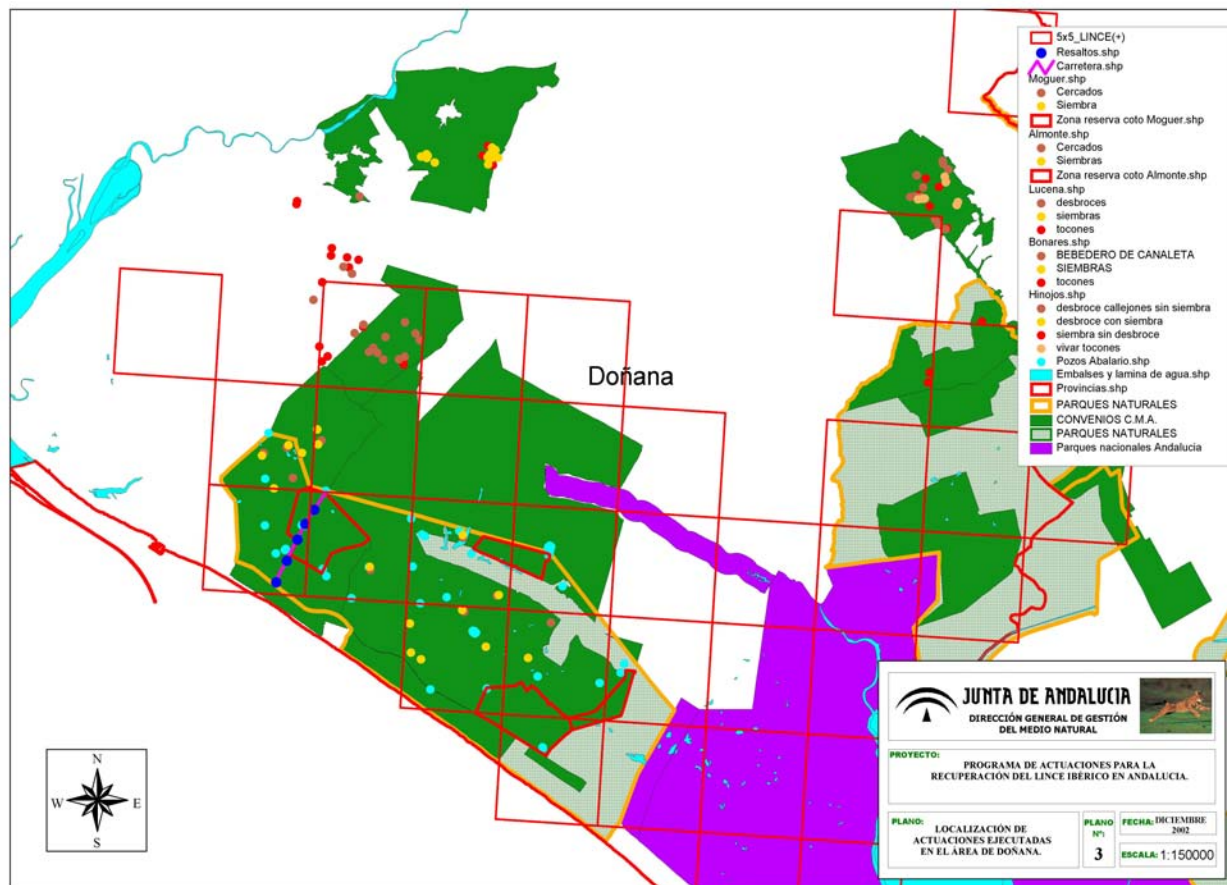




FIGURE 2. – Location of the action plans carried out in the Andújar- Cárdeña area.



2.4.2. - REDUCTION OF THE NUMBER OF DEATHS OF THE IBERIAN LYNX DUE TO BEING RUN OVER:

Action plans about wells in the Zone of Abalarío (Doñana): A total of 52 wells have been repaired (kerbstone construction and walling-off) or sealed and 4 that were considered the most dangerous have been buried.

- Placement of 5 groups of speed bumps and speed limit signs (40 km/h) on the road from Cabezudos to Mazagón (Doñana area).
- Placement of 7 informative signs of zones where the Iberian Lynx passes in Andújar.





- Elaboration of reports about asphalted roads where there is a higher risk of being run over in the Doñana area.
- Currently execution projects for means of reducing the mortality (underground and airborne ways for the fauna to pass), roundabouts, vertical and horizontal signs, etc., on the roads from Villamanrique to El Rocio and Matafiascañas to Mazagón are being written.

2.4.4. - IMPROVE PUBLIC AWARENESS

2.4.4.1. – Edited material: The following educational material has been edited and distributed as necessary support material for the tasks of education and awareness: Videos: 2,052 units distributed, CDs: 2,171 distributed, Posters: 975 distributed (6,000 have been edited), Books: 15 (farm owners) and Christmas cards: 300 sent (400 edited). A mailing campaign of 15,000 videos and 15,000 CDs for the educational programme directed to schools, television, Administration, visitors' centres, etc. has been carried out.

In relation to the Andalusian Pact for the Iberian Lynx, a series of informative pamphlets have been edited: In the Magazine "Medio Ambiente" (n. 41- 2002 – 20,000 copies), for ISLA MÁGICA (400 copies), 10,000 copies of the general information model "Andalusian Pact for the Iberian Lynx. I've signed it, have you?" have been edited and another 20,000 copies of the postcard agreeing to accept the pact have been edited.

As part of the student awareness campaign, a giant game has also been designed for scholars, of which an interactive trivia CD has also been created. Currently the following material is waiting to be edited: a pamphlet for hunters, general Life pamphlet, Nature Protection Service (SEPRONA) pamphlet, an educational notebook for students, posters, pins, stickers, etc.

2.4.4.2. - Andalusian Pact for the Iberian Lynx: The Andalusian Pact has as its objective join forces with all administrations and the society in general to guarantee the survival of the Iberian Lynx in Andalusia.



The Andalusian Pact for the lynx was approved by the Government Council of the Junta de Andalusia (Andalusian Regional Government) on 9 April 2002 and its execution was delegated to 4 Regional Ministries: Environment, Agriculture, Public



Works and Employment and Technological Development. Each of these Ministries has already begun to execute and plan actions to conserve the species within the limits of their responsibilities.

Apart from this, the Pact is offered to be signed by all those people and entities that want to take part. By means of the Pact, the undersigned agree to respect the objectives and principles that are detailed in it, participating in the different activities and initiatives to be undertaken. Currently, the Andalusian Pact for the Iberian Lynx have gathered more than 15,000 signatures and in the last meeting of the Lynx Work Group, of the National Nature Conservation Commissions, the Regional Environmental Ministry proposed the creation of the Iberian Lynx Pact, that would join together Spain and Portugal.

2.4.4.3. - Lectures, seminars and public acts: Another part of the intense educational and public awareness task is being carried out on the local populations in areas where the Iberian Lynx is currently present, especially with the student population by means of lectures in schools and specific courses (power point).

The most important events related to the environment are also actively being participated in: INTERCAZA congress, V Seminar for Journalism and the Environment, SECEM Congress (Vitoria). Day training seminars for the teams assigned to LIFE02 NAT/E/8609 (in Cazorla) have also been organised.

2.4.4.4. - Organisation of the international seminar about the Iberian Lynx: Promoted by UICN (The World Conservation Union) and the Cats Specialist Group and in collaboration with the Regional Environmental Ministry, the National Environmental Ministry, the city hall of Andújar and the European Council, the International Seminar about the Iberian Lynx was organised and celebrated in the city of Andújar, Jaen from the 29 to the 31 of October de 2002.

At said seminar, diverse themes were debated related with the current status of conservation of the Iberian Lynx, and to this end a series of conferences and speeches as well as workshops were developed. The results that were presented in this encounter indicate that the lynx population is not more than 200 in number (2000-2002), and with the presence of females capable of reproduction only in Andújar-Cardeña and Doñaña.

2.4.4.5. - Filming of a documentary about the Iberian Lynx: Fieldwork for the filming has been initiated in the zone of Andújar. A summary of said documentary has





been presented in diverse means of communication and a documentary contest in Canada.

2.4.4.6. – Press release: Periodically a recompilation of information that has been released in the means of communication about the Iberian Lynx is made (local newspapers, national newspapers, specialised magazines, press in general, etc.).

2.5. - OTHERS ACTIVITIES

2.5.1. - DECLARATION OF THE “LA LANCHA” HUNTING RESERVE: On 26 November 2002 and by means of Decree 230/2001, dated 16 October, the General Direction Resolution for the Management of the Natural Medium Regional Environmental Ministry is signed thus creating a hunting refuge on the farm “LA LANCHA” (J-10154 C.M.P.). Said declaration is made based on the presence of the Iberian Lynx on this public farm.

2.5.2. - COMPENSATION FOR DAMAGES PRODUCED BY THE IBERIAN LYNX: As a means of reducing the mortality and with the objective of improving the social perception of the species, up to now a total of 4 applications have been financially compensated for damage caused by the Iberian Lynx in the Cardeña-Montoro Natural Park.

2.5.3. - COLLABORATION WITH OTHER TEAMS: Monthly co-ordination meetings are held between the Monitoring Teams of the Regional Environmental Ministry, the CBD-Habitat Foundation and WWF/Adena for the common usage of the images obtained in the remote photographic set-up points.

2.5.4. - GENETIC ANALYSIS OF RABBIT SAMPLING: Up to now a total of 142 genetic analyses have been carried out to determine the haplotype (A/B) of the rabbit populations from origin and destination farms used for the repopulations, these 142 analyses correspond to some 50 hunting reserves throughout Andalusia.

When the native rabbits present in the zone where the repopulation is to be carried out are type A, or B they will be repopulated with the same type, if both types exist the zone will be repopulation indistinctly with one haplotype of both depending on the availability of the supply of the rabbits.



2.5.5. – MAKING ADEQUATE POTENTIAL AREAS FOR RE-INTRODUCTIONS AND/OR RE-LOCATIONS: Looking ahead to future re-introductions or re-locations, a habitat improvement project has been written in the forests belonging to the Junta de Andalusia





(Andalusian Regional Government) Chortal and Palanco. These forests, with a surface of nearly 6,000 has, is found to the east of Despeñaperros, in an area that historically has been where the Iberian Lynx (*Lynx pardinus*) and Royal Eagle (*Aquila adalberti*) are present (FIGURE 4. -).

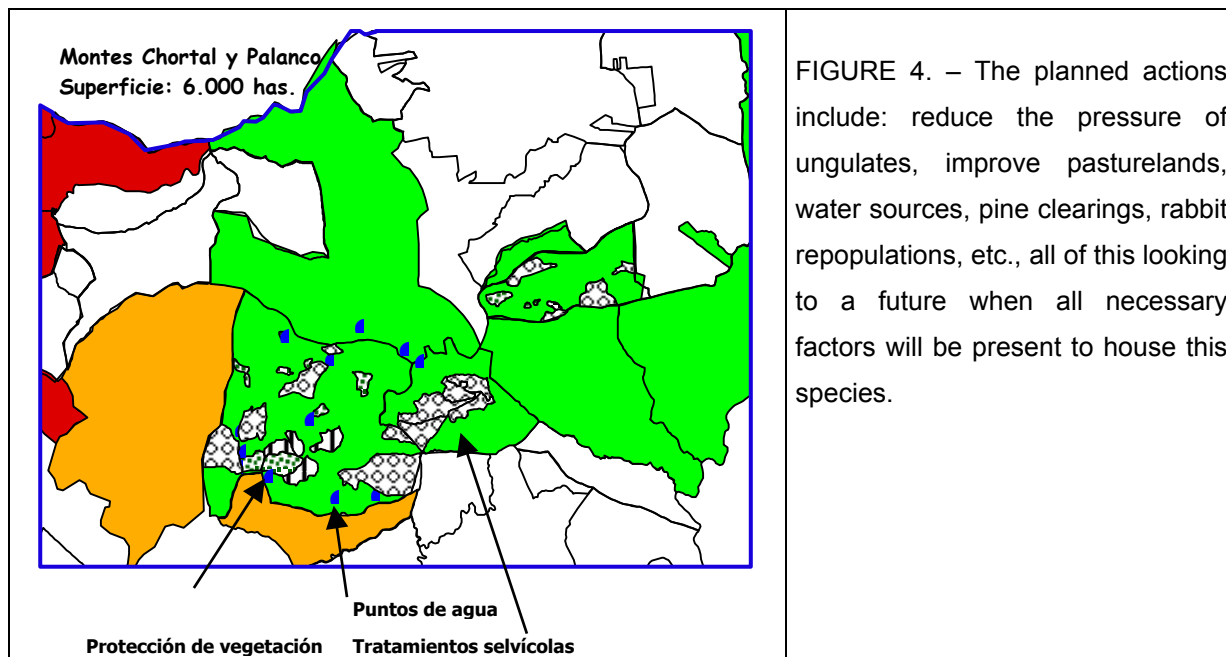


FIGURE 4. – The planned actions include: reduce the pressure of ungulates, improve pasturelands, water sources, pine clearings, rabbit repopulations, etc., all of this looking to a future when all necessary factors will be present to house this species.

2.5.6. – DETERMINING POTENTIAL AREAS FOR THE IBERIAN LYNX IN ANDALUSIA:

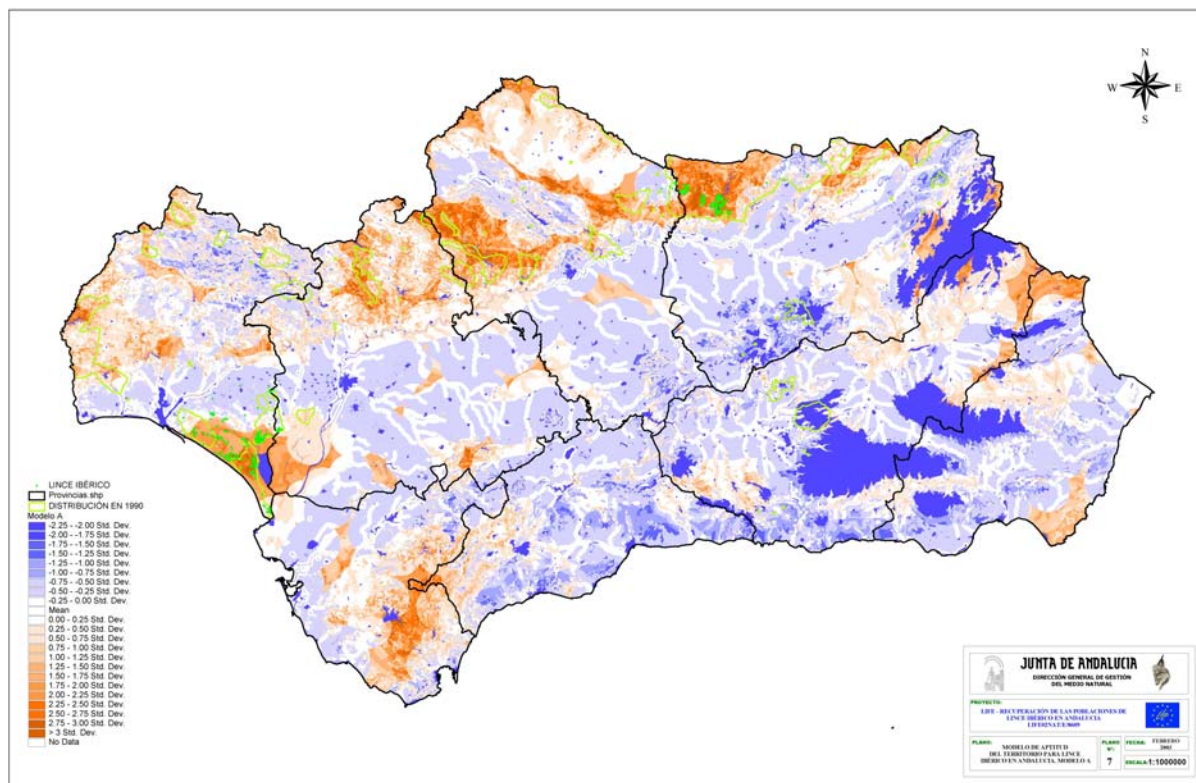
A territory protection capacity model for the Iberian Lynx en Andalusia has been generated. Said model is based on the analysis of the distribution of space of 609 locations of the Iberian Lynx looking at 6 factors: nature of the vegetation, distance of water sources, altitude, slope of the terrain, distance to population nuclei and distance to asphalted roads. The implemented model is based on a Multi-criteria Evaluation by Weighed Lineal Combination (WLC) applied by means of Geographic Information Systems (FIGURE 5. -).

This model, in additional to showing the potential areas for future re-introduction of the species, indicates which are the possible connection corridors among said areas and allows for the evaluation of the capacity of protection of the area of distribution that the species had in Andalusia in 1990.





FIGURE 5. - Territory protection capacity model for the Iberian Lynx in Andalusia.



C. – CURRENT SITUATION IN THE CONSERVATION OF THE LYNX IN ANDALUSIA

1. Conservation AND HABITAT IMPROVEMENT:

The meta-populations of Iberian Lynxes in Andalusia are found in Cardeña-Andújar and Doñana and their surroundings. These zones are managed by diverse organisms or private property owners; the management of both areas is distributed in the following way:

- Administrations: Regional Environmental Ministry and National Parks Autonomous Organism (National Environmental Ministry).
- Private property owners and hunting reserves.





If we also take into account that, overall in the area of Cardeña-Andújar, the best populations of Iberian Lynx are found on privately owned farms, it was necessary to establish collaboration agreements with these owners.

Up to the present, a total of 68 agreements have been signed with private farms (Regional Environmental Ministry 90,067 has, CBD-Habitat Foundation 12,817 has and ADENA/WWF 8,670 has) plus 10,301 has that the Administration owns in the Cardeña-Andújar area.

CARDEÑA-ANDÚJAR AREA:

1. MANAGEMENT OF THE VALQUEMADO AREA: In this area a small meta-population of Iberian Lynxes (*Lynx pardinus*) is found halfway between the provinces of Cordoba and Jaen. Though the meta-population is found in terrain managed by the Regional Environmental Ministry, in which the managing measures described in section 2.4 are applied (Actions and means developed), from the previous report there exists an area of expansion, in agreement between ADENA/WWF and the private property owners which supposes an ideal zone of expansion for this species, where even there exist positive excrement data and remote photography set-ups.

ADENA/WWF was invited to participate in the LIFE Project, but turned down the invitation, while contributing a report to the LIFE project in which it promises to make available to the Regional Environmental Ministry the agreements carried out so that they, in the framework of LIFE, develop habitat management measures.

Up to the present, in the farms under agreement to ADENA/WWF since the year 2000, only one rabbit repopulation has been carried out. And, though combined visits have been given to representatives of the Regional Environmental Ministry and ADENA/WWF, an effective transfer of these agreements does not exist. Only due to the direct management of the Regional Ministry with the property owner has one farm been able to be included within the management measures that are developed in the LIFE framework.

2. MANAGEMENT OF THE ENCINAREJO AREA:

This is where the greatest density of Iberian Lynx (*Lynx pardinus*) is to be found, and the majority of the terrain correspond to privately owned farms managed through





the CBD-Habitats Foundation and a few by the Regional Environmental Ministry, one by ADENA/WWF and one by the National Parks Autonomous Organism.

On the farms managed by the Regional Ministry the actions described in section 2.4 are being developed, (Actions and measures developed). On the farms managed by ADENA/WWF only remote camera have been placed and up to now no management measure has been carried out that would make possible the expansion of the population. And, on the farms under agreement with the CBD-Habitats Foundation, up to the present no management action has been carried out except for the placement of remote cameras and test runs of supplementary feeding. Recently a project for improvements on some of the farms under agreement has been received, that is being reviewed by the Regional Environmental Ministry for its authorisation.

In conclusion, the management carried out of the population of Cardeña-Andújar, through the four different organisms/NGO's with distinct criteria when it comes to reaching agreements and managing, makes it difficult and complex to achieve a unique action unit which has a negative repercussion on the conservation of the species in the zone. Nevertheless, the Regional Environmental Ministry, by means of the Project LIFE Monitoring Commission "Recuperation of the populations of the Iberian Lynx in Andalusia" is defining and solidifying the criteria to apply to the distinct management and improvement techniques of the Mediterranean Habitat, form monitoring the populations of lynx and rabbit and of the effectiveness of all of the actions carried out in the name of said project (see Action and Monitoring Protocol Dossier).

DOÑANA AREA AND ITS SURROUNDINGS:

This area is managed by two organisms: The Regional Environmental Ministry, which manages the Doñana Natural Park and its surrounding and the National Parks Autonomous Organism, which manages the Doñana National Park. Both organisms are developing co-ordinated habitat management action plans. The Regional Environmental Ministry, in addition to the territories that it manages directly, has established agreements with the Hunting Reserves of the surrounding villages for the development of the necessary management.



The most serious problem to be faced for the conservation of the species in this area is, in addition to the scarcity of rabbits is the high density of roads that lead to a number of lynxes being run over every year as they try to go to other territories. This





highway system, which depends on different organisms, should be conditioned and currently both the Regional Agricultural Ministry and the Regional Public Works Ministry are writing projects to improve these problems.

2. PLAN FOR REPRODUCTION IN CAPTIVITY:

The reproduction in captivity has captivated the public opinion and certain sectors of the society. This fact can be contributed rather decidedly to the press and the exclusive importance given to it by some people. Reproduction in captivity should be an action that we must develop and that should be converted in a guarantee of the survival of the species in case the *in situ* conservation actions fail. We should never forget that all of the forces should be directed to habitat management of the populations of rabbit and lynx and be totally overlapping and related with projects or programmes of re-introduction.

There exists a Reproduction Plan in Captivity written and approved by all parts. This Plan includes the Acebuche Reproduction Centre (Doñana National Park) as one of the Centres where it could be developed. The National Conservation Strategy, in its section dedicated to reproduction in captivity, established that “*An experimental programme for reproduction in captivity of the Iberian Lynx should be elaborated in which the objectives, means, calendar and budgets are clearly defined, and in which professionals and technicians recognised in their fields participate*”.

The Regional Environmental Ministry, being responsible for El Acebuche, has been asked for many years to comply with that is stipulated in the National Strategy and develop the sited programme and establish “... *with clarity the objectives, means, calendar and budgets* ...”. Up to now this programme, which should guarantee in time the development of the Reproduction Plan, has not been written. In spite of this the Regional Environmental Ministry has donated to the El Acebuche Centre all of the lynxes that currently are in captivity (4 females). Without the elaboration and presentation of the Programme stipulated in the National Strategy, the viability of the reproduction in captivity in El Acebuche will be seriously compromised.

Apart from this, I believe that it is necessary to make an effort by everyone involved to explain to society that the reproduction in captivity is not *per se* the solution to the conservation of the species and that all of the efforts should be focused to saving and expanding the populations of the species.





Additionally we should begin to respond to some questions and to set about looking for answers, for example:

- Are the available budgets and material and human means for the current Reproduction Programme guaranteed?
- Shouldn't we constitute a genetic lynx reserve?
- Will we be capable to produce lynxes apt to be reintroduced with the personnel and the installations that we currently have?
- Is reintroduction the objective of the reproduction in captivity? If it is, is there a reintroduction programme related to it?
- Are there areas with an adequate potential for the reintroduction of lynxes reproduced in captivity?
- If there are, shouldn't we begin to select and condition the zones chosen to comply with all of the requirements of the species?
- Once these areas are selected, shouldn't we begin to develop the recommendations established by the UICN for any reintroduction or relocation?

These are some of the questions that should have answers as soon as possible so as not to limit ourselves to put lynxes in reproduction centres without clear and previous developed objectives.

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