

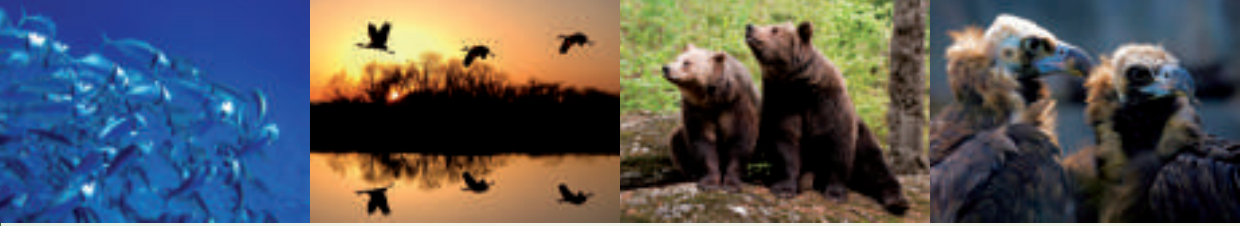


Red Eléctrica and
biodiversity



Biodiversity

RE



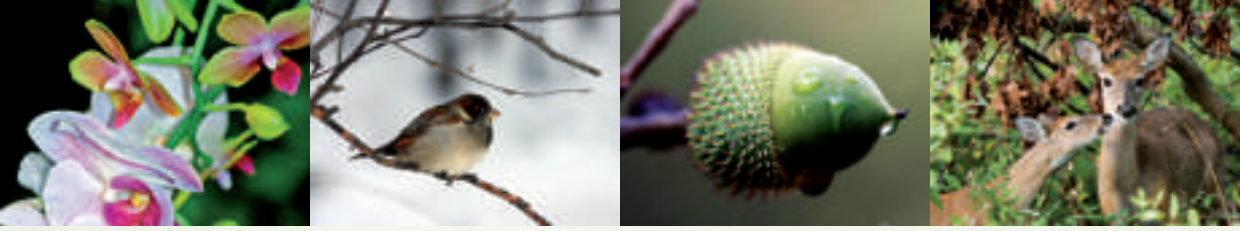
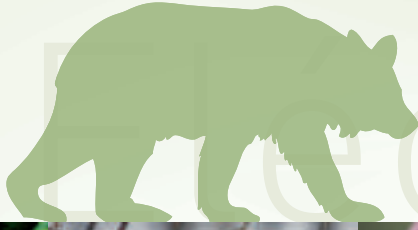
Biological diversity is defined as
“The variability among living organisms
from all sources including, inter alia,
terrestrial, marine and other aquatic
ecosystems and the ecological
complexes of which they are part;
this includes diversity within species,
between species and of ecosystems”.

Convention on Biological Diversity (UNEP, Rio de Janeiro 1992)



Read QR code
Consult the biodiversity
section of the corporate
website.



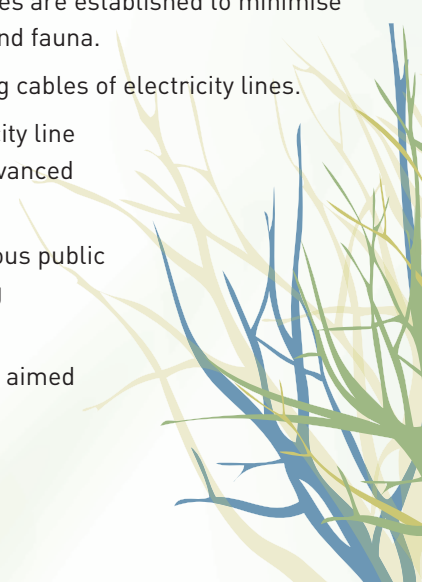


Red Eléctrica's commitment to biodiversity

Red Eléctrica sets out its commitment to biodiversity in its environmental policy, biodiversity strategy and the many actions it carries out in this area, to which it dedicates considerable manpower and financial resources.

Actions for the protection of biodiversity

- Avoidance of those areas rich in biodiversity when deciding on the siting of new electricity transmission facilities.
- Protection of habitats and species when it is inevitable that installations cross protected areas or areas of interest. To this end, numerous measures are established to minimise the disturbance of the habitat of certain species of flora and fauna.
- Anticipation of bird collision risk by marking the grounding cables of electricity lines.
- Fire prevention through the adequate definition of electricity line safety corridors, the application of more thorough and advanced techniques regarding maintenance.
- Participation in projects of common interest with the various public administrations and prestigious organisations concerning environmental matters.
- Participation in different research and innovation projects aimed at the conservation of the natural environment.



Biodiversity in our day-to-day activities



... compatible with fauna

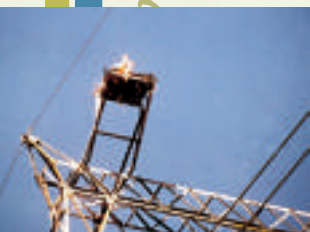
- In the construction of new lines great care is taken to avoid birdlife feeding and breeding areas and the dispersion of endangered species of birds.
- Interruption of works during the nesting and breeding periods of birds, and other potentially sensitive fauna species.
- Marking of electricity lines by means of devices (bird flight diverters) to avoid birds colliding with the lines.
- Prediction of the number of stork and raven nests in the towers of new lines.
- Immediate intervention when faced with hazards for fauna.
- R&D&i focused on the prevention of impacts on fauna.

...compatible with flora

- Hanging of cables by helicopter, or by hand, and the use of a boom crane for hoisting electricity towers in protected areas or with sensitive flora.
 - Raising the height of electricity towers above the vegetation cover to protect wooded areas.
 - Restoration of areas affected by construction activities with indigenous species.
 - Interruption of works during periods of high fire risk.
 - Maintenance of security corridors in order to prevent fires.
 - R&D&i focused on the prevention of impacts on flora.

...committed to the fight against the loss of biodiversity

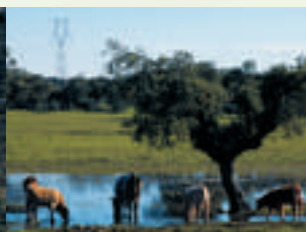
- Collaboration with public and private organisations on projects of common interest for the conservation and improvement of biological diversity.
 - Development of environmental projects with local communities.
 - Internal company training and awareness.



Installation of nesting platforms for Storks.



Marking of lines with spiral devices "bird flight diverters".



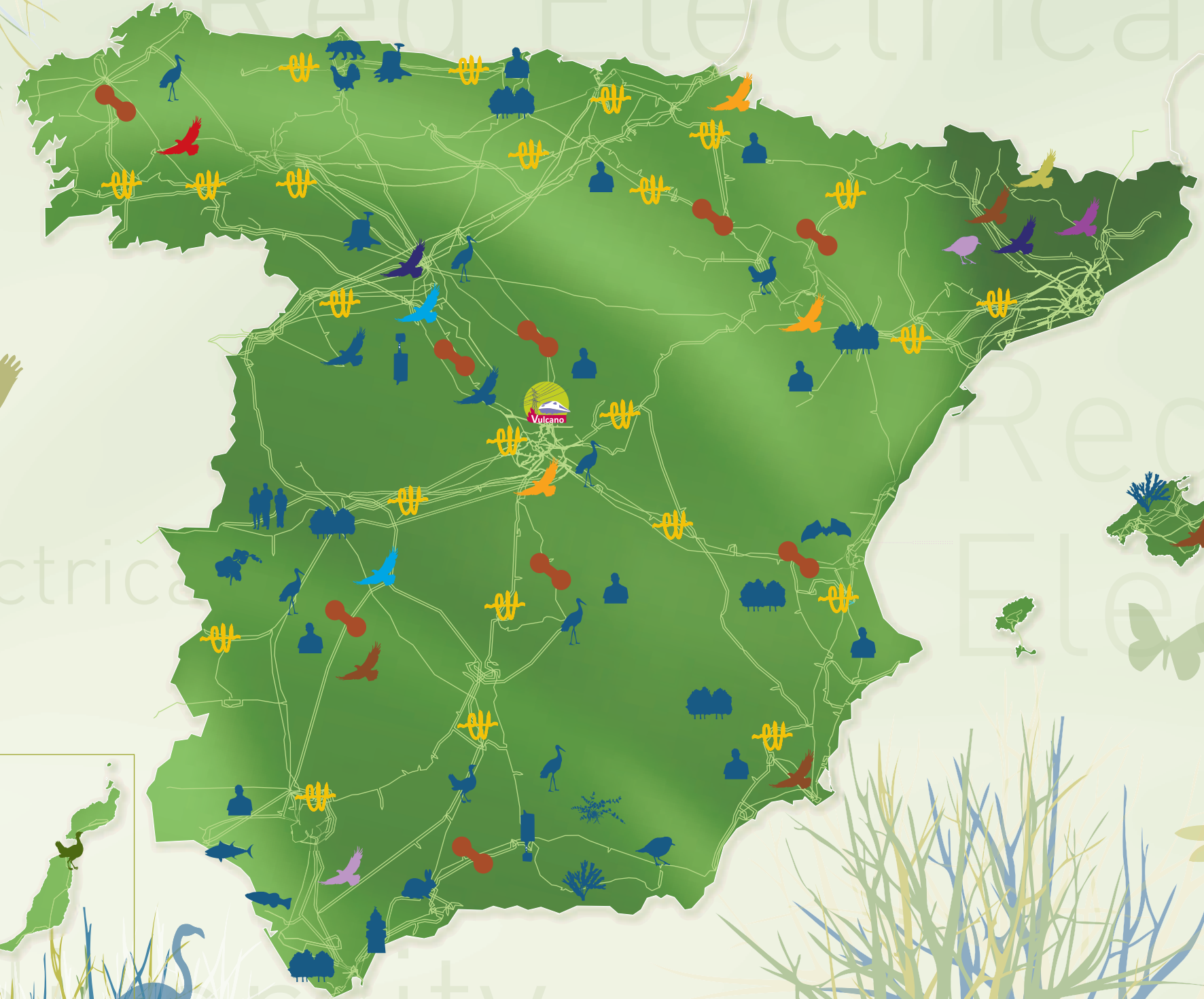
Compatibility of electricity lines with livestock farming methods on pasturelands.



Minimization of impact on agricultural farming areas.

Biodiversity

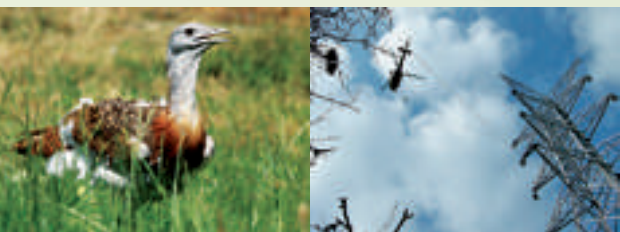
Red Eléctrica



Conservation for a better life

Activities regarding biodiversity

-  Improvement in the management of the habitat of **Steepleland birds** in Andalusia (R&D&i) (EU Life-Naturaleza project) and the adaptation of sections of electricity lines in Aragon (EU Life-Naturaleza project).
-  Census study of the **Houbara Bustard** population on the islands of Fuerteventura and Lanzarote (Canary Islands).
-  Analysis of the interaction between the **Burhinus oedicnemus** and electricity lines in the Canary Islands.
-  Occupation of natural nests by the **Ciconia ciconia** on electricity towers in Andalusia, Extremadura, Galicia and Madrid (biodiversity corridors).
-  Improvement in the habitat of the **Aegyptius monachus** in Castilla and Leon and reintroduction programme for Catalonia.
-  Improvement in the habitat of the **Aquila haliaca** in Castilla and Leon and the occupation of natural nests by this species in electricity towers in Extremadura (biodiversity corridors).
-  Analysis of the interaction between the **Hieraetus fasciatus** and sections of electricity lines in Catalonia (R&D&i) and the improvement of its habitat and the adaptation of sections of electricity lines in Murcia (EU Life- Naturaleza project) and the occupation of natural nests by this species in electricity towers in Extremadura (biodiversity corridors).
-  Installation of a nesting platform for the **Osprey (Sea Hawk)** on an electricity tower in Andalusia, with the aim of increasing the substrates for breeding.
-  Installation of artificial nests for the **Falco tinnunculus** in substations in Catalonia.
-  Study of the interaction of the **Falco naumanni** with substations in Aragon and Navarra (R&D&i) and captive breeding and release in Madrid (biodiversity corridors).
-  Occupation of natural nests and the installation of artificial nests for the **Falco peregrinus** in electricity towers in Castilla and Leon (R&D&i) (biodiversity corridors).
-  Recovery plan for the **Golden Eagle (Aquila chrysaetos)** in Galicia (Spain).
-  **Bearded Vulture** captive breeding programme and gene pool in the Pyrenean region.
-  Installation of **bird flight diverter spiral** markers throughout the whole national territory (Model patented by REE) and **experimental bird flight diverter** markers in Andalusia and Castilla and Leon (R&D&i) (registered as a model of public utility).
-  Monitoring of nesting of the **Charadrius alexandrinus** in Andalusia.
-  Improvement of the **Lesser Grey Shrike** habitat in the territory of Lleida to improve the conservation of the species.
-  Improvement of the habitat and food sources of the **Ursus arctos** and **Tetrao urogallus** in Asturias.
-  Improvement in the habitat for **micromammals** at the base of electricity towers in Andalusia (biodiversity corridors).
-  Study of the migration of the **Thunnus thynnus** and the **Pagellus bogaraveo** in Andalusia for a sustainable management of fishing resources.
-  Improvement in the habitat of the **Salinete (aphanius baeticus)** in Andalusia.
-  Installation of nesting boxes for **Pipistrelus pygmaeus** in electricity towers in Valencia (biodiversity corridors).
-  **Forest fire prevention training sessions** (forestry agents, Seprona agents and environmental technicians) in Andalusia, Aragon, Cantabria, Castilla-La Mancha, Extremadura, La Rioja, Navarra and Valencia.
-  **Environmental education.** Fostering of knowledge and the natural environmental values amongst students within the area of the Gata mountains (Extremadura).
-  **Vulcano project.** Development of a methodology for the prevention of fire risks in the surroundings of electricity lines and railways networks (R&D&i).
-  Recuperation of degraded areas with treelike species in Aragon and Extremadura: **the Red Eléctrica Forest Project (Bosque de Red Eléctrica).**
-  Defining cartography of areas with different environmental sensitivity of **Cymodocea nodosain** along the entire Andalusian coastline and the improvement of the **Posidonia oceanic** seagrass in the Balearic Islands (R&D&i).
-  **Orchids.** Protection of the variety **Ophrys apifera** var. **Almaracensis** in Extremadura.
-  Biological treatment of **tree stumps** in Asturias and Castilla and Leon (R&D&i).
-  Elimination of **invasive species of flora** and substitution for indigenous species in Andalusia.
-  **Centre for migration and climate change** in Andalusia.
-  **Biodiversity corridor project.** Increase in the habitat of species located in environments which lack the natural resources to establish themselves, in Andalusia, Aragon, Castilla-La Mancha, Castilla and León, Extremadura, Galicia, Madrid, Navarra and Valencia.



Improvement of the habitat of Steppe birds.



Hanging cable by helicopter.



Experimental bird flight diverters.



Peregrine Falcon chicks in a tower.



Our commitment to biodiversity (1985-2012) milestones

1987. Drafting of environmental impact studies for new facilities - using own methodology.
1989. Development of the first research studies in Spain regarding the collision of birds with electricity lines and the design of an electricity line-marking system (bird flight diverters).
1990. Creation of the Environmental Service.
1992. Establishment of the «Environmental Code of Conduct».
1997. Creation of the Environmental Department.
1999. Certification of the Environmental Management System in accordance with the ISO 14001:2004 standard.
2000. Registration of the nesting deterrent as a model of public utility; Publishing of the Environmental Best Practices Code; Publication of the first Environmental Report of Red Eléctrica de España.
2001. Resolution for adherence to the Eco-Management and Audit Scheme (EMAS).
2002. Publishing of the Environmental Policy.
2004. Certification of the Environmental Management System in accordance with the ISO 14001:2004 standard for all subsidiaries of the Red Eléctrica Group.
2005. Environmental actions regarding the REMO Project (Refuerzo Eléctrico Mediterráneo Occidental) - the second interconnection cable Spain-Morocco: Declared of community interest by the European Union.
2006. Training sessions regarding compensatory measures for the creation of think tanks and dialogue forums amongst all those involved in the determination process and the implementation of compensatory measures in Natura 2000 Network.
2007. Award winning experimental bird-flight diverter-one of the Ten Best Ideas to Protect Nature (F. Caja Rural del Sur).
2008. European Environmental Award 2007-2008, in the category «Product for sustainable development».
2009. Creation of Balearic and Canary Island Sustainability Council.
2010. The biodiversity strategy of Red Eléctrica de España was approved. The Sustainability Laboratory was created.
2011. Approval of the Company's strategy on the Fight against Climate Change.
2012. Best European company in sustainable and socially responsible policies in the utilities sector, according to the FTSE4Good.



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