

# CONSERVATION OF SPECIES AND NATURAL HABITATS

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*and the implementation  
of linear infrastructures*

# *Linear infrastructures*

- Roads, railways, water channels, powerlines have been identified as important factors responsible for causing individual species to decline, suppressing their numbers or restricting their ranges



**potential drivers of decline in declining species**

# *Impacts:*

Occurs at different phases and operate at different levels:

- during its **CONSTRUCTION**
  - Field works
  - Machines
  - Opening accesses
  - Earth moving
  - Installation of construction sites



**Disturbance/loss of habitat**

# *Impacts:*

- during its **EXPLOITATION**



- Direct mortality
- Barrier effect:  
habitat/population fragmentation

# *Pressure/threat: species and habitats*

In Portugal, *Transportation and service corridors* is identified as a pressure/threat for:

- **38 habitats (c.46%): 26** reported as having **High/medium ranking impact**
- **66 sp (c.32%): 38** reported as having **High/Medium ranking impact (2  ; 4 **)

**(2007-2012 NATIONAL REPORT ART. 17° HABITATS DIRECTIVE)**

# Pressure/threat: birds

In Portugal (2008-2012 NATIONAL REPORT ART. 12º BIRDS DIRECTIVE):

- **44 bird species** (c.61%): **19 species** reported as having **High/Medium ranking impact**

- **Cinereous Vulture** *Aegypius monachus* (**CR**)



- **Spanish Imperial Eagle** *Aquila adalberti* (**CR**)



- **Bonelli's Eagle** *Aquila fasciata* (**EN**)



- **White stork** *Ciconia ciconia* (**LC**)



- **Great Bustard** *Otis tarda* (**EN**)



## *Pressure/threat: birds*

The European Union has funded the development of **Species Action Plans** for 55 bird species listed in Annex I of the Birds Directive. These plans provide information about the status, ecology, threats of each species and describe the key actions that are required to improve their conservation status in Europe.

- Linear infrastructures were identified as a threat for **29 bird species**

# Powerlines and Birds



Above-ground powerlines pose **three main** risks to birds:

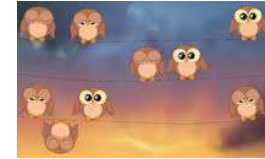
- **electrocution:** Birds sitting on power poles and / or conducting cables are killed if they cause short circuits.

Numerous medium-sized and large birds, which use power poles as perching, roosting, and even nesting sites. Many species of large birds suffer heavy losses and are strongly decimated by electrocution. Some species are even threatened by extinction.

**Spanish Imperial Eagle** *Aquila adalberti* **CR**  
12 fatalities (2003-2014)  
population size: c.13 pairs (2014)



# *Powerlines and Birds*



- **collision:** In flight, birds can collide into the cables of powerlines, because the cables are difficult to perceive as obstacles. The impact of collision leads to immediate death or to fatal injuries and mutilations, which cannot be survived.

Many large terrestrial and wetland birds and some smaller, fast-flying species are prone to colliding with overhead wires. A high proportion of these are threatened species and for some, collision with power lines and other man-made structures is a significant and damaging source of anthropogenic mortality.

- **loss of habitat area and quality in staging and wintering areas:** mainly when aboveground powerlines cut across open landscapes and habitats (wetlands, steppe, etc.).

# Europe



*“Protecting birds from powerlines: a practical guide on the risks to birds from electricity transmission facilities and how to minimise any such adverse effects” (2003)*

[http://test.birdsandpowerlines.org/images/Protecting\\_birds\\_on\\_powerlines.pdf](http://test.birdsandpowerlines.org/images/Protecting_birds_on_powerlines.pdf)

# Europe



Convention on Conservation of European Wildlife and Natural Habitats

**2004:**

- **Recommendation No. 110 (2004)** on minimising adverse effects of above-ground electricity transmission facilities (power lines) on birds

**2011:**

- **Budapest Declaration on bird protection and power lines**, that calls on the European Institutions (Commission and Parliament) and national governments to reconcile energy generation, transmission and distribution with the protection of wild birds within and beyond protected areas

# *Legal Framework*

- **Environmental Impact Assessment (EIA) procedures**

- **projects under defined typology / thresholds**

Power lines

- $\geq 220\text{kV}$  and  $>15\text{km}$
- $\geq 110\text{kV}$  and  $>10\text{km}$  located in sensitive area

Roads:

- Highways, IP, IC: all

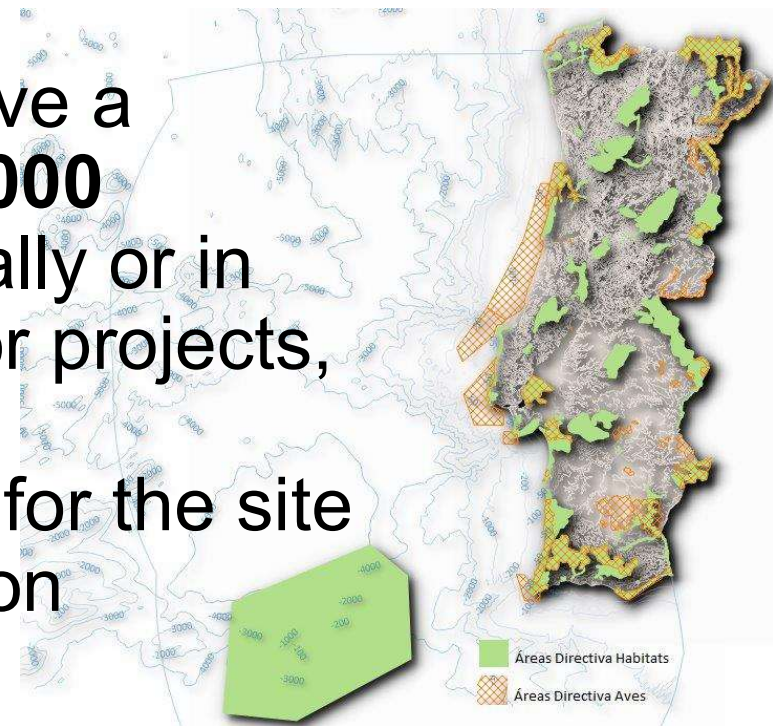
- **public and private projects which are likely to have significant effects on the environment**

- **Strategic Environmental Assessment (SEA) procedures**

# *Legal Framework*

- **Habitat & Birds Directive dispositions (Decreto-Lei nº 140/99):**

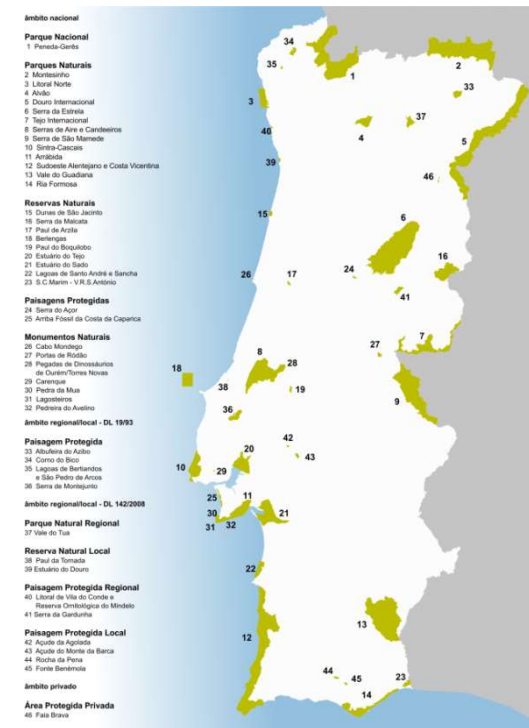
Any plan or project likely to have a significant **effect on Natura 2000 network sites**, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives.



# Legal Framework

- **Protected Areas**

Land-use plans may impose restrictions to infrastructures implementation



# Guidance

## The importance of strategic planning in linear infrastructures development

- **Planning in a strategic manner over a broad geographical area:** the most effective means of minimising the impacts early on in the planning process.
- **Appropriate siting:** critical and must be a first goal of the planning process.
- **Developing nature sensitivity maps:** enables to avoid potential conflicts with the provisions of the Birds and Habitats Directive as regards the need to protect species of EU importance throughout their entire natural range within the EU (ie also outside N2000 sites).

# Guidance

## Guidelines

- Guidance reports have been produced by ICNF to assist the evaluation and implementation of linear infrastructures in accordance with requirements of the Habitats and Birds Directives
  - Manual de apoio à análise de projetos relativos à implementação de Infraestruturas Lineares
  - Manual de apoio à análise de projetos relativos à instalação de Linhas Aéreas de Distribuição e Transporte de Energia Elétrica – componente Avifauna



# *Guidance*

## **Guidance reports**

- Discuss impacts
- Identify species that are vulnerable to linear infrastructures and sensitive areas
- Propose mitigation measures

# *Guidance*

## **Protocols with electric companies:**

**REN: 2003-2005**

**EDP Distribuição: 2003-2016**

- Essay, evaluate and disseminate practices directed at mitigation of negatives impacts from aerial powerlines

<http://www.icnf.pt/portal/naturaclas/gest-biodiv1/prog-proj/impac-linh-avifaun>

# *Guidance*

**Studies on impacts and pilot experiments on efficiency of mitigation measures are welcome!**