CÁTEDRA REN EM BIODIVERSIDADE

BIOPOLIS

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Academia – grid operator collaboration: advantages and (a few) risks

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An example of academia – grid operator collaboration: the REN Biodiversity chair

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- ✓ Research and knowledge transfer agenda (2015-2023) on power line impacts on biodiversity (focus on birds).
- ✓ Co-developed by CIBIO and REN.
- ✓ Co-financed by REN, the Foundation for Science and Technology (FCT) and the University of Porto (CIBIO).

U.PORTO

REN

FCT Fundação para a Ciência e a Tecnologia

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Main areas of activity (research and knowledge transfer)

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- ✓ Assessing and monitoring impacts on birds
- ✓ Impact mitigation
- ✓ Technological development
- ✓ Scientific advice and knowledge transfer

Assessing and monitoring impacts on birds

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✓ State-of-the-art assessment

Contents lists available at ScienceDirect

Biological Conservation

journal homepage: www.elsevier.com/locate/biocon

Review

Bird collisions with power lines: State of the art and priority areas for research

J. Bernardino[a,*], K. Bevanger[b], R. Barrientos[c,d], J.F. Dwyer[e], A.T. Marques[a,d,f], R.C. Martins[a,d], J.M. Shaw[g,h], J.P. Silva[a,d,f], F. Moreira[a,d]

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Assessing and monitoring impacts on birds

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✓ Evaluate monitoring practices and provide recommendations

Contents lists available at ScienceDirect

Environmental Impact Assessment Review

journal homepage: www.elsevier.com/locate/eiar

A review of post-construction monitoring practices used in the evaluation of transmission power line impacts on birds and mitigation effectiveness, with proposals for guideline improvement

Ricardo C. Martins [a,b,c,*], Joana Bernardino [a,b,c], Francisco Moreira [a,b,c]

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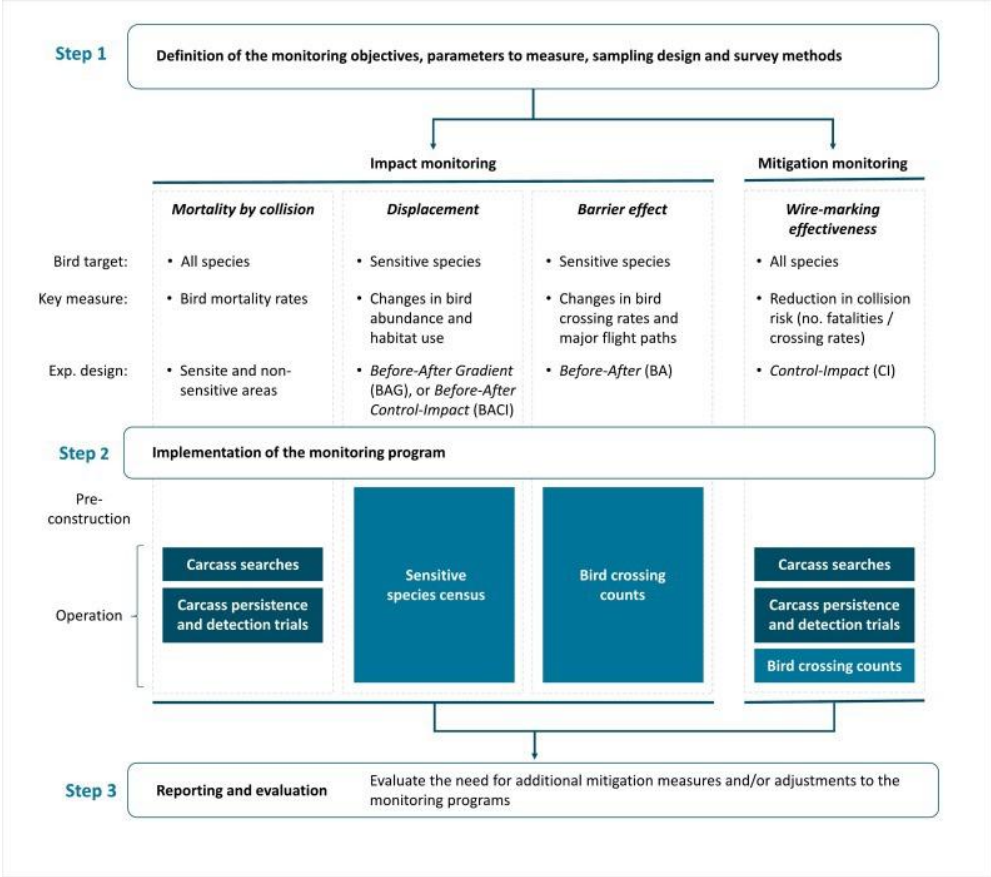

Assessing and monitoring impacts on birds

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✓ Identification of sensitive species and priority areas for mitigation

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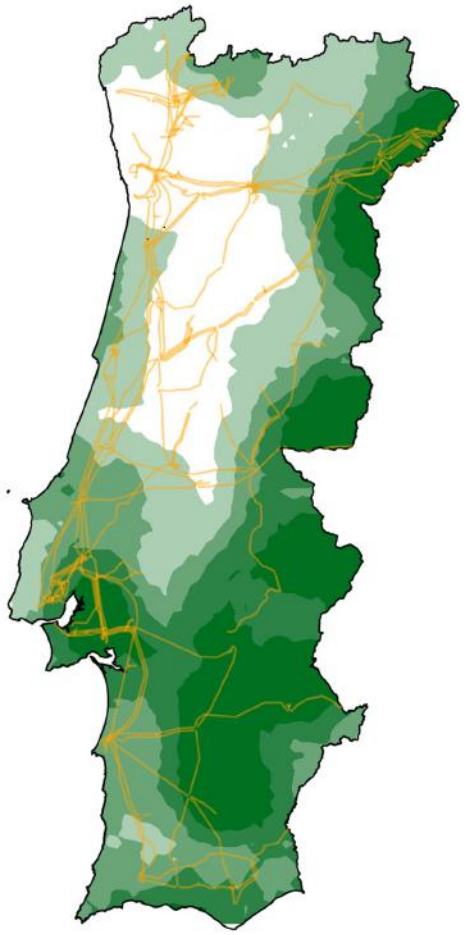
BIODIVERSITY RESEARCH

WILEY Diversity and Distributions

Bird collisions with power lines: Prioritizing species and areas by estimating potential population-level impacts

Marcello D'Amico[1,2] | Ricardo C. Martins[1,2] | Jose M. Álvarez-Martínez[3] | Miguel Porto[2,4] | Rafael Barrientos[2,5] | Francisco Moreira[1,2]



The effects of powerlines on bustards: how best to mitigate, how best to monitor?

João Paulo Silva[1,2,3,4*], Ana Teresa Marques[1,2,3], Joana Bernardino[1,2,3], Tris Allinson[5], Yuri Andryushchenko[4,6], Sutirtha Dutta[4,7], Mimi Kessler[4,8], Ricardo C. Martins[1,2,3], Francisco Moreira[1,2,3], John Pallett[9,10], Mattheuns D. Pretorius[11], H. Ann Scott[9], Jessica M. Shaw[4,10] and Nigel J. Collar[4,5]

Impact mitigation

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✓ Effectiveness of wire marking

Contents lists available at ScienceDirect

Journal of Environmental Management

journal homepage: http://www.elsevier.com/locate/jenvman

Research article

Re-assessing the effectiveness of wire-marking to mitigate bird collisions with power lines: A meta-analysis and guidelines for field studies

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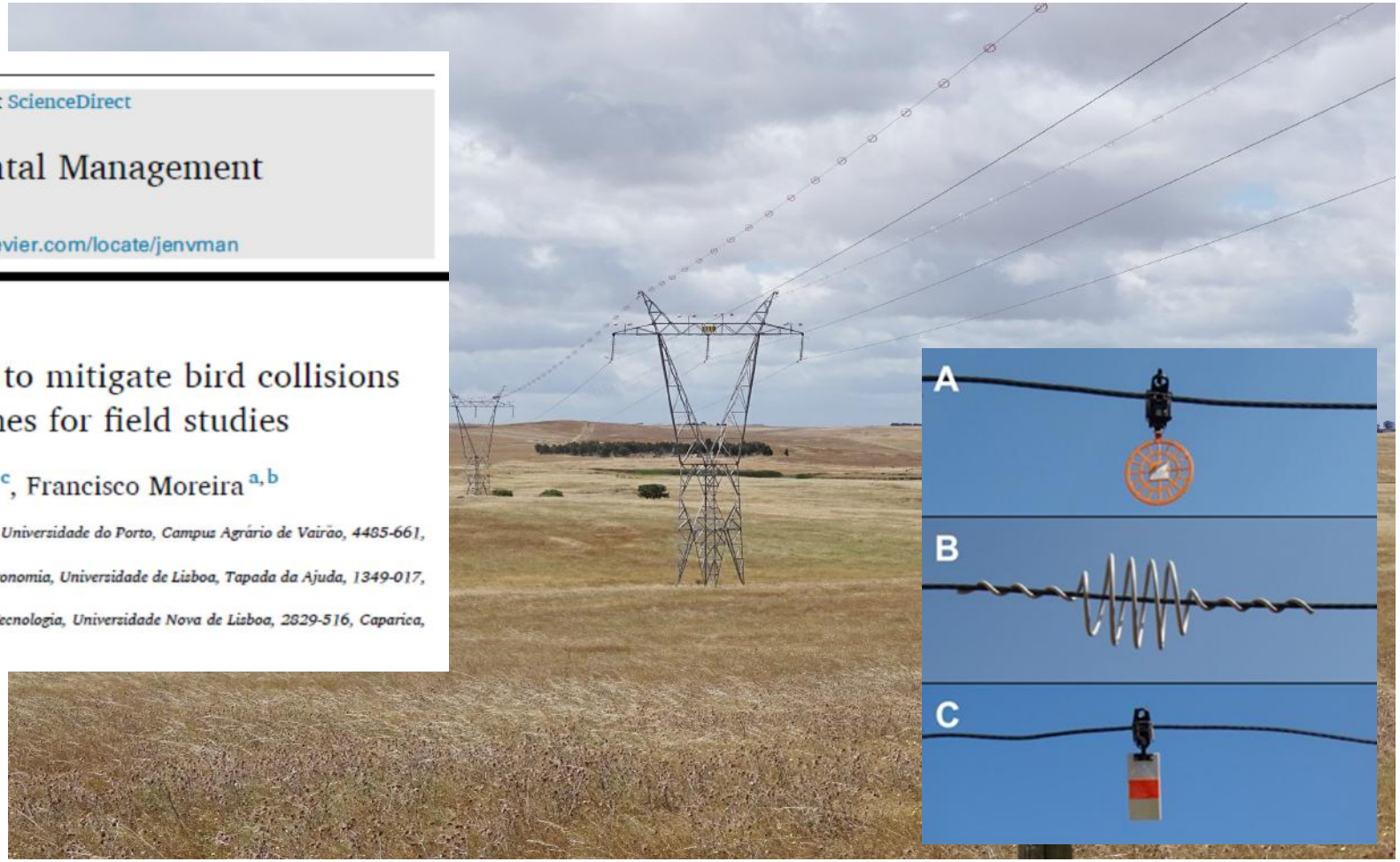

Impact mitigation

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✓ Effectiveness of REN's management to prevent bird-related outages

Contents lists available at ScienceDirect

Journal of Environmental Management

journal homepage: www.elsevier.com/locate/jenvman

Research article

Long-term management practices successfully reduce bird-related electrical faults in a transmission grid increasingly used by white storks for nesting

Francisco Moreira [a,b,c,*], Ricardo C. Martins [a,b,c], Francisco F. Aguilar [a,b], António Canhoto [d], Jorge Martins [d], José Moreira [d], Joana Bernardino [a,b,c]

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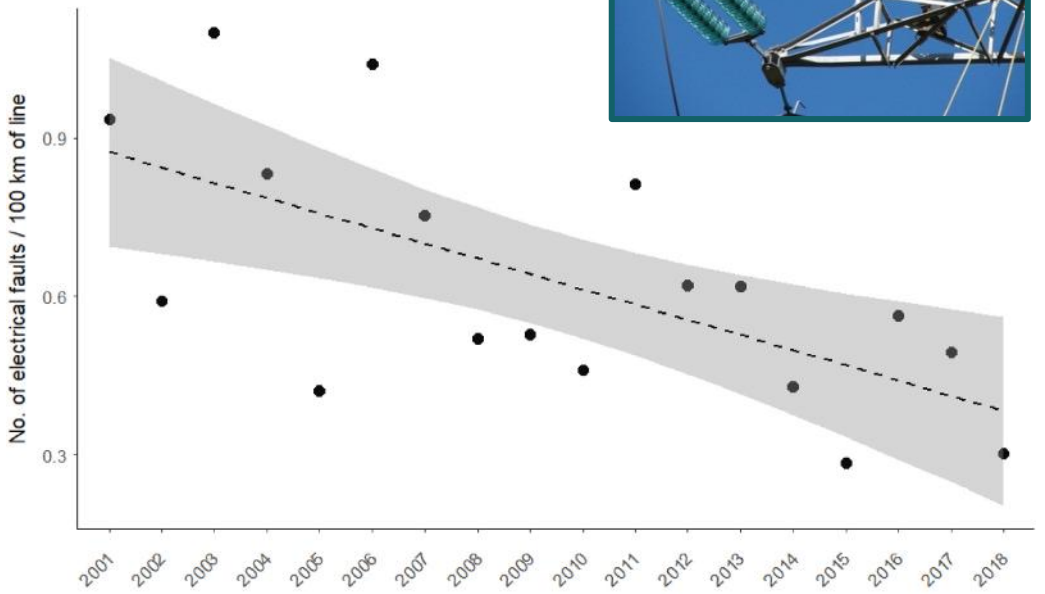

Technological development

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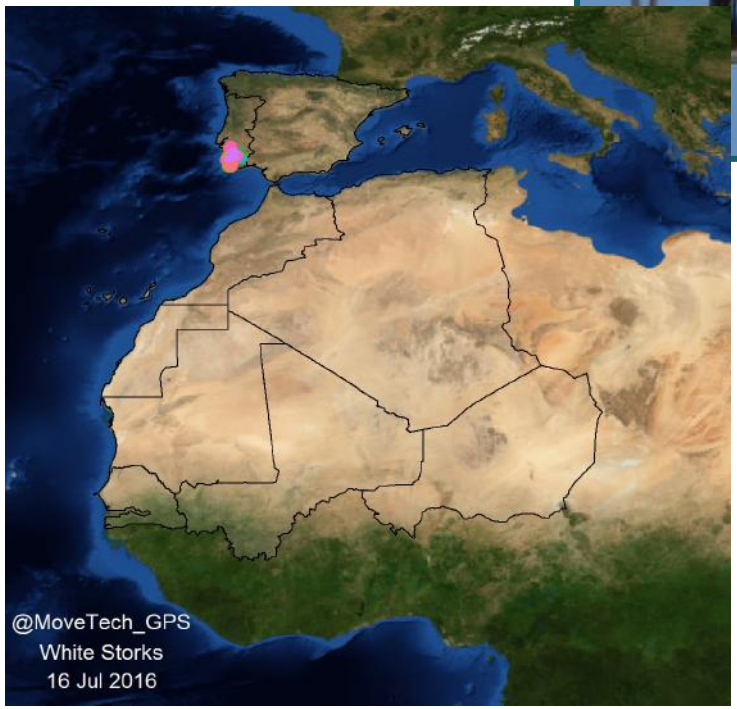
- ✓ Effectiveness of “anemometers” and design improvements
- ✓ Biologging (better loggers 3D sensors to monitor bird collisions)
- ✓ Automatic detection of bird collisions
- ✓ Wire marking device durability



Scientific advice and knowledge transfer

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- ✓ Provide the scientific evidence to support REN decisions
- ✓ REN Biodiversity Strategy
- ✓ Guidelines for consultants and conservation authorities
- ✓ Participation in scientific conferences
- ✓ Participation in CIGRE, RGI, IENE activities

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CONCLUSION: IS THE ACADEMIA-GRID OPERATORS COLLABORATION FRUITFUL ?

Benefits to the research center (CIBIO-BIOPOLIS)

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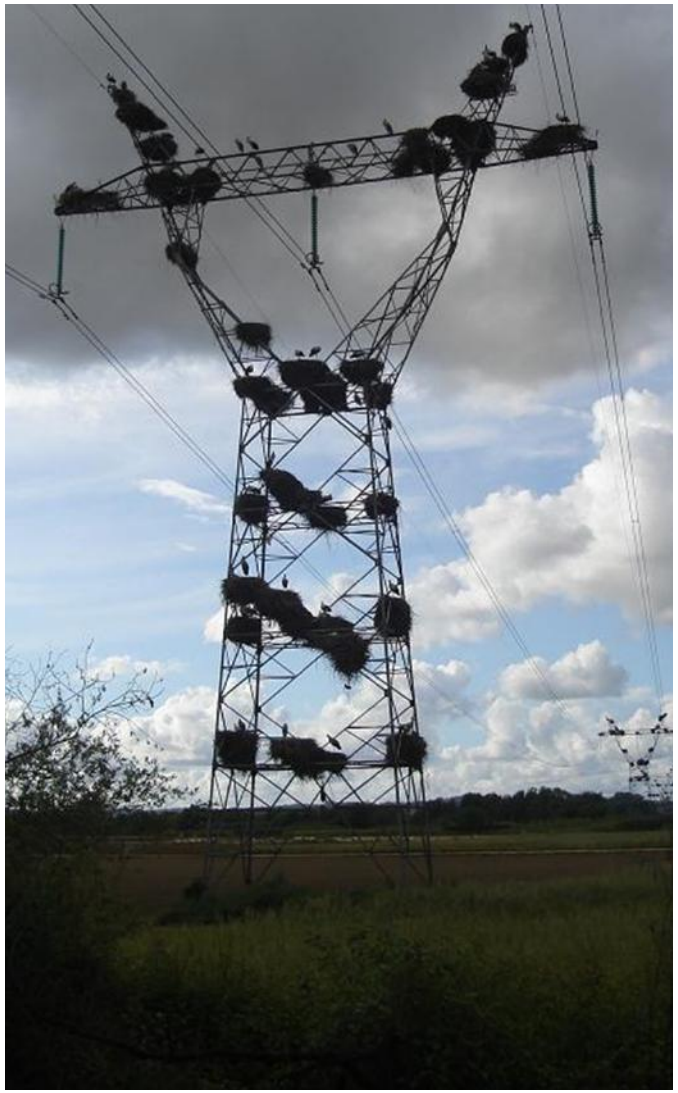
- ✓ Develop applied research to solve real world problems
- ✓ Effective knowledge transfer to society (companies, NGO, environmental authorities)
- ✓ Scientific advances in the field of impact assessment
- ✓ Advanced training of human resources
- ✓ Leverage of scientific funding
- ✓ Strengthening of CIBIO as a relevant scientific player in the field



Benefits to the grid operator (REN)

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- ✓ Participation in the co-creation of an applied research agenda to support management and decision making by the operator.
- ✓ Improvement of management and decision-making processes, based on scientific evidence.
- ✓ Improved relationships with impact assessment authorities and NGOs.
- ✓ Optimization of resources used for biodiversity management.
- ✓ Advanced training of the operator's human resources.

But some associated risks..

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- ✓ Loss of trust (perception of independence) from relevant stakeholders (NGO's and environmental authorities).
- ✓ Some research findings are not "in favor" of the operator.
- ✓ There is a thin red line between providing scientific evidence for decision-support and making public statements in favor (or against) of the decisions of the grid operator and authorities ("is a 20% risk acceptable?").

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