

Challenges and opportunities of implementing solutions as NGO

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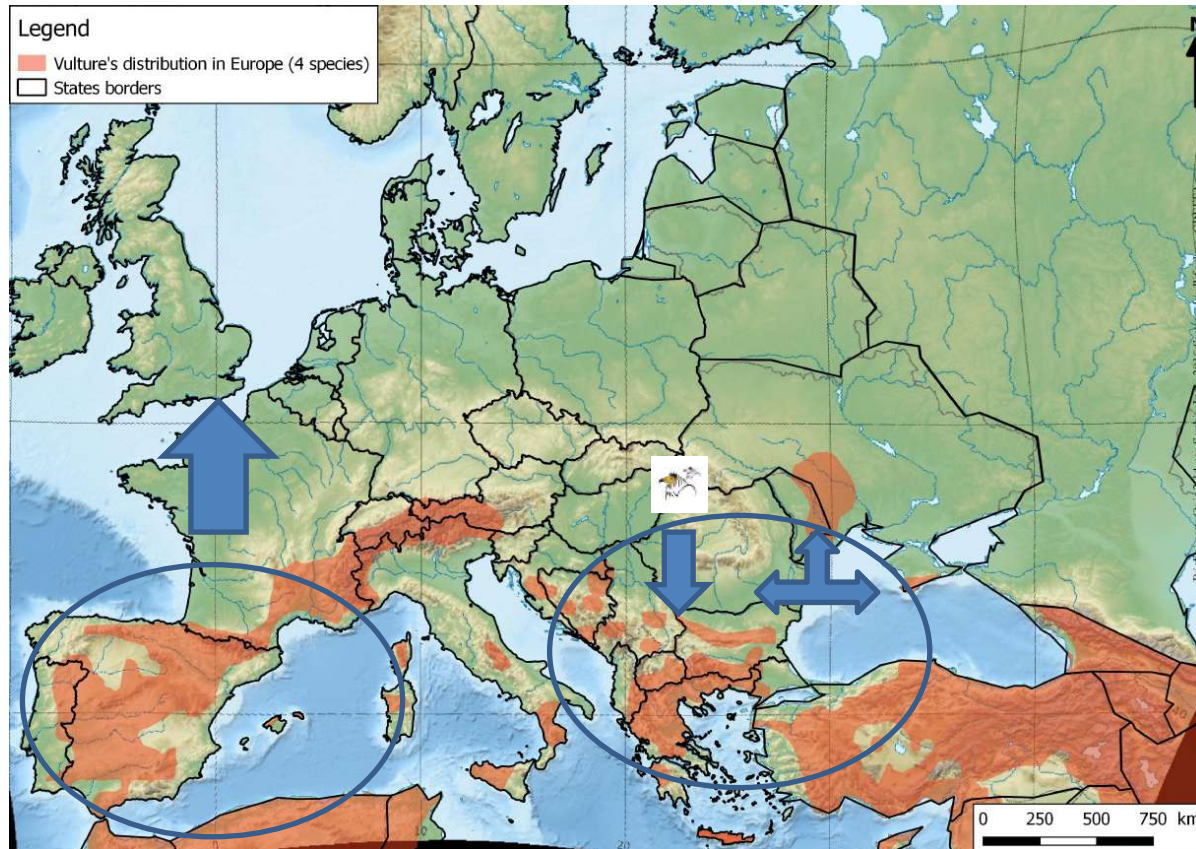




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"Yes We Can: Restoring Vulture Populations in Europe"





Need to fight the hopelessness, doom and gloom culture in the conservation world




www.theguardian.com/environment/radical-conservatic

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Environment Radical Conservation

Has hope become the most endangered species in conservation?



As wildlife continues to decline around the world, conservation has become a bleak calling. Can a new Optimism Summit help reframe the mission to save life on Earth?



Indian forest workers watch in 2008 as a rescued tigress leaps into the river Sundarikati on being released from a cage at Sunderbans, some 150 kms south of Kolkata. The most recent global survey of tigers estimated 3,690 animals in the wild. Photograph: Deshakalyan Chowdhury/AFP/Getty Images

Windows | P | e | O | S | W | X

Legend

-  Vulture's distribution in Europe (4 species)
-  States borders







**MULTI-SPECIES ACTION PLAN TO CONSERVE
AFRICAN-EURASIAN VULTURES (VULTURE MSAP)**

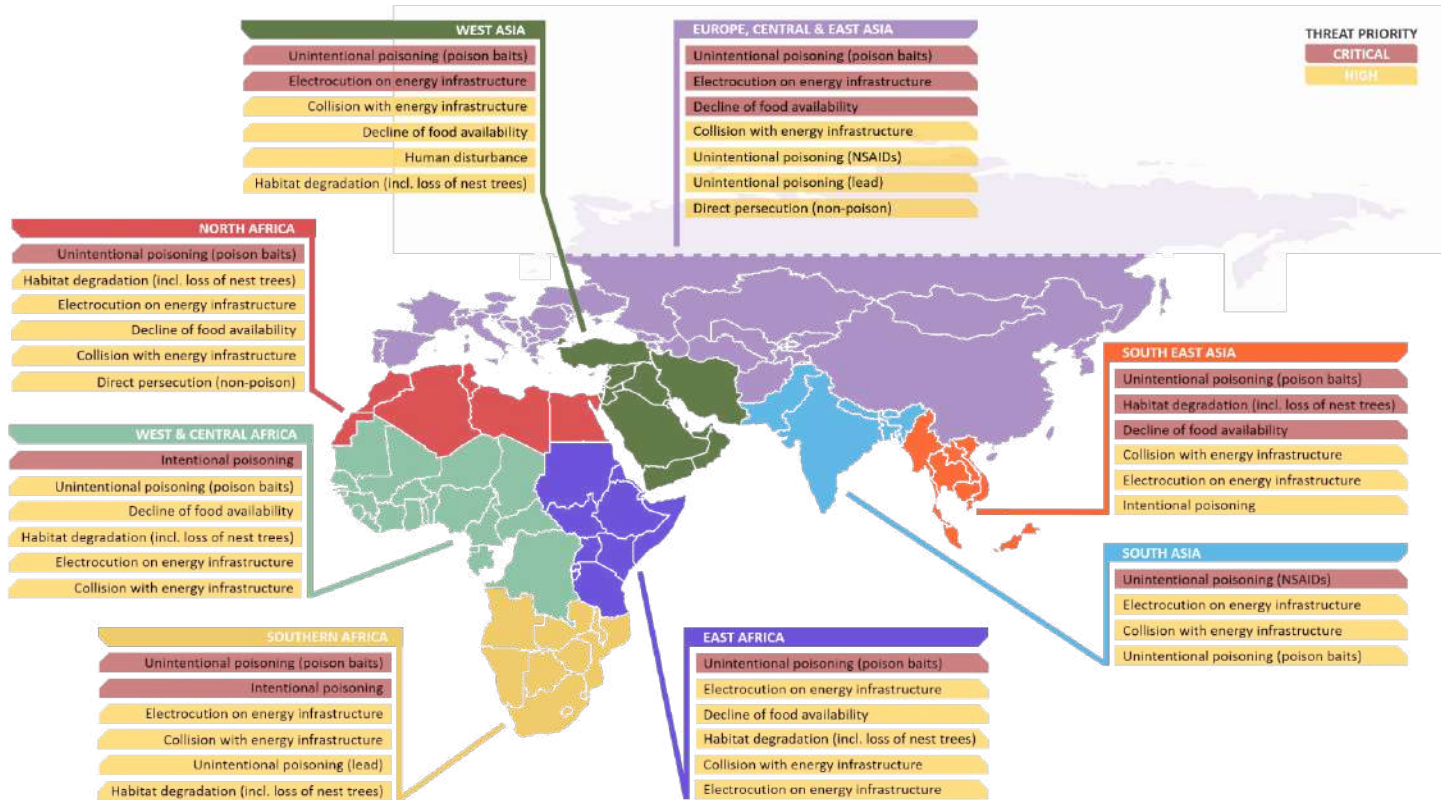
CMS Raptors MOU Technical Publication No. 5.
CMS Technical Series No. xx



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Threat Assessment

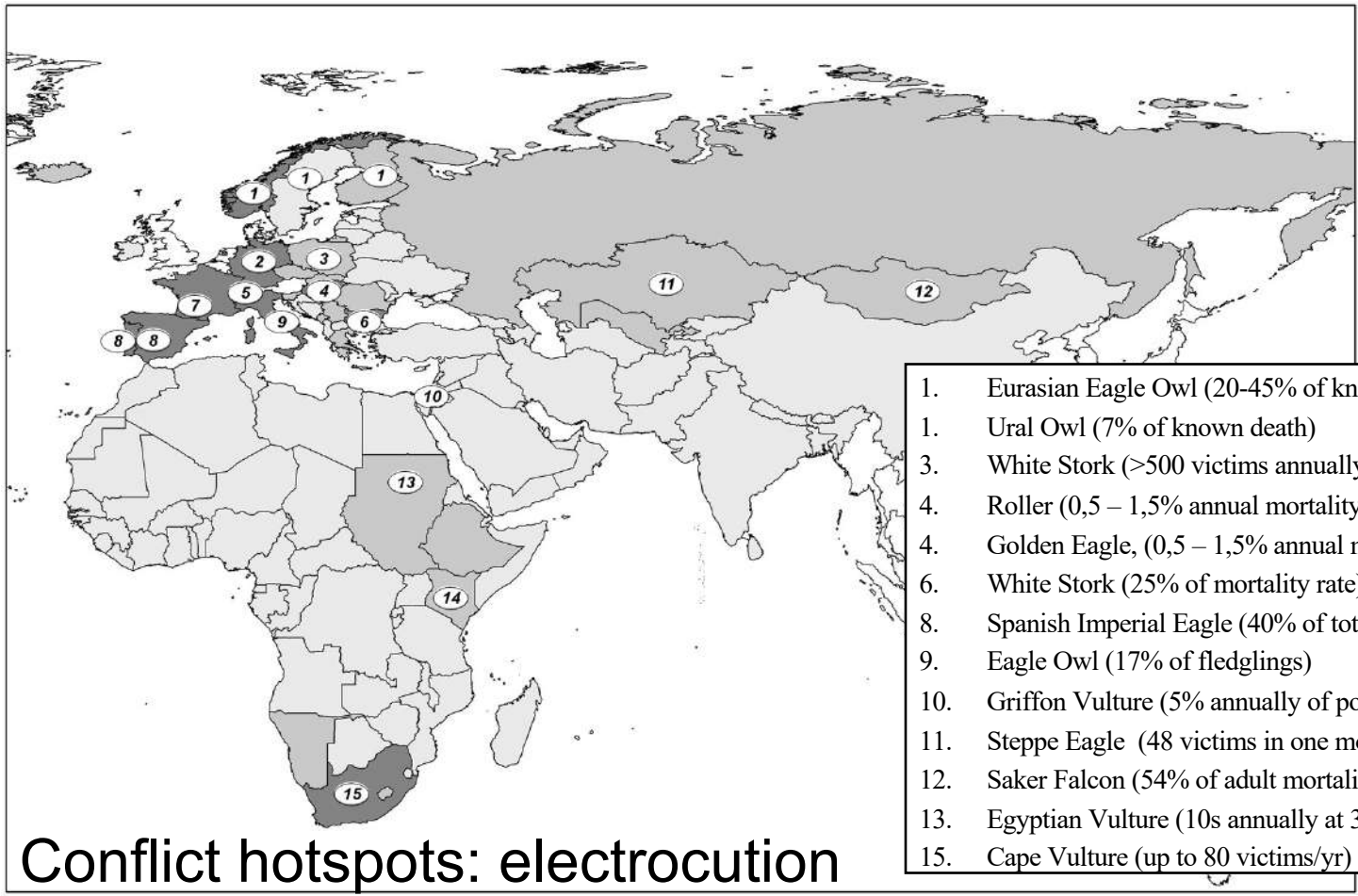


European vulture mortality database



Assessing vulture mortality at a continental scale
The benefits of centralized and standardized data

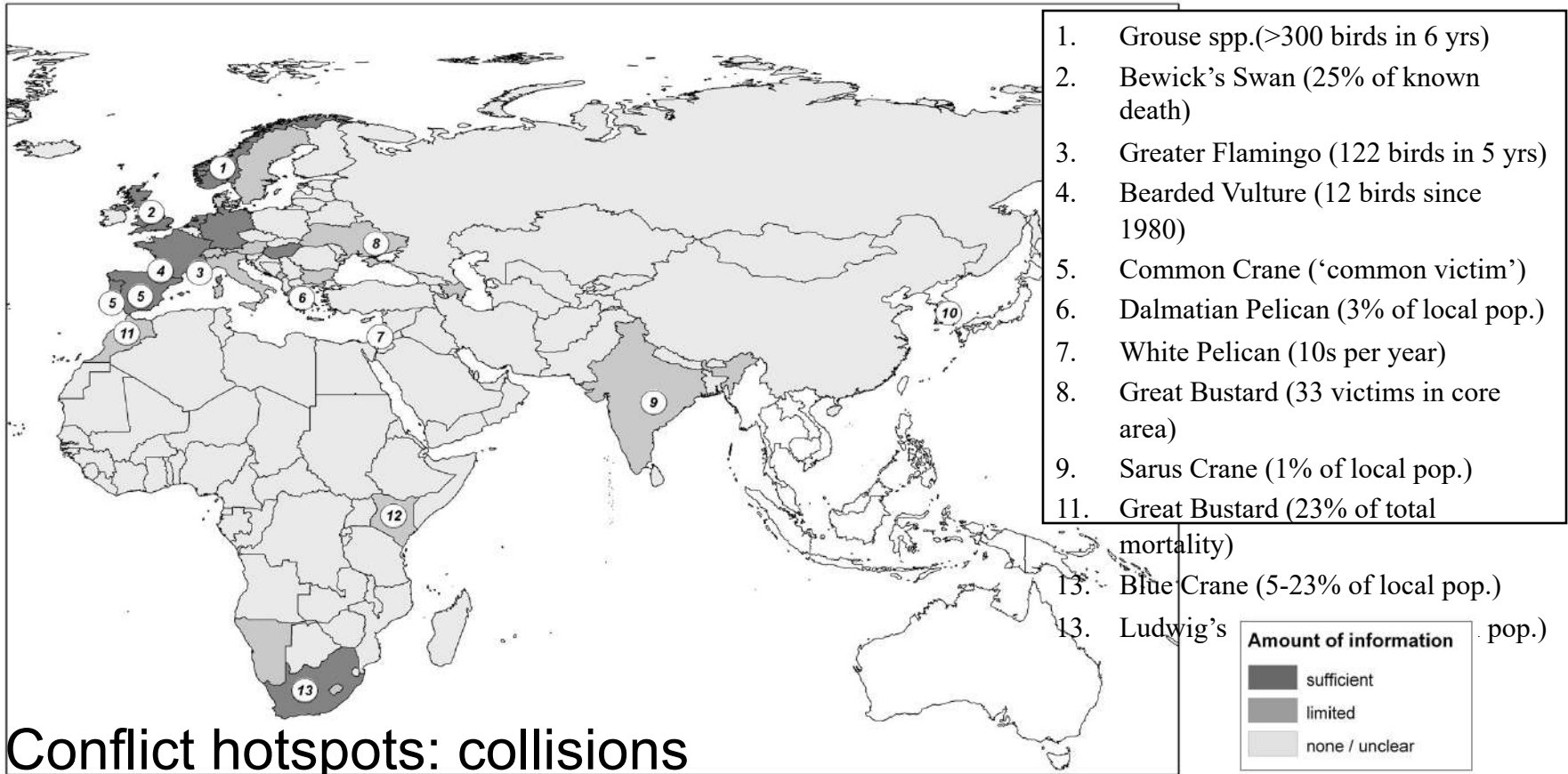


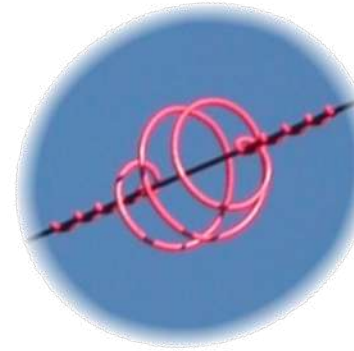
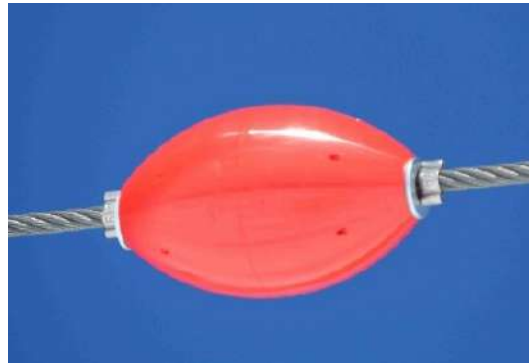


- 1. Eurasian Eagle Owl (20-45% of known death)
- 1. Ural Owl (7% of known death)
- 3. White Stork (>500 victims annually)
- 4. Roller (0,5 – 1,5% annual mortality)
- 4. Golden Eagle, (0,5 – 1,5% annual mortality)
- 6. White Stork (25% of mortality rate)
- 8. Spanish Imperial Eagle (40% of total mortality)
- 9. Eagle Owl (17% of fledglings)
- 10. Griffon Vulture (5% annually of pop.)
- 11. Steppe Eagle (48 victims in one month at 11 km line)
- 12. Saker Falcon (54% of adult mortality)
- 13. Egyptian Vulture (10s annually at 31 km line)
- 15. Cape Vulture (up to 80 victims/yr)









Legend

- Vulture's distribution in Europe (4 species)
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Main stages of programmes mitigating electrocution & collision risk

- Phase I - Facing the problem, first mitigation measures
- Phase II - Large scale surveys, larger scale mitigation measures
- Phase III - Conflict mapping and changing planning
- Phase IV – Liability and regulatory framework

Comité National Avifaune (CNA). It includes EDF (now ENEDIS), RTE (Réseau de Transport d'Electricité), FNE (France Nature Environnement) and LPO. This agreement formalises the commitment of the contracting parties to work together to reduce the impact of the electricity network on avifauna.

What have we learnt - Impacts

- Increase global energy consumption + focus on decarbonisation = **significant increase in energy infrastructure**
- Impacts on vultures & birds of prey: (-) **mortality**, loss of habitat (+) nesting substrates
- **Mortality: huge** (e.g. Spain 33,000 raptors killed every year, Italy: one third of all mortality of Italian tagged Egyptian Vultures & half of all mortality of Bonelli's eagle released in Sardinia)
- Mortality: **electrocution** + collision with cables + **collision with wind farms**
- **Mortality: electrocution & collision with wind farms - evidence for population level impacts on vultures and raptors**
- Electrocution Medium tension 1-66kV: **pole configuration is key**, higher risk with upturned pins. **Can reach 0,25-0,50 birds/pole/year**
- **Collision with cables: Bird vision important.** Birds – more lateral vision than front forward vision; height of structures is factor; earth wire main problem; impacts more significant with bustards
- **Collision with windfarms: key factors: bird wing load, behaviour; Micro-sitting; height turbines: higher risk with bigger turbines, which are becoming mainstream, lower efficiency of mitigation measures**

Powerline networks

107,000 km high voltage transmission
1,468,000 km medium voltage transmission



- 15,7 km were secured + 3,6 km were neutralised



- We plan to secure and neutralise 2 to 4 priority sites = around approximately **20 km** of priority lines.





Mitigating electrocution risk @ 28 poles

Removal (withdrawal) of 2.5 km of the HTB Castirla Francardo line in the Corsican Center.

Mitigating collision in 1,5km





Rupis
LIFE



Number of pylons insulated 165 (Portugal) + 76 (Spain)

Km of lines equipped 24km (Portugal) + 27km (Spain)





- 2 out of 3 electricity distribution companies in Bulgaria: CEZ Razpredelenie AD & EVN Elektorazpredelenie EAD.

- Vultures Return in Bulgaria LIFE08 NAT/BG/278 - 40 electricity pylons, including the pilot mounting of MST wing-spacers (by EVN and CEZ)

- Bright Future for Black Vulture LIFE14 NAT/BG/649 - 100 pylons and 38 inter-pylons spaces (collision) were secured (by EVN and CEZ)

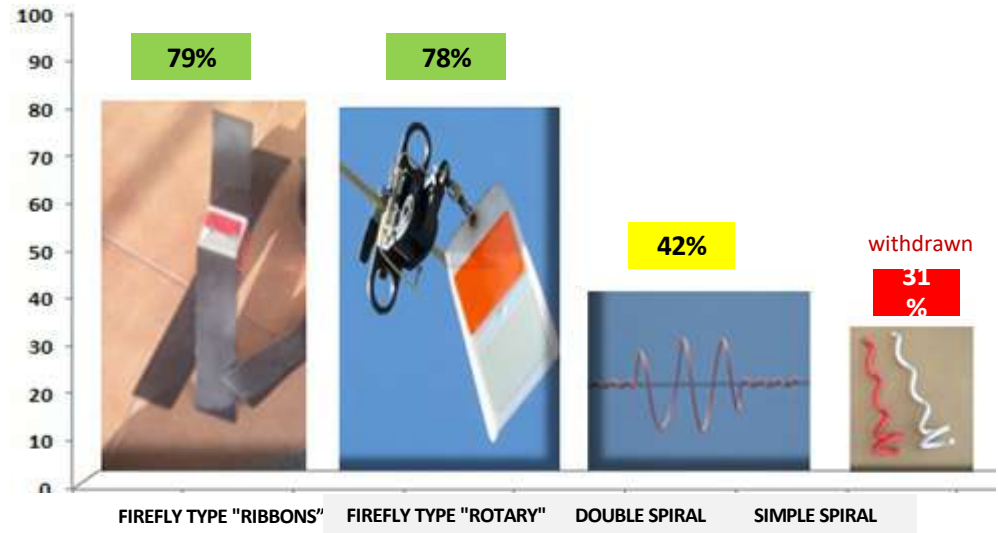
- LIFE22-NAT-BG-Bearded Vulture LIFE-101113869 plans to secure 600 pylons (by EVN)



What have we learnt - Mitigation

- **Where to start? Prioritise:** nesting sites, foraging sites, but difficult with dispersing juveniles
- **Sensitive mapping important – mapping risk**
- **Joint analysis of data** (tagged birds, electricity network) important
- **Rapid intervention important**
- Collision: 1) spirals (1m x 30cm) 2) flapper diverters – mobile and reflective (at least 35cm long); Evidence latter more efficient 3) double belt (on top of motorways and train lines)
- Anti-collision devices: minimum distance every 10 m on top wire, or 20m if on two wires
- Electrocutation:
- Recommended Distances – hanging downward chains (under cross bar) +60cm, horizontal chains +1m (not including the staple); vault type 0,88m + 1m to central wire; Canadian type, +1,5m between cross bars
- **Wind farms – automatic detection technologies can help manage risk**

EFFECTIVENESS OF APPLIED TECHNOLOGIES

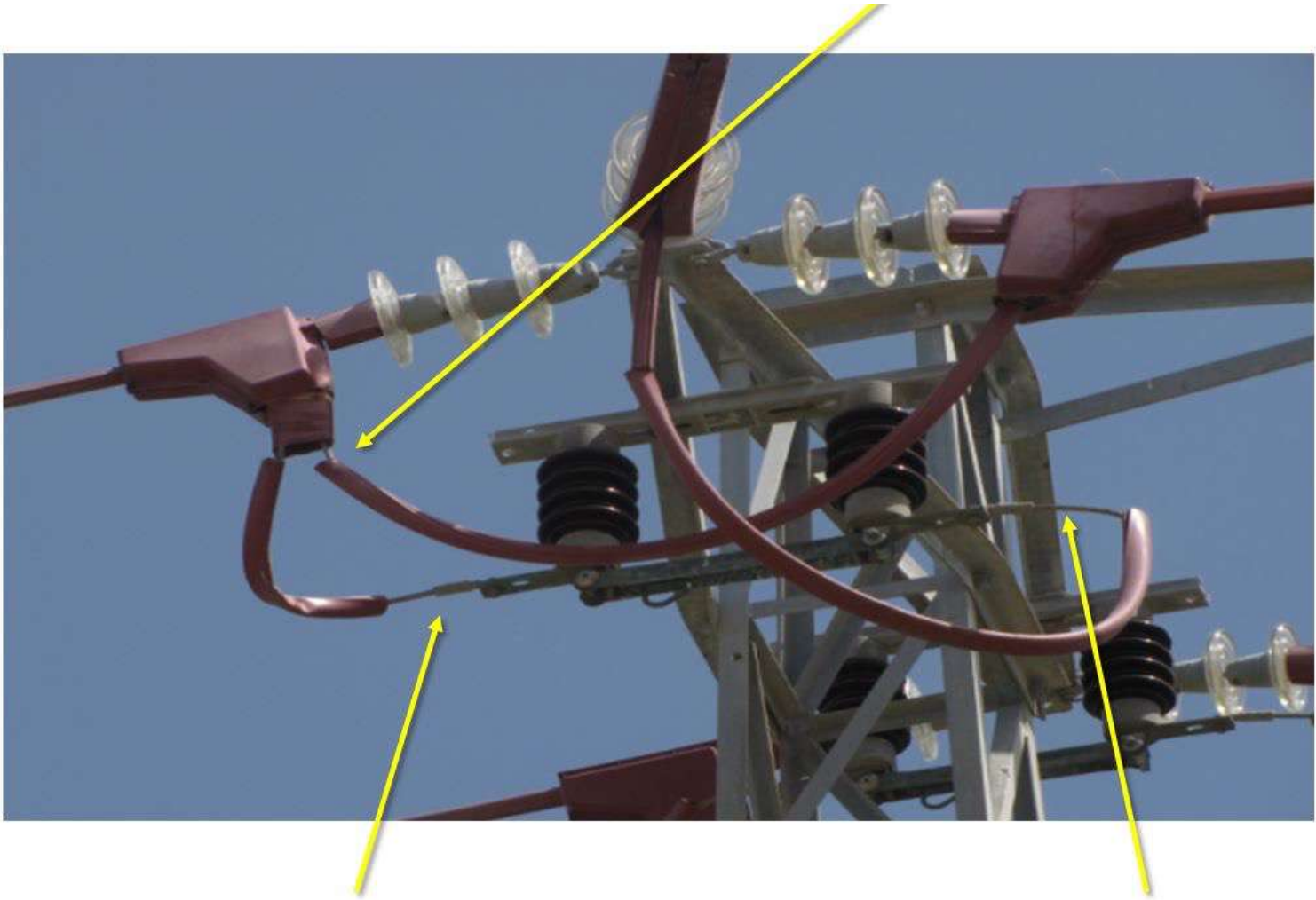


These results show the average efficiency of each of the equipment at a national level. However, the reality may change for different habitats and different species.

What have we learnt - Mitigation

- **Zero mortality impossible target.** Reduce it to tolerable levels
- **Structural changes of the poles better**, permanent, no problems with deterioration of the material. Slower, long administrative procedure
- Insulation – no spaces left. Suspended insulators – fixing clamps; **Technique and work very important. Need to train teams!**
- **Durability of insulation – 20 years**, sometimes much shorter; Installation supervision and periodic monitoring
- **Electrocution - anti-perching systems can also be installed on cross bars. Low effectiveness.** Must be complemented with insulation devices
- **Electrocution – insulated crossarm being tested.** Cheaper than insulation.
- Not one method is fully effective, should be implemented in combination: insulation with anti-perching

Material wear, bad installations...



What have we learnt - Mitigation

- **Collision: not permanent solution, effectiveness is highly variable and dependent on other factors (weather, etc).**
- Collision: ultraviolet lighting (good results in USA)
- Collision: **possibly underestimated?**
- **Sometimes operational issues with technical solutions to mitigate electrocution and collision:**
Insulation solutions – can cause problems, fires, insects, outages (e.g. Croatia, wind and salt); also anti-collision devices (fireflies in Cyprus)
- **Use of drones to put anti-collision devices** with no interruption of service (vs helicopter) – cost 10,000€/1,5 km line

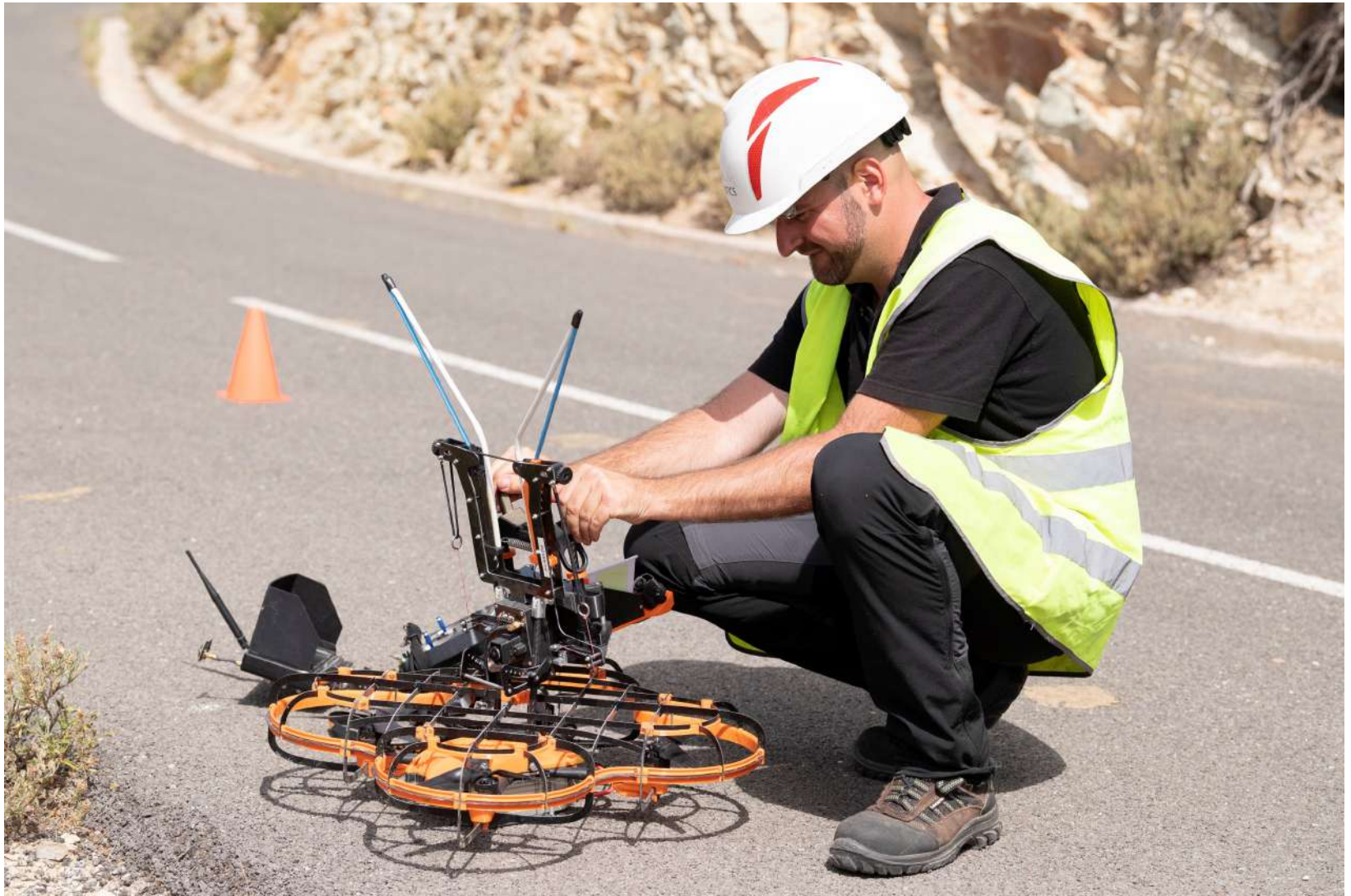
Some innovation....



X SKYDRONE
ROBOTICS



Photo : Yann Maurel-Enedis



What have we learnt - Mitigation

- **Windfarms: avoid sensitive locations** (sensitivity mapping, collision risk modelling, spatial planning)
- **Windfarms: micro-siting**
- **Windfarm: blade painting** (still need to be tested)
- **Windfarms: shut down on demand, most effective way.** Losses in energy negligible. **Needs detection system** (observers, technology or hybrid) + **shut down criteria** (site & species based). Shut down fast 15-30s, direct access recommended; Technological approaches – use proxys to establish risk situations, Radars (night, long detection range/cover wide area, no species ID, expensive) or cameras (species ID, small range coverage, relatively expensive)
- Performance – difficult to get data from companies. Cameras – better than observers, reduced mortality 63% (USA); insignificant economic loss due to SDOD

What have we learnt - Mitigation

- **Performance – observers – reduced mortality by 60-90%** (90% in griffons) Spain; almost zero mortality, with 0 to 1% economic losses (Portugal)
- **Trainers – recruitment & training is essential**
- **Technology will play increasing part in future (scale). AI will improve technology**
- Windfarm: offshore & night migratory species – have to rely on technology
- **SDOD costs should be incorporated into running costs**
- Windfarm – Vultures - removal of carcasses-food of wind farm area
- Windfarm – **Vultures – do not avoid windfarms**, low manoeuvrability, so spatial planning important
- Vulture vision: lateral vision more important than front binocular field (short and narrow); area above bill-head blind spot – projecting forward when vulture is flying. So prone to collide
- Vulture vision: Acuity good (distance viewing), **highest with black & white patterns (internal contrast)** and day light

International agreements relating to power lines

CMS

- CMS conference in Manila/Philippines (Oct. 2017), 12th Meeting of the Parties



AEWA

- AEWA conference in Durban/South Africa (Dec. 2018), 7th Meeting of the Parties



Bern Convention

- 38th Standing Committee meeting in Strasbourg /FRA (Nov. 2018)



What have we learnt – Legal framework

- CMS & Bern Conventions: Identify and modify sections that cause mortality
- **Principles: New infrastructure to be built should be complying with best practices (pole design and isolation) + infrastructure already built within priority zones should be corrected. Need for owners of lines to keep a record of electrocution and collision, actions and state of play, and transfer that to authorities**
- **Legislation in Spain offers good example:**
 - ✓ Royal decree 1432/2008 – Technical standards aimed at protection of birds against electrocution – applies to all new powerlines to be built + already built within priority zones (SPAs, other priority sites)
 - ✓ Act 26/2007 (Env. Liability directive): if a power line has caused electrocution, has not been repaired, owner informed – **obligation to repair** (proportionality of sanctions)
- **Funding issue.** Spain invested 100M€ in last years, now allocating 60M€ from PRR (post covid EU recovery), objective to mitigate 20,000 pylons; REN España – 1M€/year alone anti-collision (200km/year)
- Elsewhere, smaller funding: LIFE projects

Primera sentencia firme contra una empresa eléctrica por la electrocución de aves

La Justicia ratifica una multa de 143.000 euros a Iberdrola por los daños a un águila Imperial

WALTER ARRIETA

27 MAR 2018 - 10:50 CET



El espécimen de águila imperial destruido por la empresa eléctrica. @SEO_BirdLife



 **SEO/BirdLife** 
@SEO_BirdLife 

Tras la sentencia que os contamos ayer 📢, hemos conocido que @iberdrola da pasos en la buena dirección. No la ha recurrido y activa un plan acelerado para adaptar 200.000 tendidos hasta 2025. Hay mucho por hacer. No es mal inicio. Que cunda el ejemplo. seo.org/2018/03/22/la-...

12:16 - 23 mar. 2018

Accessible Sky agreement (Hungary)

- Regular, structured cooperation (Coordinating Committee, common projects, database of priority power lines and bird casualties)
 - Amendment of standards
 - Legal Amendments of the Act on nature conservation
-
- All detected bird mortality is reported to the Environmental Authority, who start legal procedure in all critical cases
 - Electricity companies are obliged to change pylons, where mortality was detected, otherwise they will be fined



What have we learnt– Institutional

- **New medium voltage lines– single bundle cable**
- **Role of the energy sector state regulator?**
- **Technical commission for powerline and birds** - Discuss guidelines, prioritise areas. Important process
- **Invite electricity distribution utilities as project partners**
- **Having a stable referrant** - champion in the electricity distribution companies
- **Operational losses (cost-quality of service) and socio-economic costs of electrocution (e.g. forest fires).**
- **Financing:** 0,5% domestic bills funding collision-electrocution impact mitigation projects (Portugal)
- Guidelines and online training courses exist (IUCN, etc), including app

Thank you!



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Together for Vultures

