



# Conservation measures for fauna species - seabirds

Lessons from the past and ideas  
for the future

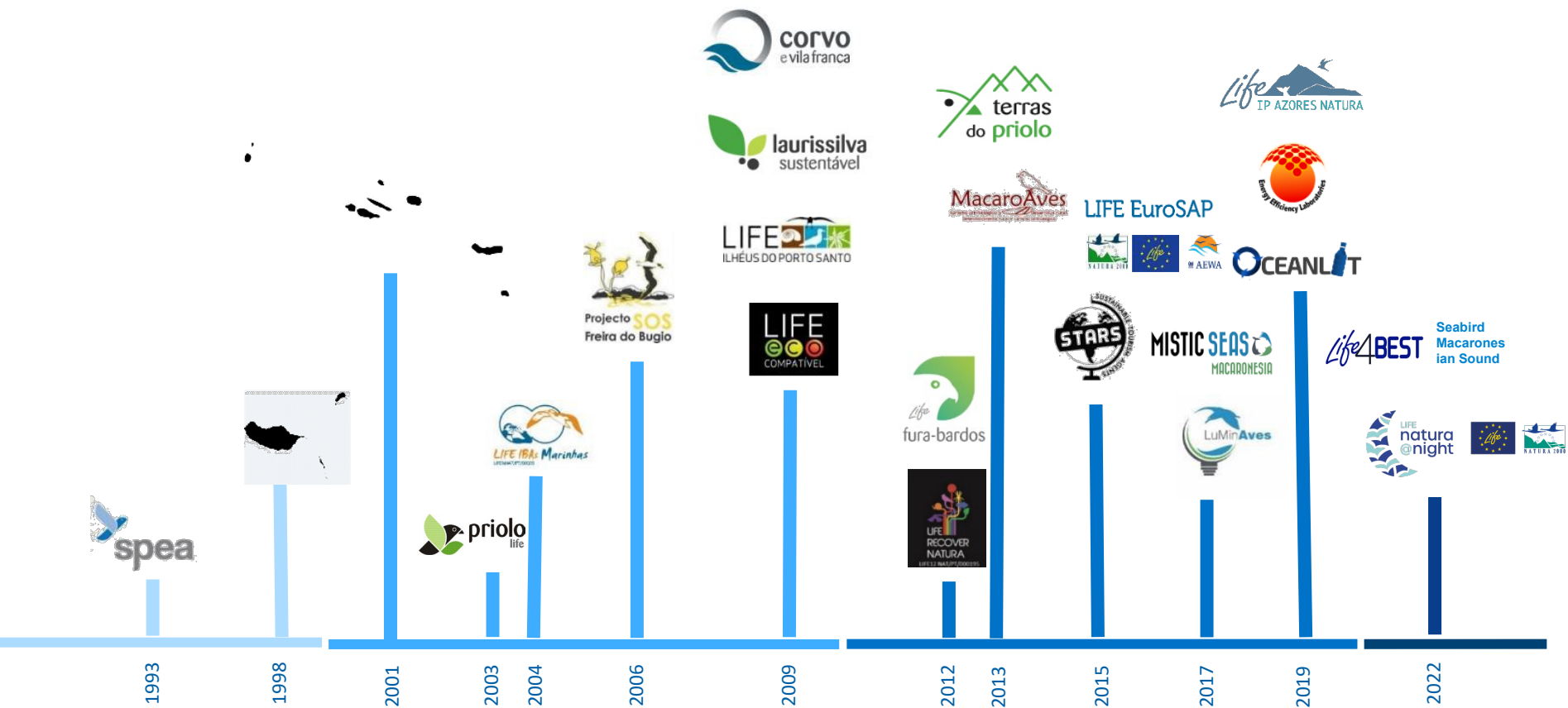
## SPEA – Portuguese society for the study of birds

SPEA is a non-profit environmental NGO whose mission is to work for the study and conservation of birds and their habitats, promoting development that guarantees the viability of the natural heritage for the enjoyment of future generations.

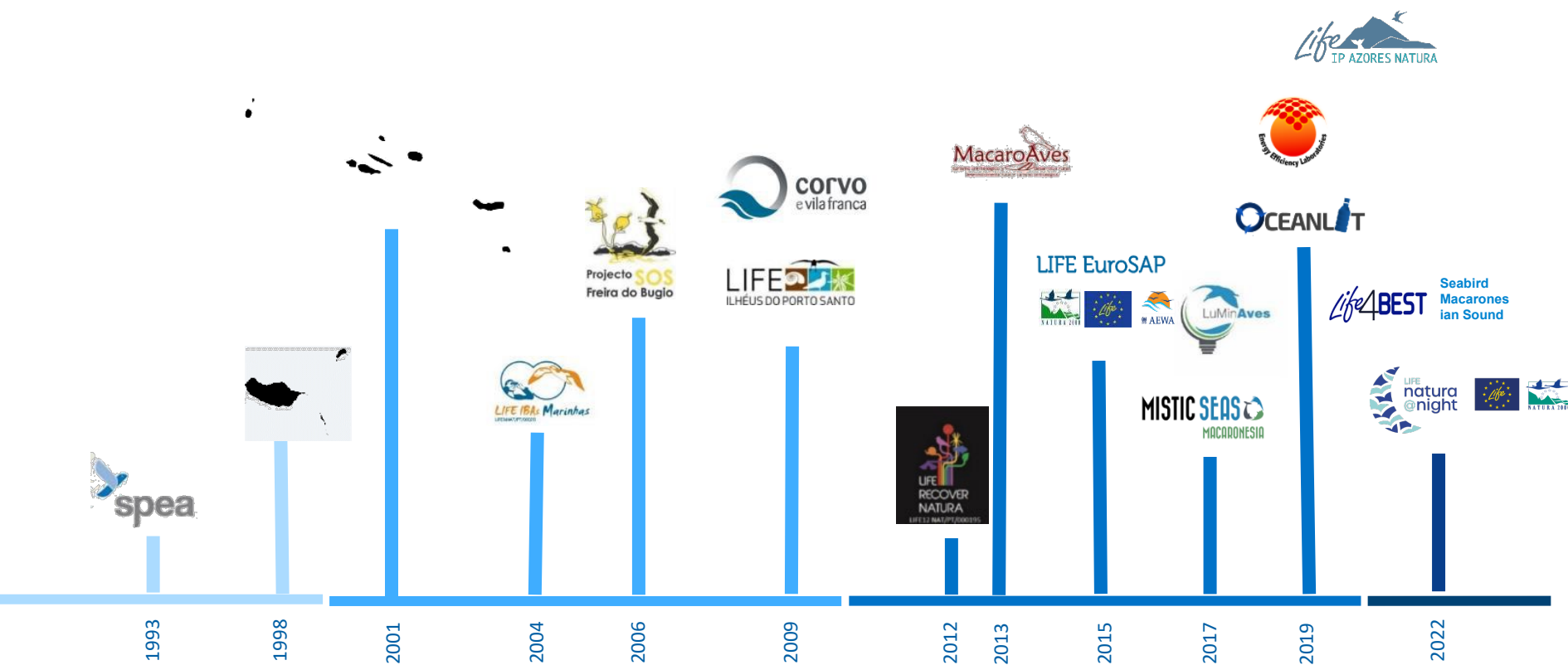
- We are present in Lisbon, São Miguel island (Açores) and Funchal (Madeira) and also develop work internationally.
- We currently have more than 4.500 members
- We involve in our projects around 500 volunteers per year
- We are BirdLife International in Portugal



# SPEA IN MACARONESIA



# SPEA IN MACARONESIA (SEABIRD CONSERVATION)





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# 18 Breeding Species in Portugal



# Seabirds breeding in the Azores

## Order Procellariiformes

(Latin *Procella*, storm)



**Band-rumped Storm-petrel**  
*Hydrobates castro*



**Monteiro's Storm-petrel**  
*Hydrobates monteiroii*



**Audubon's Shearwater**  
*Puffinus lherminieri*



**Cory's Shearwater**  
*Calonectris borealis*



**Bulwer's Petrel**  
*Bulweria bulwerii*



**Manx Shearwater**  
*Puffinus puffinus*

## Petrels

## Order Charadriiformes



**Yellow-legged Gull**  
*Larus michahellis*



**Common Tern**  
*Sterna hirundo*



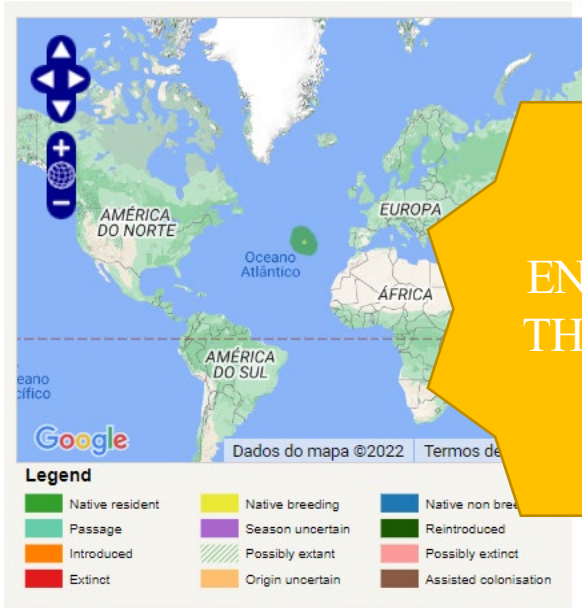
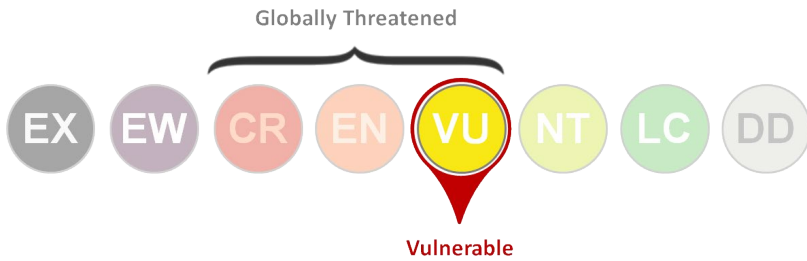
**Sooty Tern**  
*Onychoprion fuscatus*



**Roseate Tern**  
*Sterna dougallii*

## Gulls & terns

# Monteiro's stormpetrel *Hydrobates monteiroi*



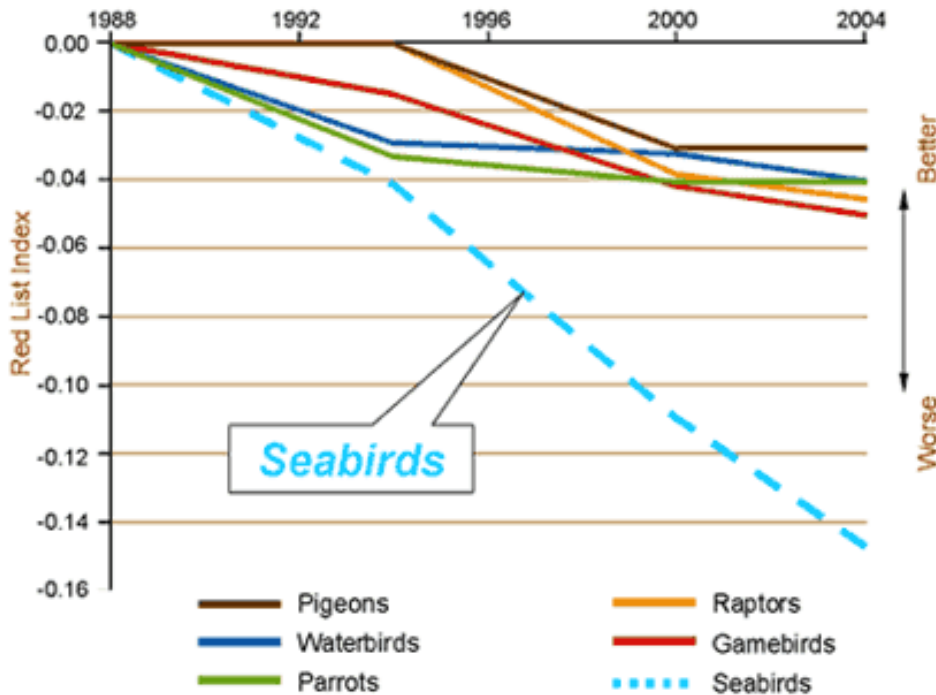
ENDEMIC TO  
THE AZORES



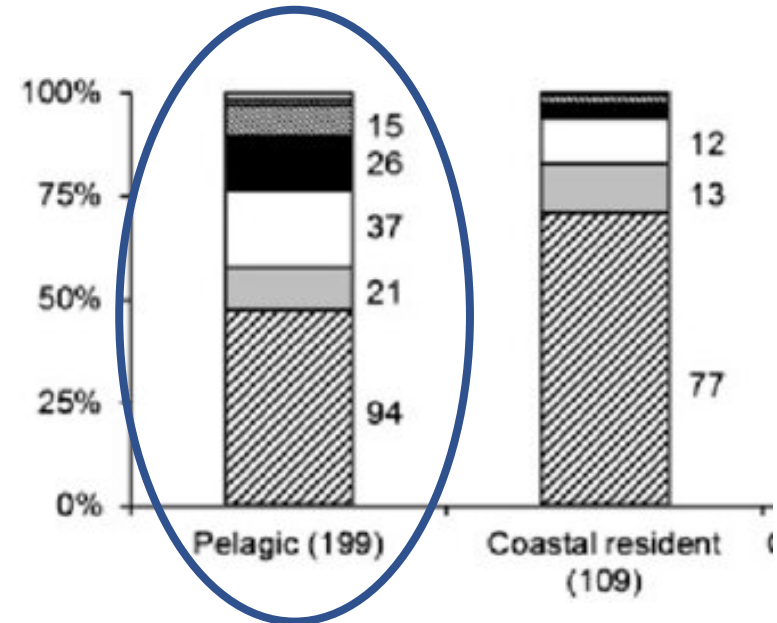


# Seabirds are the most threatened group of birds worldwide

Red List indices for selected species-groups



- Data Deficient
- Extinct
- Critically Endangered
- Endangered
- Vulnerable
- Near Threatened
- ▨ Least Concern



Butchart SHM, Stattersfield AJ, Bennun LA, Shutes SM, Akçakaya HR, Baillie JEM, et al. (2004) Measuring Global Trends in the Status of Biodiversity: Red List Indices for Birds.

Croxall, John & BUTCHART, STUART & Lascelles, Ben & STATTERSFIELD, ALISON & Sullivan, Ben & Symes, Andy & TAYLOR, PHIL. (2012). Seabird conservation status, threats and priority actions: A global assessment. Bird Conservation International. 22. 10.1017/S0959270912000020.

# Main threats to seabirds in Macaronesia

1. Predation by introduced species;
2. Light pollution;
3. Marine litter;
4. Disturbance due to human presence;
5. By-catch / Ghostfishing.

MACARONESIAN ROOF REPORT 2018. Document information: Project MISTIC SEAS II. Partner leading "Subdirección General para la Protección del Mar" of the "Ministerio para la Transición Ecológica -MITECO" with the collaboration of the "Instituto Español de Oceanografía -IEO".

01

Predation by  
introduced  
species



Cats are responsible for 84% of shearwater predation.

Seabirds account for 10.6% of the black rat's diet in Corvo island.

Parejo, S. H., Royuela, J. B., Rodríguez-Luengo, J. L., Ramos, J. A., Medina, F. M., Geraldés, P., ... & Nogales, M. (2015). The impact and legislative framework of invasive mammals on Portuguese Macaronesian islands: A case study on Corvo, Azores. *Environmental Science & Policy*, 52, 120-128.

Hervías, S., Ceia, F. R., Pipa, T., Nogales, M., de Ybáñez, R. R., & Ramos, J. A. (2014). How important are seabirds in the diet of black rats on islands with a superpredator?. *Zoology*, 117(3), 171-178.



# Solutions to reduce seabird predation



- Construction of artificial nests that make access to predators difficult;
- Sterilization and marking campaigns for stray animals;



# Solutions to reduce seabird predation


- Exclusion of predators in nesting areas;
- Ultrasound deterrents (?)



02

Light pollution



A nighttime photograph of a city waterfront. In the foreground, a curved concrete promenade is lined with modern, cylindrical bollard lights. To the right, a marina is filled with boats, their lights reflecting on the water. In the background, several multi-story buildings are illuminated, with their lights contributing to the overall light pollution. The sky is dark, and the water shows some light trails from long-exposure photography.

**Light pollution** is the excess of artificial light emitted by large urban centres. Its sources are diverse and include, for example, outdoor lights, advertisements and, above all, artificial street lighting.



Nocturnal  
when in  
Land



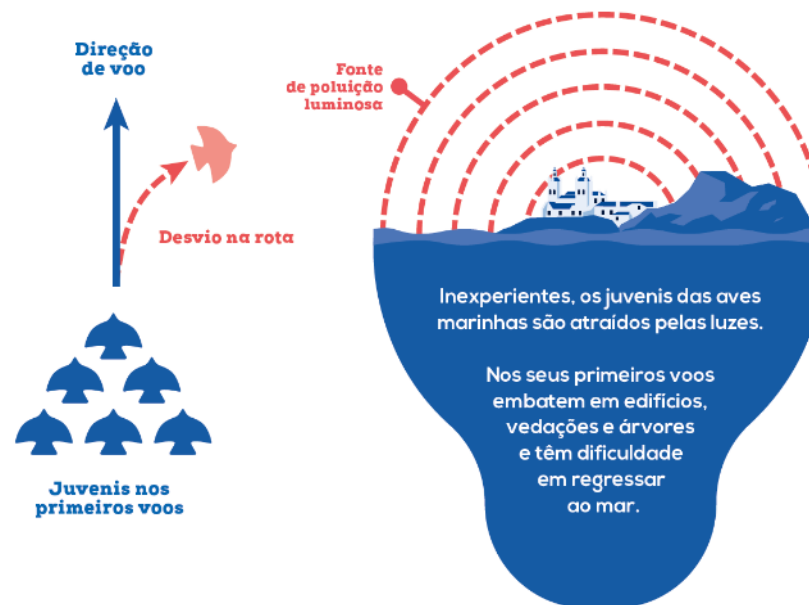
Eyes  
adapted  
to night



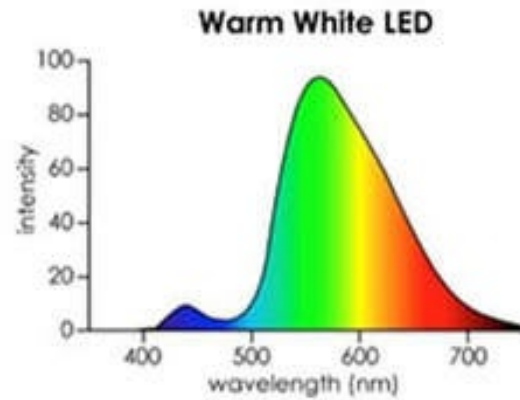
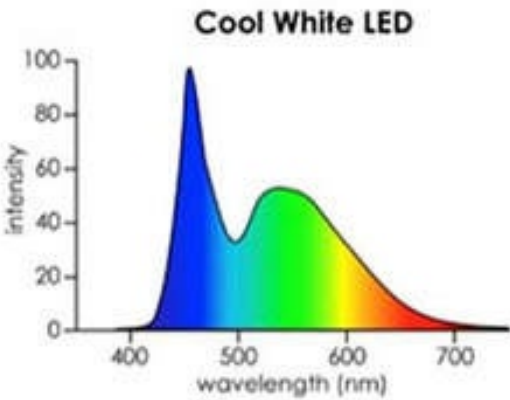
Guided  
by stars



High  
sensitivity  
to light



# Technical solutions to reduce light pollution



## Examples of Acceptable / Unacceptable Lighting Fixtures

Unacceptable / Discouraged Fixtures that produce glare and light trespass	Acceptable Fixtures that shield the light source to minimize glare and light trespass and to facilitate better vision at night
<p>Unshielded Floodlights or Poorly-shielded Floodlights</p>	<p>Full Cutoff Fixtures</p>
<p>Unshielded Wallpacks &amp; Unshielded or Poorly-shielded Wall Mount Fixtures</p>	<p>Fully Shielded Wallpack &amp; Wall Mount Fixtures</p>
<p>Drop-Lens &amp; Sag-Lens Fixtures w/ exposed bulb / refractor lens</p>	<p>Fully Shielded Fixtures</p>
<p>Unshielded Streetlight Unshielded Bollards Unshielded Barn Light</p>	<p>Full Cutoff Streetlight Fully Shielded Barn Light Fully Shielded Walkway Bollards</p>
<p>Louvered Marine-style Fixtures Unshielded Period Style Fixtures Drop-Lens Canopy Fixtures</p>	<p>Fully Shielded Decorative Fixtures Fully Shielded Period Style Fixtures Flush Mounted or Side Shielded Under Canopy Fixtures</p>
<p>Unshielded PAR Floodlights</p>	<p>Shielded / Properly-aimed PAR Floodlights</p>

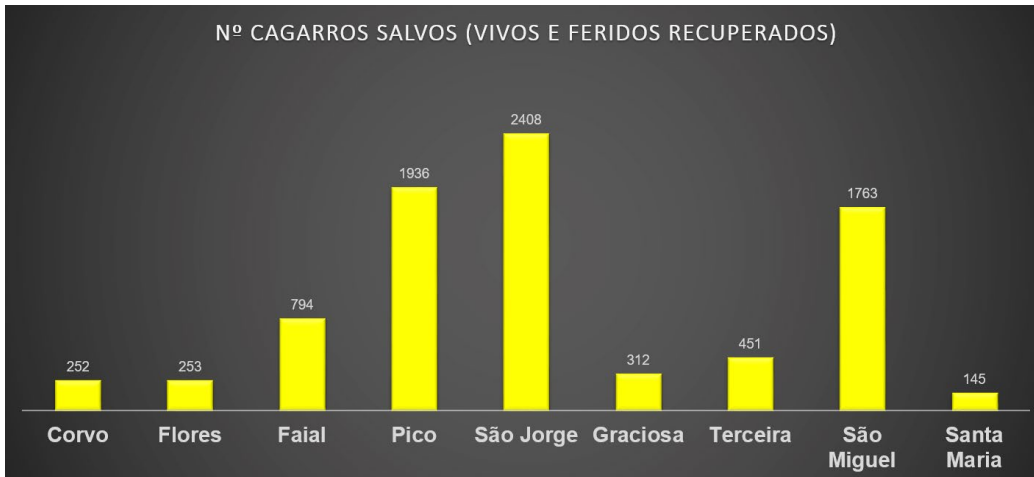
Illustrations by Bob Crelin © 2005. Reprinted for the Town of Southampton, NY. Used with permission.



# Solutions to mitigate the impact of light pollution



The SOS cagarro campaign is one of the oldest animal rescue campaigns and has been running since 1995.



**CAMPANHA / CAMPAIGN**

Todos os anos, milhares de cagarros são encadeados pelas luzes artificiais e caem em todo o arquipélago.

Every year thousands of Cory's shearwater are grounded by artificial light in the Azores archipelago.

**Participe nesta campanha de salvamento!**

Join the rescue campaign!

**Mais informações no site**  
More information on the website  
[soscagarro.azores.gov.pt](http://soscagarro.azores.gov.pt)

**LINHA SOS AMBIENTE**  
SOS ENVIRONMENT HOTLINE

**800 292 800**  
24 H (gratuito / free)

Esta campanha está associada ao projeto LuMinAves  
This campaign is associated with the LuMinAves project  
MAC / 4.64 / 157 /  
Mais informações em / more information go to:  
[www.luminaves.com](http://www.luminaves.com)

**Registe a localização GPS dos salvamentos**  
Register grounded Cory's GPS location

Experimenta o nosso **FORMULÁRIO MOVEL**  
Try our mobile form

em: em / go to:  
-form.azores.gov.pt  
- clique em / click on  
> FORM  
> SOS CAGARRO

But these campaigns can also be a source of information for conservation purposes





But these campaigns can also be a source of information for conservation purposes

### Nº cagarros resgatados por noite

Marina-Porto Vila Franca do Campo 2022

VIVOS FERIDOS MORTOS TOTAL



Campanha SOS Cagarro 2022 | Brigadas de resgate SPEA

Fonte: Beatriz Martins • Criado com Datawrapper

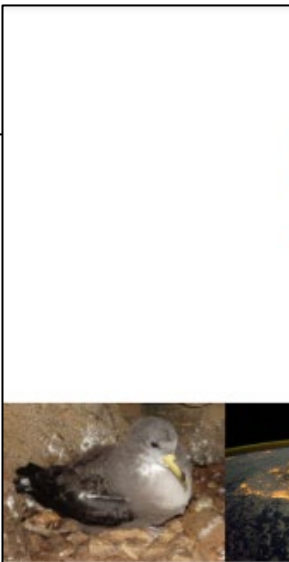
# Mitigation proposals and Public Lighting Plans.



Uso sustentável da Luz Artificial

Proposta de mitigação da Poluição Luminosa e áreas a apagar durante a campanha SOS Cagarro - Nordeste

Açores , Setembro 2021



Proposta de apagar dur

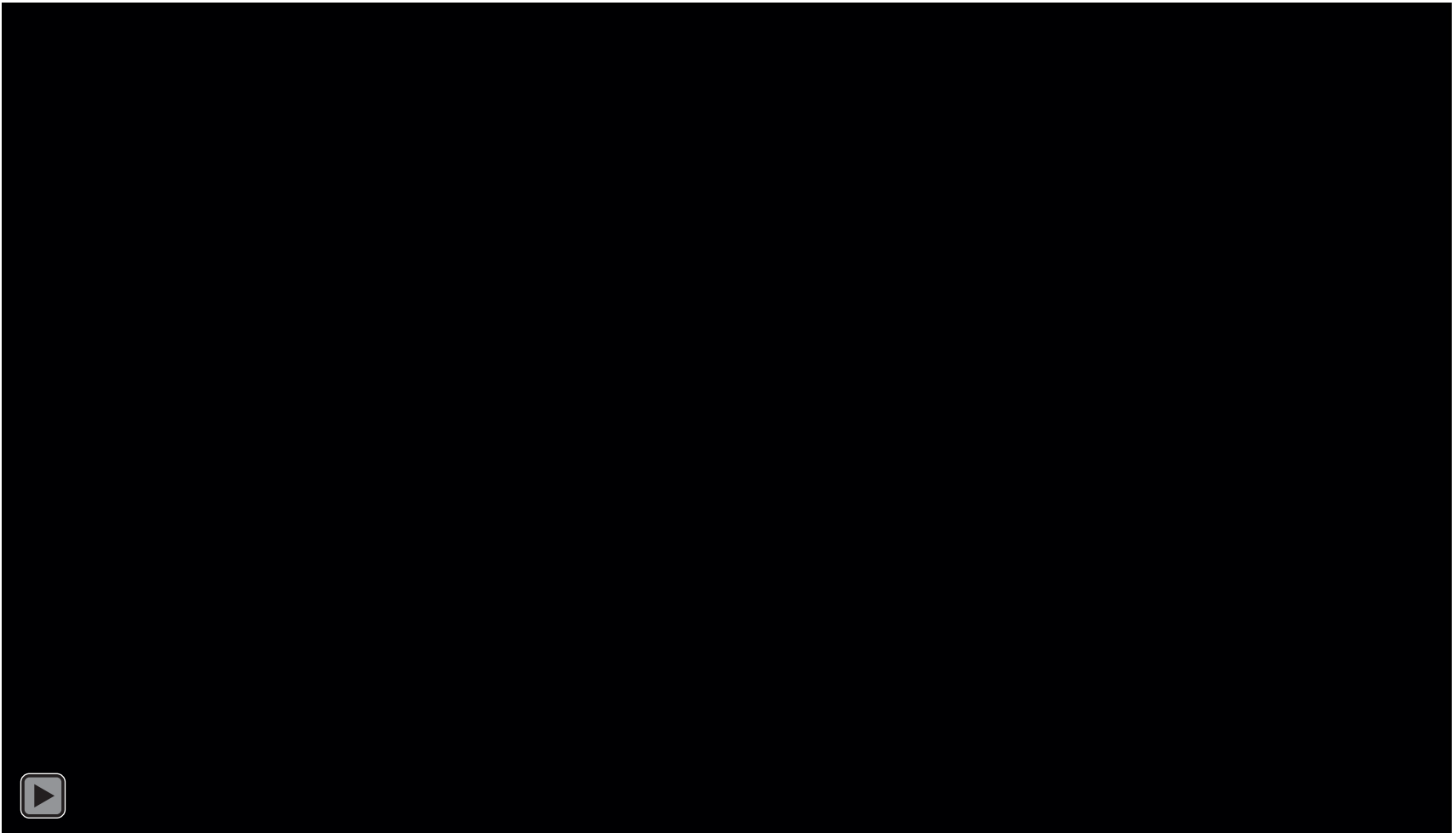
Proposta de mitiga apaga



MAC2/4.6D/302



# Corvo 2021 – Lights off for the seabirds



03

Marine litter



## Solutions to address marine litter problem

- Reduce consumption of plastics and other waste;
- Correct management of urban waste and end-of-life fishing gear;
- Coastal and underwater cleaning

The need for a coordinated action involving policy, awareness raising and conservation action is essential to address this issue

# 04

Disturbance due  
to human  
presence



The presence of humans in seabird nesting sites can lead to the abandonment of nests.



Watson, Hannah, Mark Bolton, and Pat Monaghan. "Out of sight but not out of harm's way: human disturbance reduces reproductive success of a cavity-nesting seabird." *Biological conservation* 174 (2014): 127-133.



# Solutions to reduce human disturbance



- Mark and protect seabird nesting areas;
- Raise awareness and educate the community to avoid disturbing the nests.



**Kindness  
can Kill**

**0-2**  
crias


**Crias de Cegarras**

**Campanha de Sensibilização**  
Açores '23

A Associação Asas de Mar - Instituto de Ornitologia Marinha dos Açores convida todos os interessados a assistir ao lançamento da campanha **"Kindness can Kill"**, que irá decorrer no Museu Francisco de Lacerda, no próximo dia 8 de julho (sáb.) pelas 15 horas.

Ajude a preservar esta espécie!





MUSEU  
FRANCISCO  
LACERDA



DIRECÇÃO  
REGIONAL DO  
AMBIENTE

[asasdomar.com](http://asasdomar.com)

05

By-catch and  
ghostfishing

It is estimated that at least 160000 (and probably more than 320000) seabirds are accidentally captured in fishing gear annually



Anderson, O. R., Small, C. J., Croxall, J. P., Dunn, E. K., Sullivan, B. J., Yates, O., & Black, A. (2011). Global seabird bycatch in longline fisheries. *Endangered Species Research*, 14(2), 91-106.

## Solutions to minimize by-catch of seabirds



- Promote the use of more selective fishing gear;
- Proper disposal and management of end-of-life fishing gear;

[https://www.instagram.com/malha.bvr/?utm\\_source=ig\\_embed&ig\\_rid=3c260401-bb0b-4277-84fe-d8de2ed03210](https://www.instagram.com/malha.bvr/?utm_source=ig_embed&ig_rid=3c260401-bb0b-4277-84fe-d8de2ed03210)

## Solutions to minimize by-catch of seabirds



- Use bird scarers to keep birds away while fishing.

Oliveira, N., Almeida, A., Alonso, H., Constantino, E., Ferreira, A., Gutierrez, I., ... & Andrade, J. (2021). A contribution to reducing bycatch in a high priority area for seabird conservation in Portugal. *Bird Conservation International*, 31(4), 553-572.

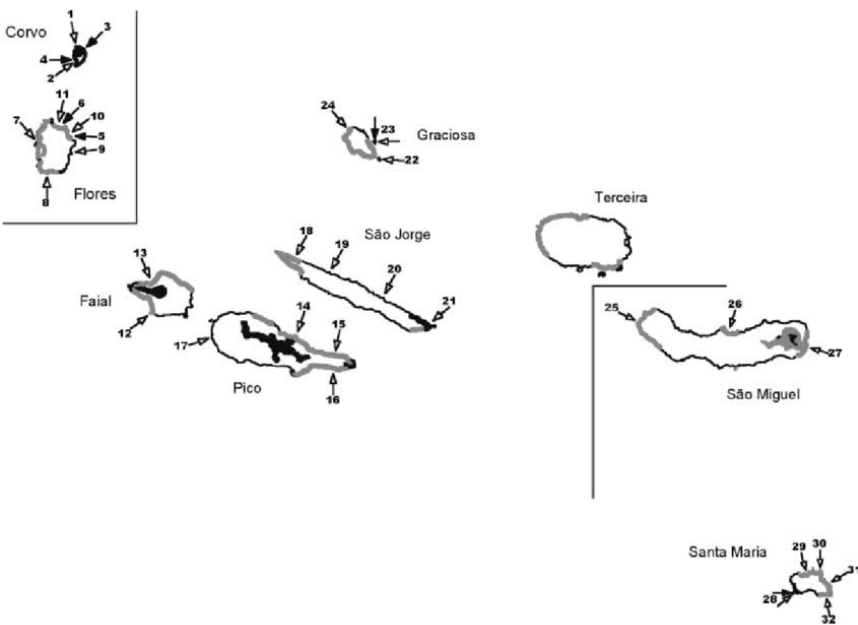
# 06

## Other conservation measures



# Increase to knowledge to improve protection

## Locating colonies and evaluating their size



Tânia Pipa

Fonte: Groz, M. P., Monteiro, L. R., Pereira, J. C., Silva, A. G., & Ramos, J. A. (2005). Conservation of *Puffinus* species in the Azores.

Baseado em: Monteiro, Luís da Rocha, *et al.* "Status and distribution of Fea's petrel, Bulwer's petrel, Manx shearwater, Little shearwater and Band-rumped storm-petrel in the Azores Archipelago." *Waterbirds* (1999): 358-366.

Increase to knowledge to improve protection

## Monitor colonies and reproduction success

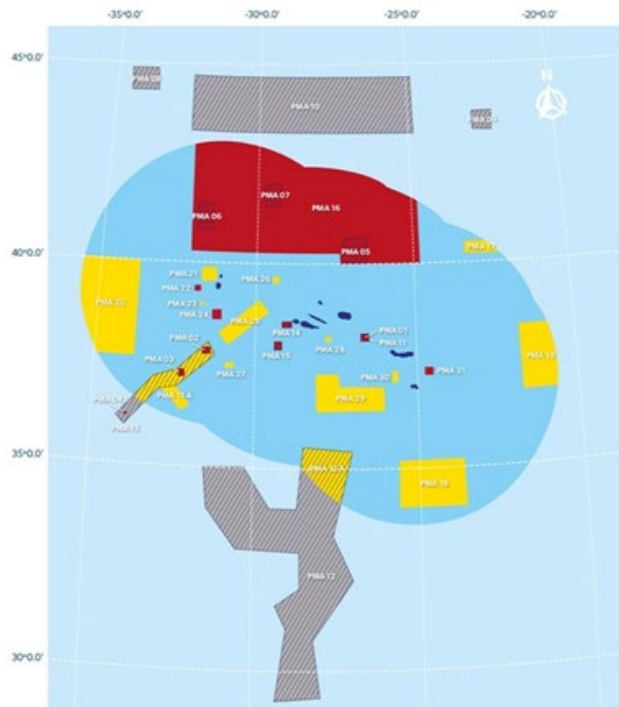




# Educate and train to protect



# Promote sustainable policies and ensure sustainability of policies



- LEGENDA**
- Limite da Subárea dos Açores da ZEE (Zona Económica Exclusiva) Portuguesa
  - Ilhas
  - ▨ Parque Marinho dos Açores Atualmente
- Parque Marinho dos Açores**
- Dentro da ZEE**
- Áreas Marinhas Protegidas Oceânicas Totalmente Protegidas
  - Áreas Marinhas Protegidas Oceânicas Altamente Protegidas
- Fora da ZEE**
- ▨ Áreas Marinhas Protegidas

**santa cruz** município

PROJETO DE ALTERAÇÃO AO REGULAMENTO **ILUMINAÇÃO PÚBLICA** DO MUNICÍPIO DE SANTA CRUZ

07

Ideas for the  
future

## **Just a few ideas for discussion...**

- **No need to reinvent the wheel** - Using and adapting already developed techniques, methodologies and tools can save a lot of time;
- **Learn from mistakes** – We should share failure and problems;
- **Holistic approaches allow for long term solutions:** It takes time to build up a conservation project and it is a continuous learning and trust building process with the local community;
- **Partnerships, cooperation and knowledge-share** are essential to ensure long-term results;
- **Do not forget maintenance!** – Any biodiversity conservation project should be thought in the long term.

Between all of us, we  
can turn the  
Macaronesian Islands  
into Seabird  
Sanctuaries once again



@spea\_birdlife



@spea\_birdlife



@spea\_birdlife

AZUCENA DE LA CRUZ

Coordenadora SPEA Açores

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