spea
Sociedade Portuguesa para o Estudo das Aves

BirdLife INTERNATIONAL PARTNER

Ecological restoration of degraded areas, **Lands of Priolo,** 20 years with LIFE Programme

Rui Botelho | Azucena de la Cruz | Filipe Figueiredo | Tarso Costa | Ana Mendonça | Andreia Amaral | Rui Teixeira | Marcos Evangelho.

FINANCIAMENTO

Life

NATURA 2000

COFINANCIAMENTO

Governo dos Açores

SPEA

The 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 a development that ensures the viability of the natural heritage for the benefit of future generations.

- We have headquarters in Lisbon, São Miguel (Azores) and Funchal (Madeira) and work on projects abroad (Europe, Cape Verde and São Tomé)
- We currently have more than 4,500 members
- We involve about 500 volunteers per year in our projects
- We are BirdLife International in Portugal, the world's largest nature conservation Partnership

It was 2003...

“"is the most endangered passerine bird and the second rarest bird species in all of Europe”

- Endemic bird to the eastern part of S. Miguel Island.
- Very small, localised distribution
- In 1996, the estimated population was 60-200 couples

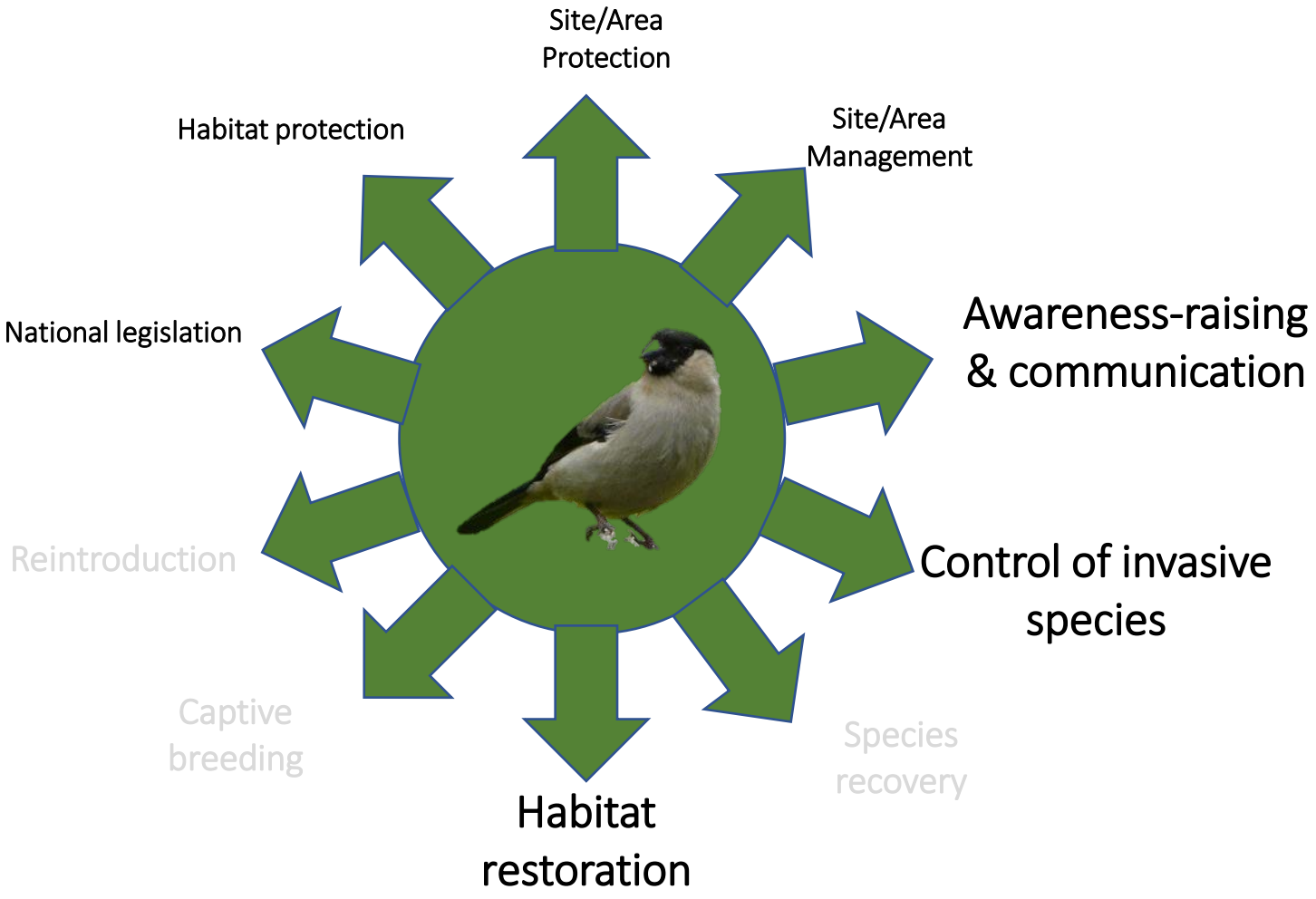
1st ACTION PLAN FOR THE AZORES BULLFINCH

Jaime Ramos, 1995

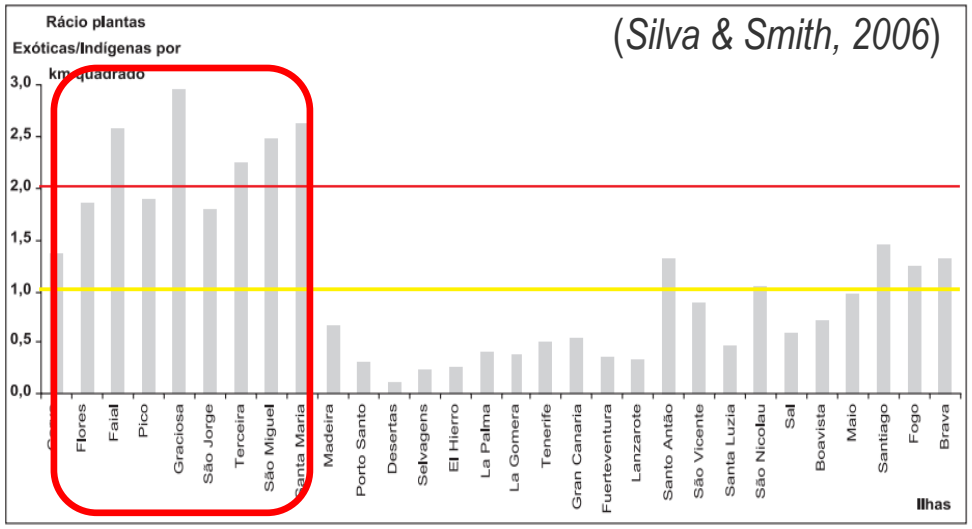
Threats and limiting factors

- Habitat loss - critical
- Food shortage during late winter - critical
- Food shortage in summer - low/medium
- Random demographic and environmental factors - low/medium
- Predation - unknown
- Low breeding success and natural mortality - unknown

Conservation actions for critically endangered species



Critically endangered Birds - A Global audit (BirdLife International 2007)



IMPACT OF IAS ON AZOREAN ECOSSYSTEMS:

- More than 60% of the vascular flora of the Azores considered exotic
- Total replacement of endemic communities by IAS in low/medium altitude habitats (riparian galleries).
- Main invasive specie *Pittosporum undulatum* “presence in 49% of all forest area of the Azores".

Contents lists available at ScienceDirect

Forest Ecology and Management

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

Distribution, habitat and biomass of *Pittosporum undulatum*, the most important woody plant invader in the Azores Archipelago

Patrícia Lourenço[a,*], Vasco Medeiros[b], Artur Gil[a], Luís Silva[a]

ARTICLE INFO

ABSTRACT

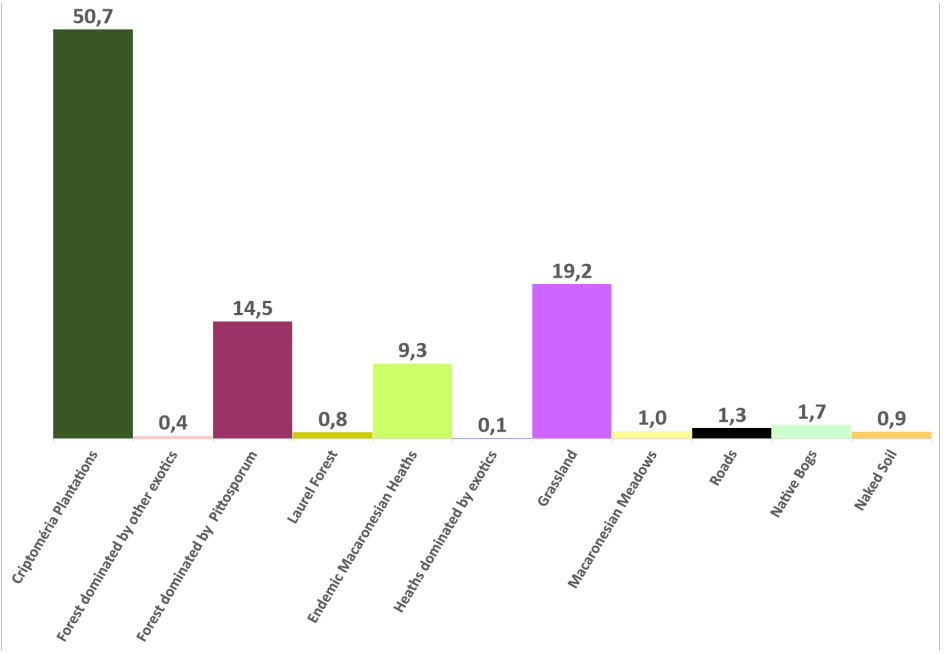
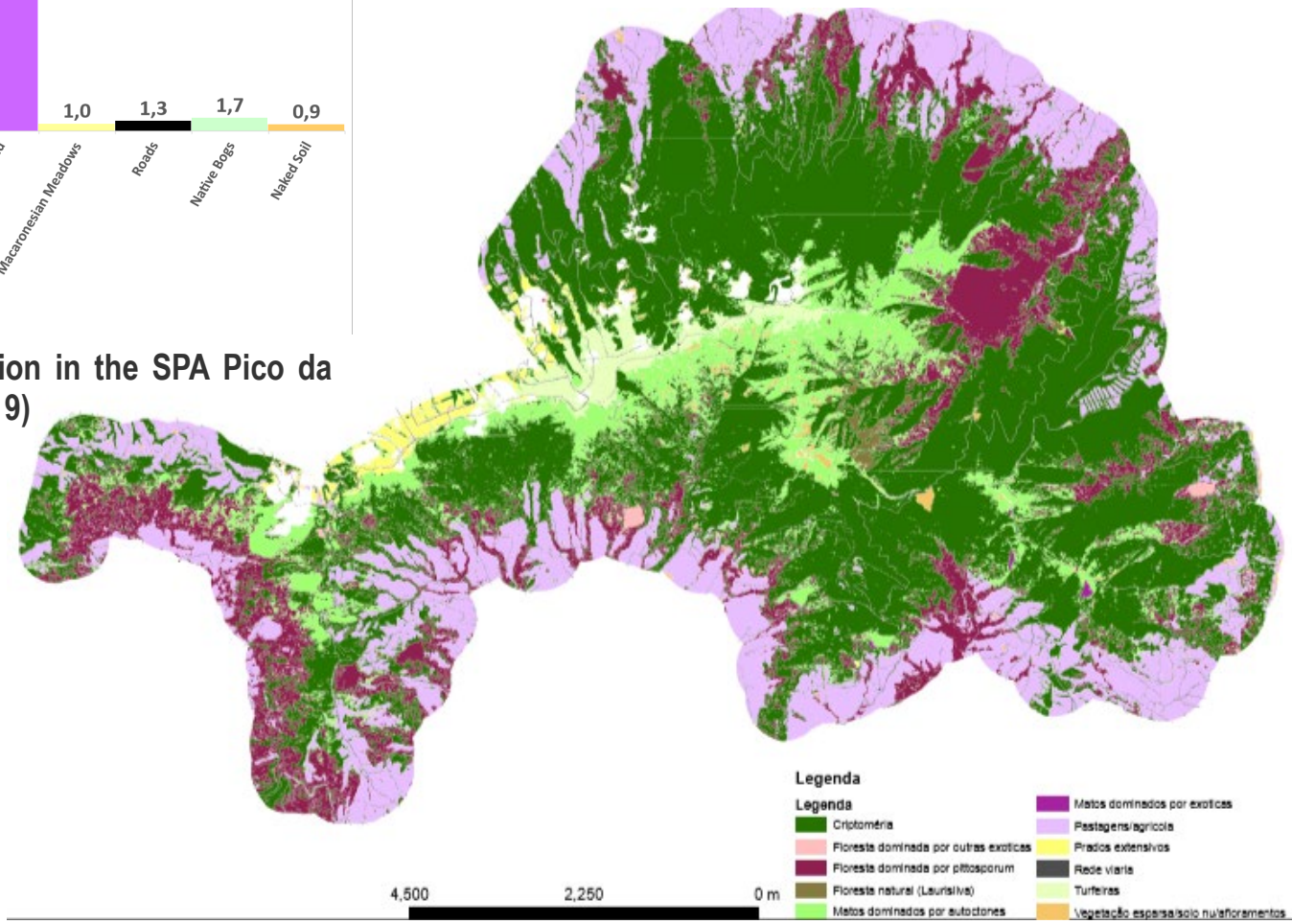
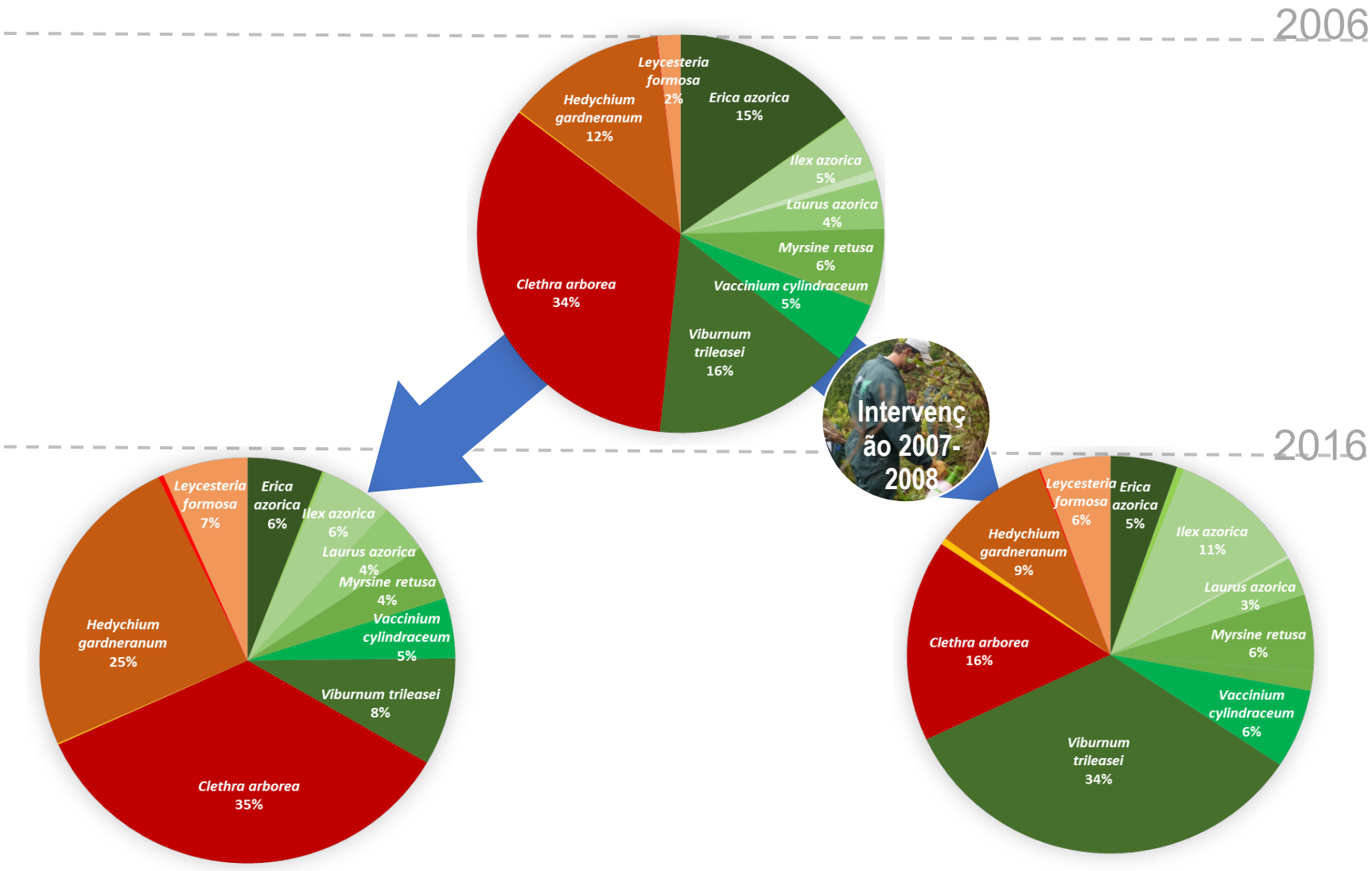


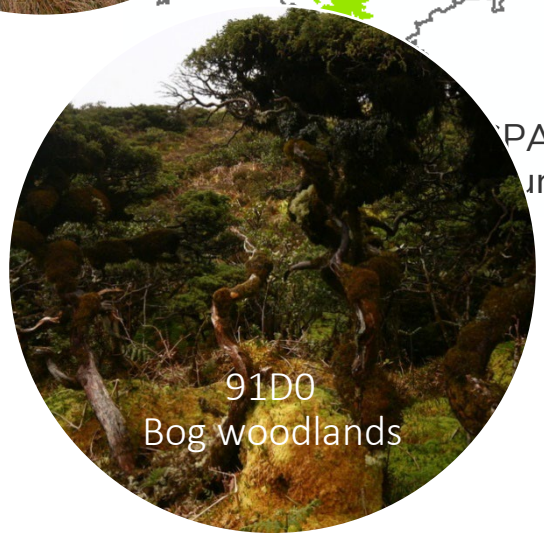
Figure – percentage of land occupation in the SPA Pico da Vara/Ribeira do Guilherme (SPEA , 2019)



Evolution of Humid Laurel Forests in Lands of Priolo



PA Pico da V
ural vegetation



PTZPE0033

PTMIG0024

Biodiversity hotspot

Key Biodiversity Areas (KBAs)

DIFFERENT STAGES IN THE PROCESS OF ENVIRONMENTAL RESTORATION OF ECOSYSTEMS IN THE AZORES

- IAS control – With Acquired Experience
- Management of IAS Biomass - With Acquired Experience
- Soil stabilization – New(2014)
- Reintroduction of native vegetation – With Acquired Experience *
- Riverine ecosystems resilience – New(2017)
- Long term maintenance - unknown

IAS CONTROL – ACQUIRED EXPERIENCE

● Development of selective IAS control methodologies

Control of *Hedychium gardnerianum* :

- Manual techniques not feasible due to high densities
- Adaptation of a methodology developed in New Zealand
- Selective "Cut & Paint" technique

Control of *Pittosporum undulatum*:

- Unsuccessful manual techniques
- Selective trunk injection technique
- Issued Emergency permit for Azores – Roundup Ultra Max (SPEA+DRRF+DRAg)

● Training and capacity building of the operational team

MANAGEMENT OF IAS BIOMASS – ACQUIRED EXPERIENCE

- Large volumes of invasive biomass resulting from logging operations
  (ex. 100.000 Ton. in Gradient area)

- whenever possible use of mulching equipments

- In areas of difficult access the only alternative is burning

SOIL STABILIZATION (RIVERINE ECOSSISTEMS) – NEW (2014)

- Test and adapt best methodologies (natural engineering - *nature based solutions*)

- Vegetative material only from endemic and native species of the Azores flora

- Test and adapt best methodologies

living grid




Modulation with terraces




crib wall





Planting

Live Piling

Hidroseeding

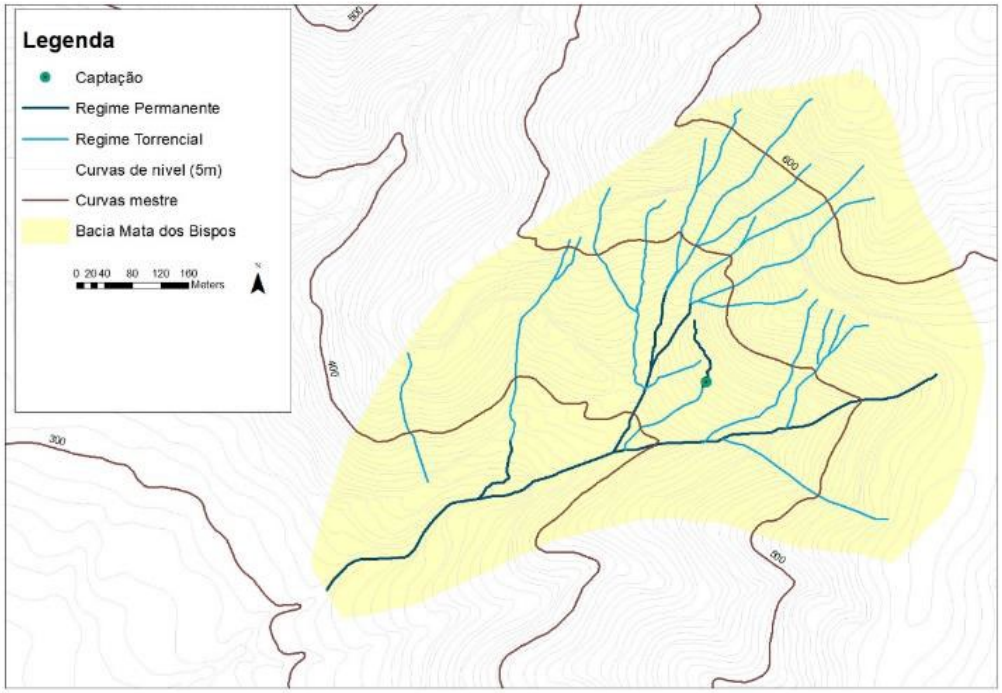
- Vegetative material only from endemic and native species of the Azores flora

Espécie	Nome vulgar	Tipo de propagação		
		Vegetativa	Plantação	Sementeira
Laurus azorica	Louro	X	X	-
Picconia azorica	Pau branco	-	X	-
Morella faia	Faia	X	X	X
Erica azorica	Urze	-	X	X
Juniperus brevifolia	Cedro do mato	-	X	-
Prunus azorica	Ginga do mato	X	X	-
Frangula azorica	Sanguinho	-	X	-
Vaccynium cylindracenum	Uva da serra	X	X	-
Viburnum cylindracenum	Folhado	X	X	-
Calluna vulgaris	Queiró	-	X	X
Hypericum foliosum	Malfurada	X	X	X
Leontondon rigens	Patalugo	-	X	X
Tolpis azorica	Tolpis	-	X	X
Luzula purpureosplendes	Sargasso	-	X	X
Holcus spp.	Holcus	-	-	X
Festuca francoi	Bracel	-	X	X

2012

2022

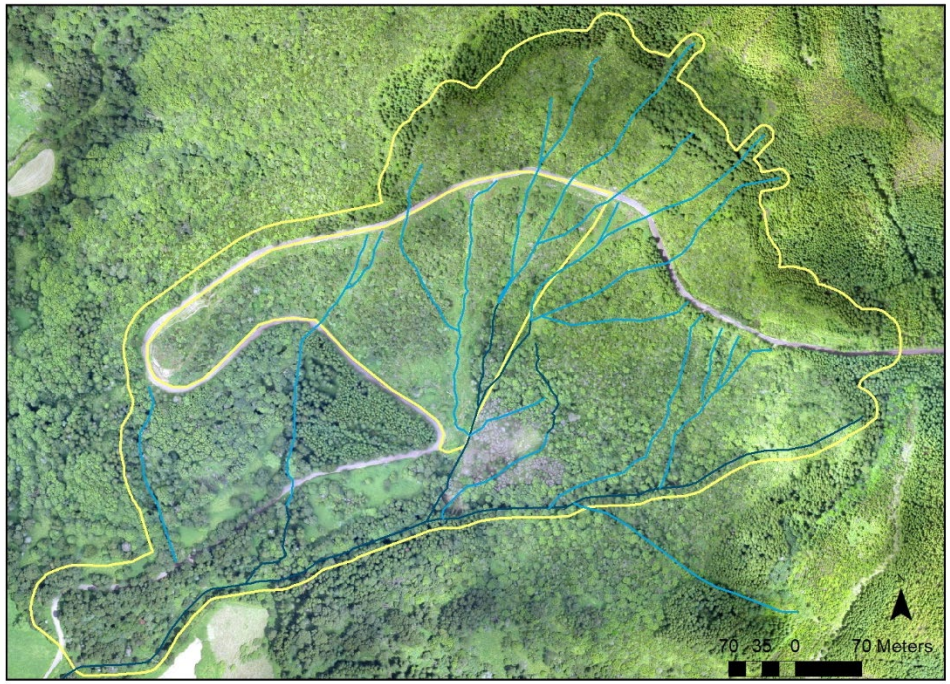
MATA DOS BISPOS HYDROGRAPHIC BASIN INTERVENTION AREA



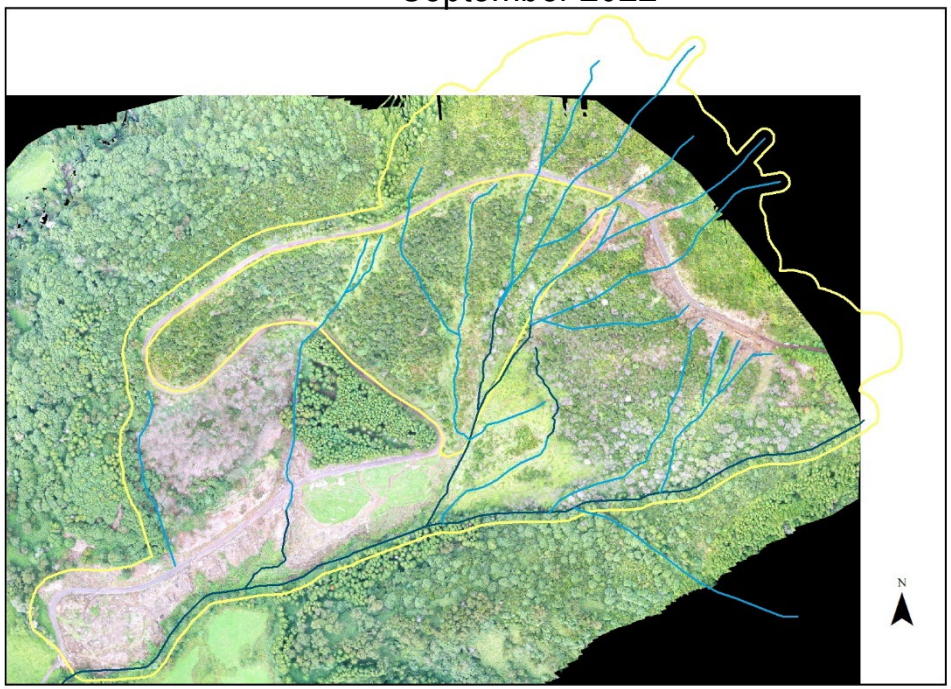
- The aim is to restore the water dynamics at micro-basin level
- Ecological Restoration of 41ha of natural habitats
- 5.5km of water courses
- 1.5 km of which are of permanent flow

IAS Control & Biomass managment

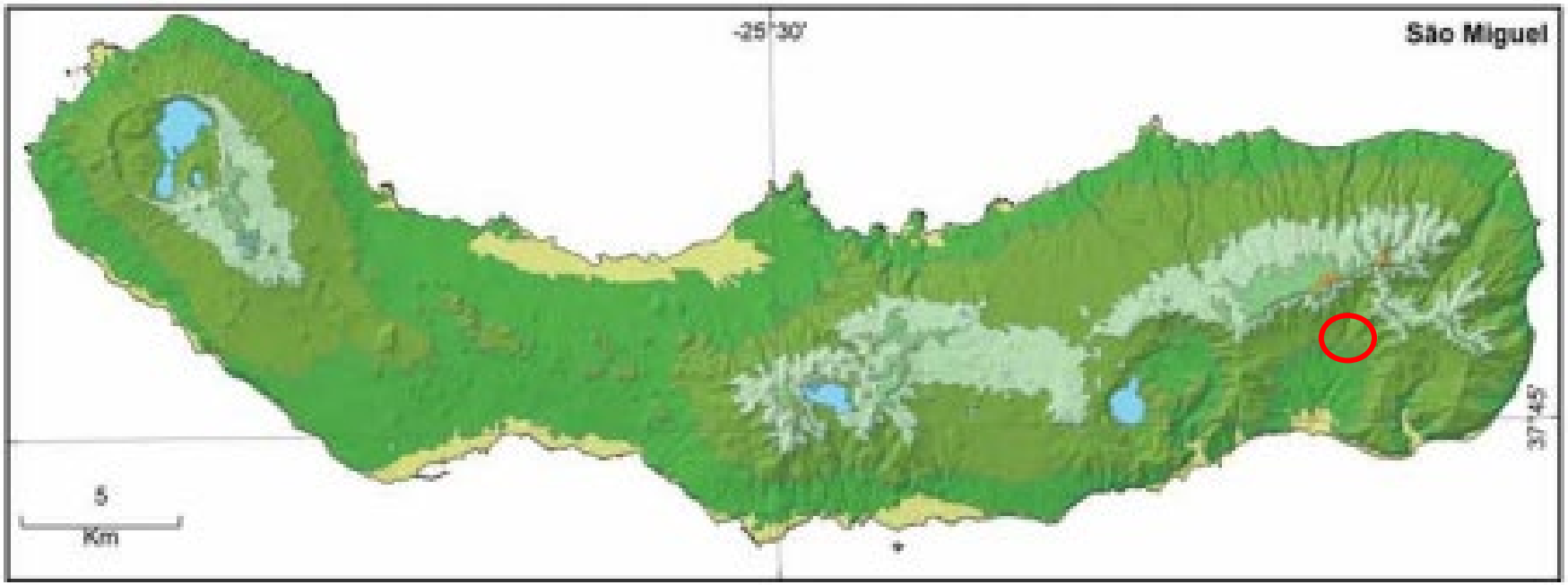
2018



September 2022



REINTRODUCTION OF NATIVE VEGETATION



Phytocoenologia Vol. 46 (2016), Issue 2, 107–123
Stuttgart, September 2016

Research Paper

Natural zonal vegetation of the Azores Islands: characterization and potential distribution

Rui B. Elias*, Artur Gil, Luís Silva, José M. Fernández-Palacios, Eduardo B. Azevedo & Francisco Reis

- *Calluna* Alpine Scrubland
- *Calluna-Erica* Subalpine Scrubland
- *Calluna-Juniperus* Altimontane Scrubland
- *Juniperus* Montane Woodland
- *Juniperus-Ilex* Montane Forest
- *Laurus* Submontane Forest
- *Picconia-Morella* Lowland Forest
- *Erica-Morella* Coastal Woodland

ESTABLISHMENT OF ENDEMIC AND NATIVE STANDS

- The last 3 years 90.000 plants instaled in the terrain

EXAMPLE - ECOLOGICAL RESTORATION ACTION (GRADIENT SITE)

2023

2015

2016

- Clear cutting on 9 hectares
- Estimated removal of 10,000 tonnes of invasive biomass

2018

- 155,000 native plants planted

2021

terras do priolo

2013-2019

Peatbog restoration: Promoting the development of plant communities and water dynamics







laurissilva sustentável

Life IP AZORES NATURA

75 hectares

+ 5 hectares

2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027

Cattle Removal

IAS Control

Removal of Japanese Red Ceder Plantations

Road Closures

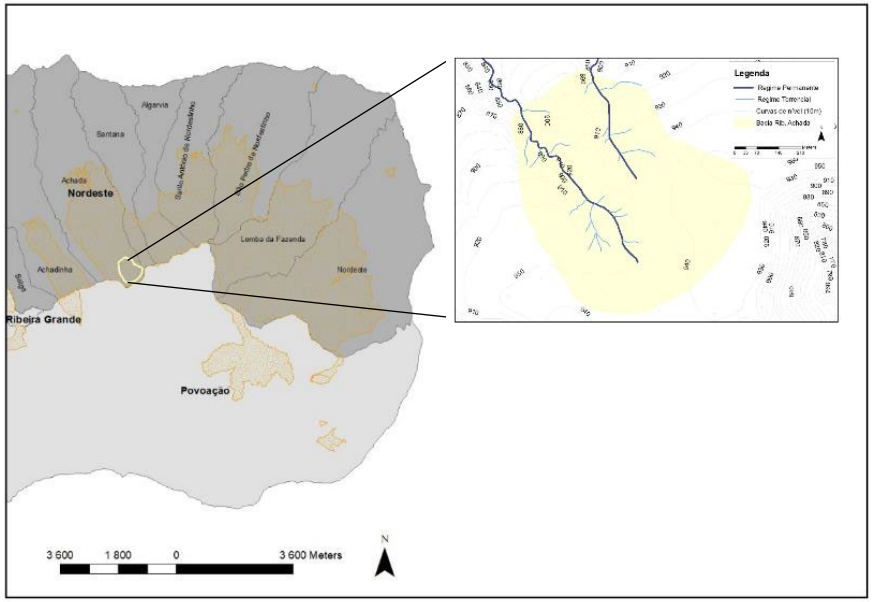
Promoting waterlogging

Planting & inoculation of sphagnum mosses

Riverine restoration

Ecological Restoration of HB in Peatbogs - Graminhais

Removal of japanese red cedars



Area to be interveeened 39 ha - scheduled to start in 2024

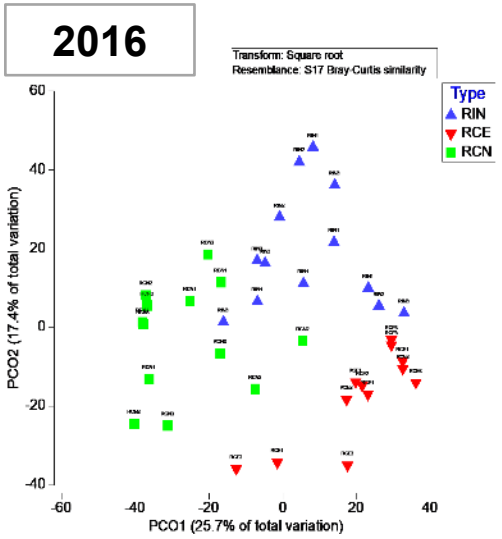
Japanese Red Cedar

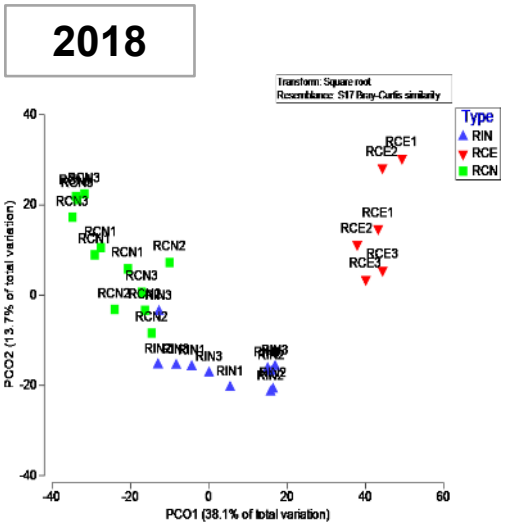
Native riparian vegetation

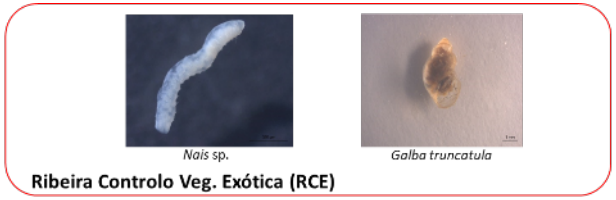
MONITORING - biological community structure

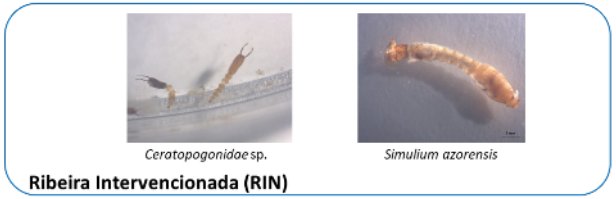
Ribeira do Guilherme

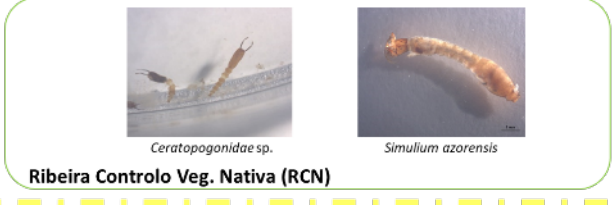
- Ribeira intervencionada (RIN)
- Ribeira Controlo – Veg. Exótica (RCE)
- Ribeira Controlo – Veg. nativa (RCN)











Preliminary results

The macroinvertebrate community in the intervened stream approached the community of the native Veg. control stream by the year 2018.

priolo life
2003 - 2008
208 ha + 14ha

laurissilva sustentável
2009 - 2013
35 ha + 75ha + 13,7ha

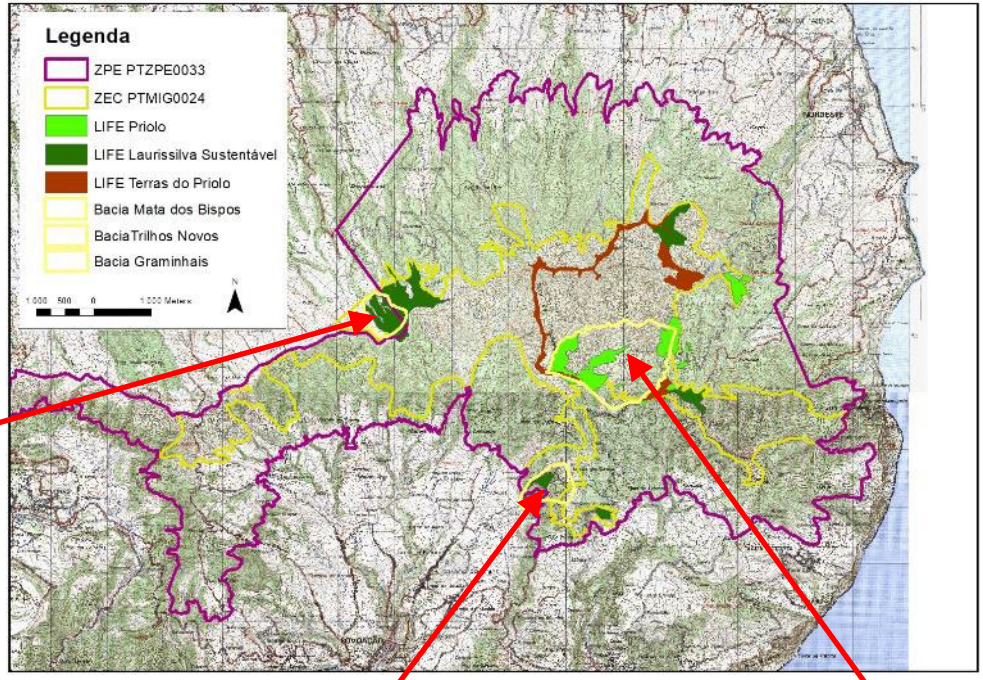
terras do priolo
2013 - 2019
23 ha + 75ha

Life IP AZORES NATURA
2019 - 2027

Life

NATURA 2000

Total of 443 Ha Intervened by 2019



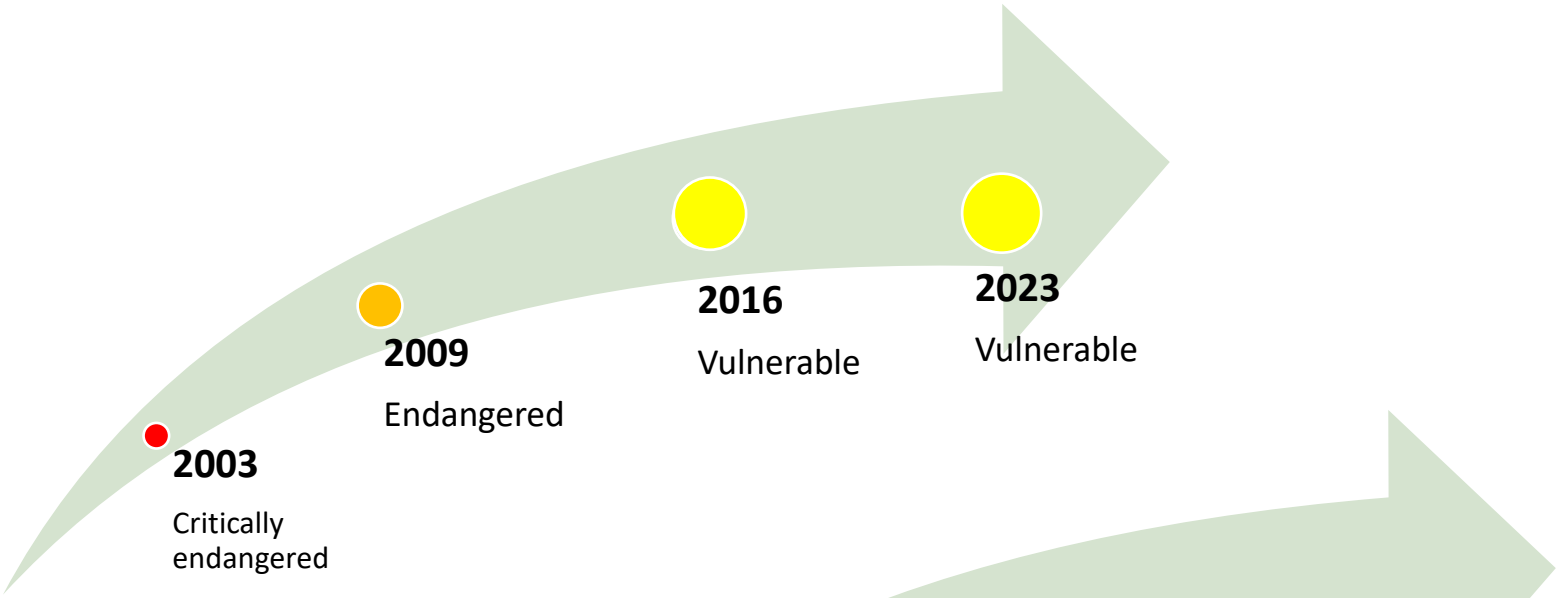
Graminhais Micro-Basin
Peatbogs
38 hectares

Mata dos Bispos HB
Mesic Laurel Forest
46 hectares

Trilhos Novos HB
Humid Laurel Forest
98,9 hectares

2003 – 2023

20 years working to conserve the PRIOLO and its habitat



A SUCCESS STORY IN BIODIVERSITY CONSERVATION

priolo life
2003-2008

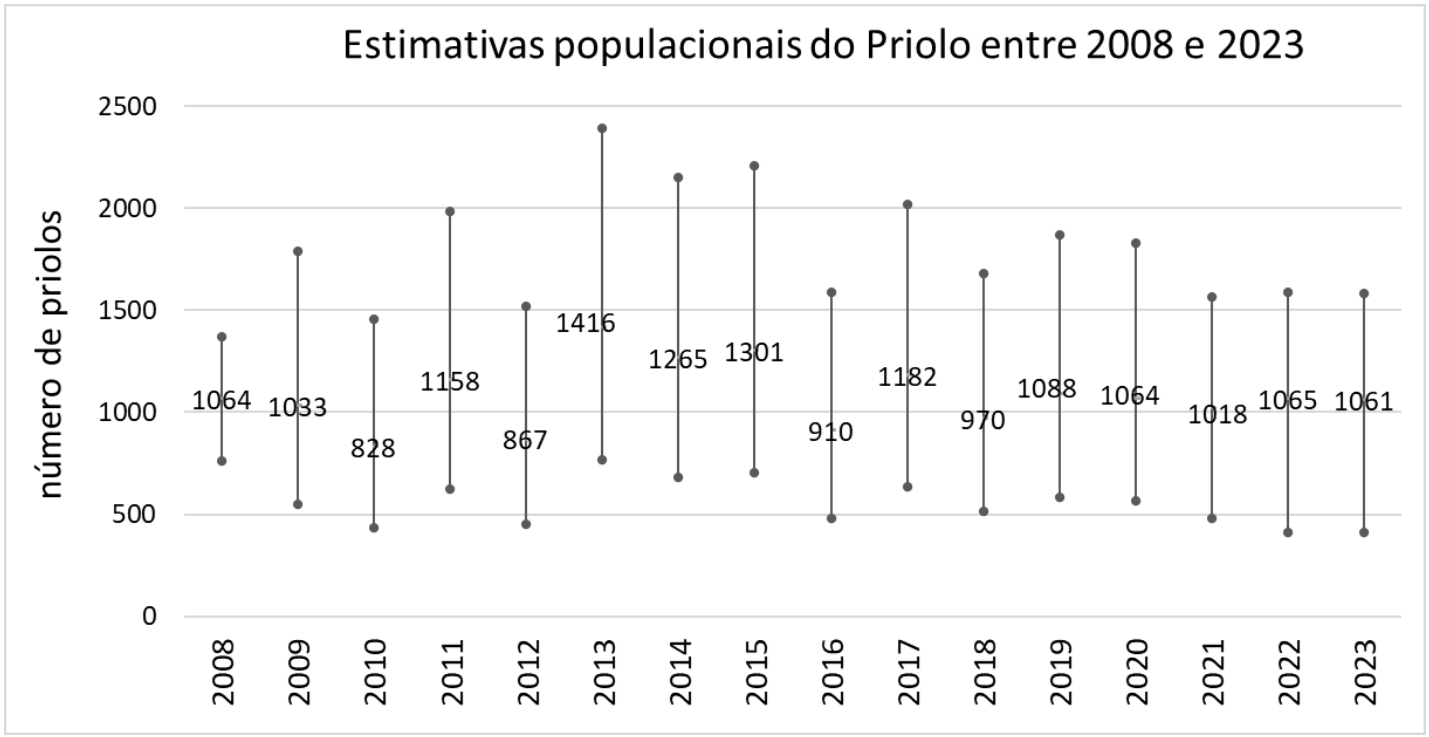
laurissilva sustentável
2009-2013

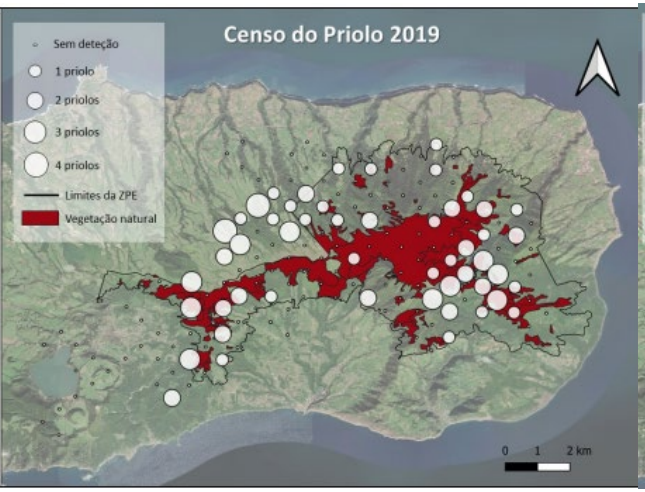
terras do priolo
2013-2019

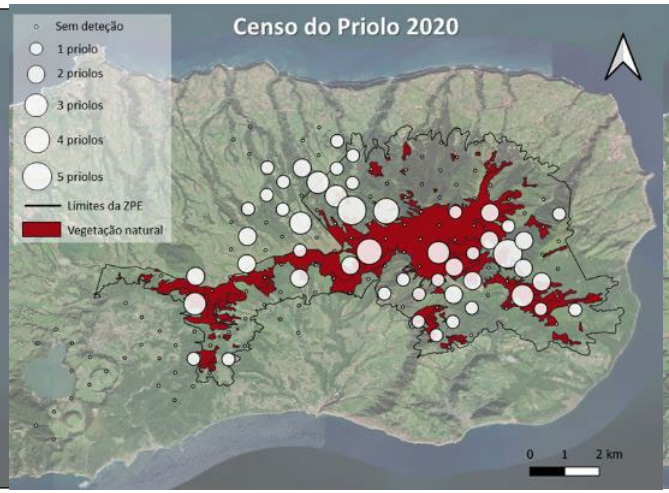
Life IP AZORES NATURA
2019-2027

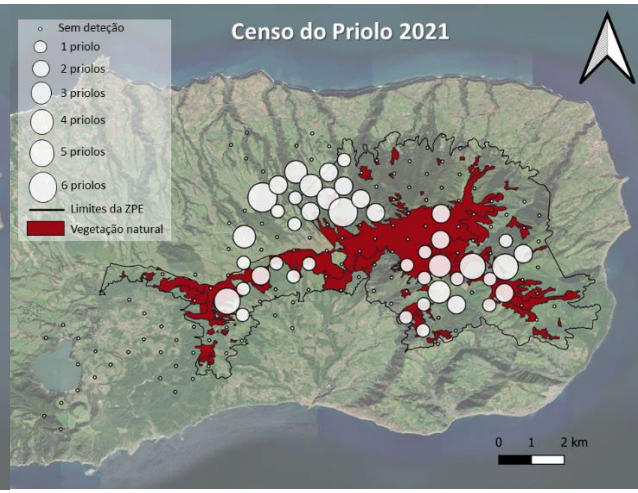
Life

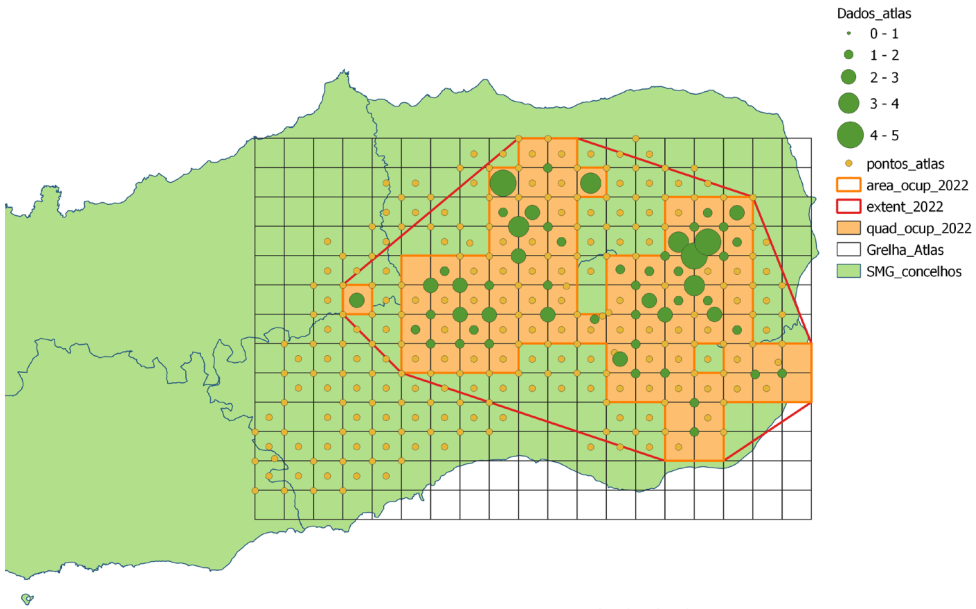
NATURA 2000


Estimativas populacionais do Priolo entre 2008 e 2023
número de priolos
2500
2000
1500
1000
500
0
1064
1033
828
1158
867
1416
1265
1301
910
1182
970
1088
1064
1018
1065
1061
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023



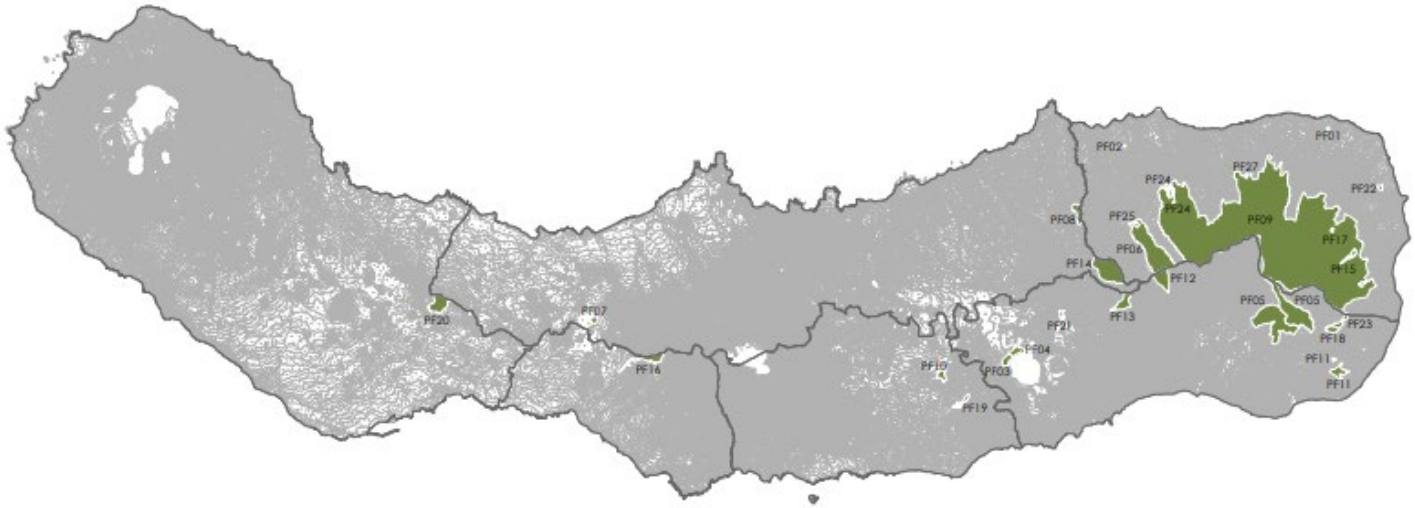






IV Atlas do Priolo 2022

±50% OF THE JAPANESE RED CEDAR PLANTATIONS IN THE SPA ARE UNDER PUBLIC MANAGEMENT



Legenda

Perímetro Florestal e Matas Regionais

PF01_Britadeira do Serviço Florestal do Nordeste
PF02_Casa de Guarda da Achadinha
PF03_Fajã das Rabaças
PF04_Mata da Grená
PF05_Mata Regional dos Bispos\ Labaçal
PF06_Núcleo Florestal da Achadinha
PF07_Núcleo Florestal da Chã do Rego de Água
PF08_Núcleo Florestal da Lomba de São Pedro
PF09_Núcleo Florestal da Serra da Tronqueira
PF10_Núcleo Florestal das Três Lagoas
PF11_Núcleo Florestal de Agua Retorta
PF12_Núcleo Florestal do Espigão de Dentro
PF13_Núcleo Florestal do Salto do Cavalo
PF14_Pico Maria da Costa
PF15_Reserva Florestal de Recreio da Cancela do Cinzeiro
PF16_Reserva Florestal de Recreio da Chã da Macela
PF17_Reserva Florestal de Recreio da Fajã do Rodrigo
PF18_Reserva Florestal de Recreio de Água Retorta
PF19_Reserva Florestal de Recreio do Cerrado dos Bezerros
PF20_Reserva Florestal de Recreio do Pinhal da Paz
PF21_Reserva Florestal de Recreio do Viveiro das Furnas
PF22_Reserva Florestal de Recreio do Viveiro do Nordeste
PF23_Selada (Água Retorta)
PF24_Viveiro Florestal da Achada
PF25_Viveiro Florestal da Achadinha
PF26_Viveiro Florestal da Cancela do Cinzeiro
PF27_Viveiro Florestal de Santo António
PF28_Viveiro Florestal do Cerrado dos Bezerros

PERÍMETROS FLORESTAIS E MATAS REGIONAIS

Cartografia adaptada de acordo com o Sistema de Informação Geográfica da Secretaria Regional da Agricultura e Ambiente

N

SÃO MIGUEL

2015

SECRETARIA REGIONAL DA AGRICULTURA E AMBIENTE | DIREÇÃO REGIONAL DO AMBIENTE | DIVISÃO DE ORDENAMENTO DO TERRITÓRIO

Esc.: 1:250.000

FSC

FLORESTAS PARA PARA SEMPRE ™

REGIÃO AUTÓNOMA DOS AÇORES
SECRETARIA REGIONAL DA AGRICULTURA E FLORESTAS
Direção Regional dos Recursos Florestais

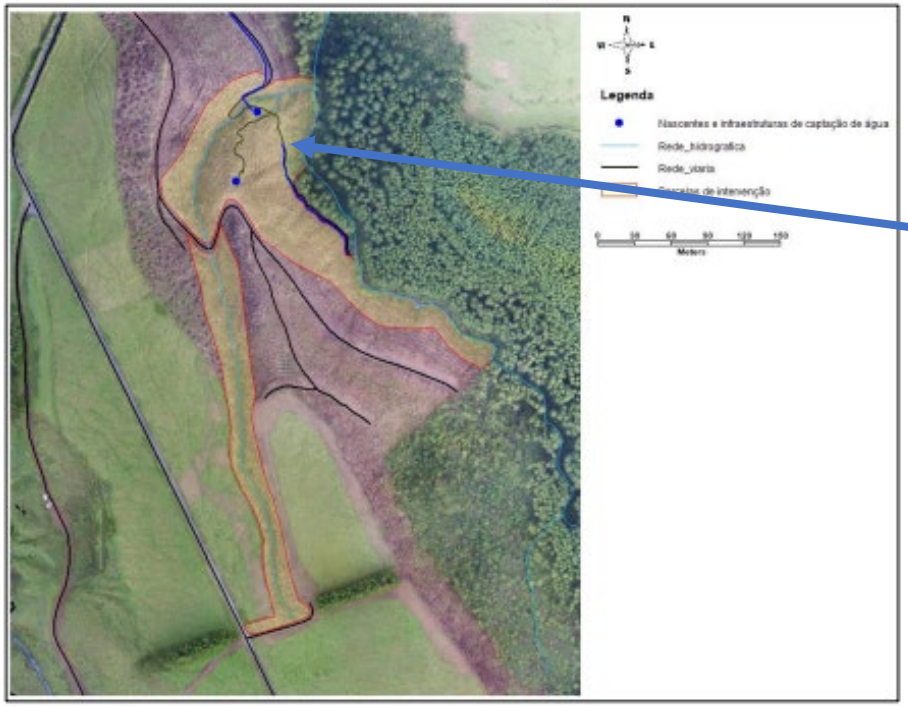
Plano de Gestão Florestal

Perímetro Florestal e Matas Regionais da Ilha de São Miguel

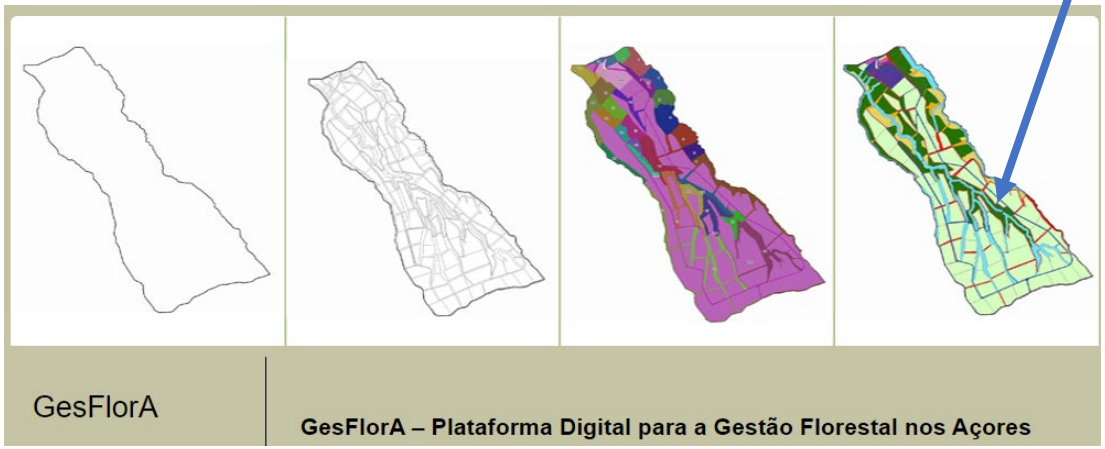
Direção Regional dos Recursos Florestais
Janeiro de 2017

http://drrf.azores.gov.pt/areas/cert/Documents/PGF_do_Perimetro_Florestal_e_Matas_Regionais_da_Ilha_de_Sao_Miguel_2017.pdf

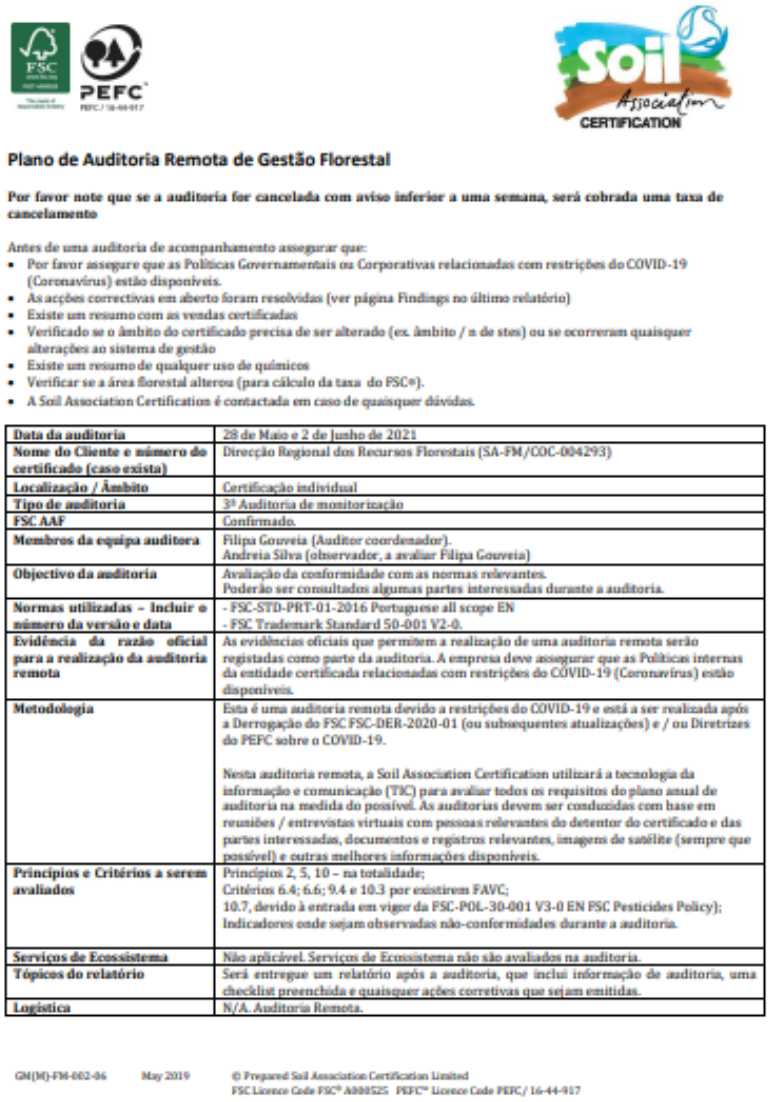
Example of an Operational unit



Potential creation of ecological corridors along water lines



SPEA and the other agents (loggers and Perimeter Management Entity-DRRF) working in the area covered by this Forest Management Plan (PGF) are subject to **ANNUAL audits**.



Plano de Auditoria Remota de Gestão Florestal

Por favor note que se a auditoria for cancelada com aviso inferior a uma semana, será cobrada uma taxa de cancelamento

Antes de uma auditoria de acompanhamento assegurar que:

- Por favor assegure que as Políticas Governamentais ou Corporativas relacionadas com restrições do COVID-19 (Coronavírus) estão disponíveis.
- As acções correctivas em aberto foram resolvidas (ver página Findings no último relatório)
- Existe um resumo com as vendas certificadas
- Verificado se o âmbito do certificado precisa de ser alterado (ex. âmbito / n de stes) ou se ocorreram quaisquer alterações ao sistema de gestão
- Existe um resumo de qualquer uso de químicos
- Verificar se a área florestal alterou (para cálculo da taxa do PSC®).
- A Soil Association Certification é contactada em caso de quaisquer dúvidas.

Data da auditoria	28 de Maio e 2 de Junho de 2021
Nome do Cliente e número do certificado (caso exista)	Direcção Regional dos Recursos Florestais (SA-FM/COC-004293)
Localização / Âmbito	Certificação individual
Tipo de auditoria	3ª Auditoria de monitorização
FSC AAF	Confirmado.
Membros da equipa auditora	Filipa Gouveia (Auditor coordenador). Andreia Silva (observador, a avaliar Filipa Gouveia)
Objectivo da auditoria	Avaliação da conformidade com as normas relevantes. Poderão ser consultados algumas partes interessadas durante a auditoria.
Normas utilizadas – Incluir o número da versão e data	- FSC-STD-PRT-01-2016 Portuguese all scope EN - FSC Trademark Standard 50-001 V2-0.
Evidência da razão oficial para a realização da auditoria remota	As evidências oficiais que permitem a realização de uma auditoria remota serão registadas como parte da auditoria. A empresa deve assegurar que as Políticas internas da entidade certificada relacionadas com restrições do COVID-19 (Coronavírus) estão disponíveis.
Metodologia	Esta é uma auditoria remota devido a restrições do COVID-19 e está a ser realizada após a Derrogação do FSC FSC-DER-2020-01 (ou subsequentes atualizações) e / ou Diretrizes do PEFC sobre o COVID-19. Nesta auditoria remota, a Soil Association Certification utilizará a tecnologia da informação e comunicação (TIC) para avaliar todos os requisitos do plano anual de auditoria na medida do possível. As auditorias devem ser conduzidas com base em reuniões / entrevistas virtuais com pessoas relevantes do detentor do certificado e das partes interessadas, documentos e registros relevantes, imagens de satélite (sempre que possível) e outras melhores informações disponíveis.
Princípios e Critérios a serem avaliados	Princípios 2, 5, 10 – na totalidade; Critérios 6.4; 6.6; 9.4 e 10.3 por existirem FAVC; 10.7, devido à entrada em vigor da FSC-POL-30-001 V3-0 EN FSC Pesticides Policy); Indicadores onde sejam observadas não-conformidades durante a auditoria.
Serviços de Ecossistema	Não aplicável. Serviços de Ecossistema não são avaliados na auditoria.
Tópicos do relatório	Será entregue um relatório após a auditoria, que inclui informação de auditoria, uma checklist preenchida e quaisquer ações corretivas que sejam emitidas.
Logística	N/A. Auditoria Remota.

Despite all the successes achieved, the fact is that still no mechanisms have been developed that allow active management in the long term, jeopardizing all the results achived.

@spea.Birdlife

@spea.Birdlife

@spea.Birdlife

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Coordenador SPEA Açores
rui.botelho@spea.pt

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BirdLife INTERNATIONAL PARTNER

www.spea.pt