2nd Natura 2000 Macaronesian Seminar
Angra do Heroísmo, Azores, Portugal

Natura 2000 Biogeographical Process

PILOT ACTION PLAN FOR LAUREL FORESTS (9360)

Concha Olmeda
ATECMA

Picture: Sandra Mesquita

HABITAT ACTION PLAN – LAURISILVA 9360

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BACKGROUND : 1ST Macaronesian Seminar – Funchal, Madeira (Sept. 2018)

- Habitat Action Plan: to maintain or restore to Favourable Conservation Status of a habitat type of Community interest on biogeographical region scale
- First discussion on methodology, contents and process for habitat action plans.

➢ Mediterranean seminars

November 2022 :

- Elaboration of a Pilot Action Plan – Laurel forests (9360)
- Creation of a working group for its elaboration

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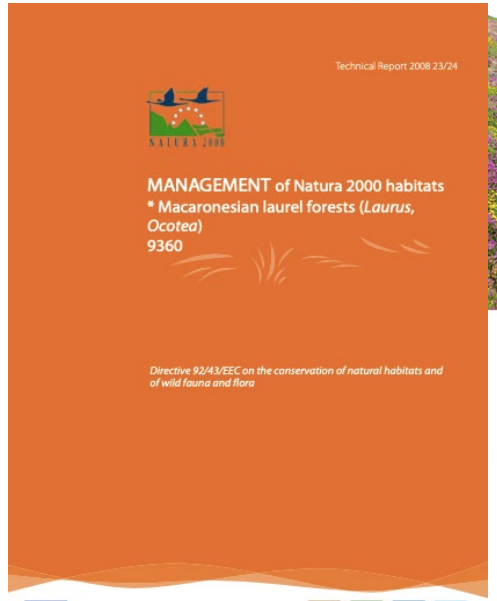
➢ PREVIOUS EXPERIENCES

- **EU Action Plans** for two habitat types (EC, 2018-2020)
- **Management models** for habitats (EC, 2008)



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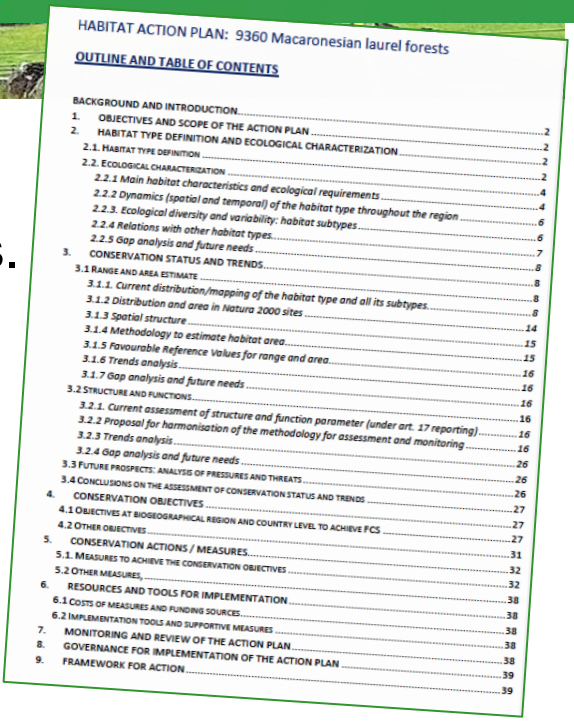
MAIN CONTENTS

- Characterization of the habitat type, distribution and ecological requirements.
- Conservation status and trends
- Analysis of pressures and threats
- Conservation objectives to maintain or restore the habitat type in FCS
- Conservation measures to achieve the proposed objectives.
- Definition of tools for implementation, support measures and financing.



HABITAT ACTION PLAN: 9360 Macaronesian laurel forests

OUTLINE AND TABLE OF CONTENTS

➢ Identification of information gaps and needs to further develop and promote implementation

→ Preparation of a project proposal : search funding

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Contents	Keys issues and steps
Habitat-characteri-sation	• Identify **key characteristics** of the habitat type. • **Compile/share information** about the key habitat characteristics in each island /location • Elaborate a **common interpretation** of the habitat type (common characteristics) • Analyse an describe the **diversity, ecological variability and dynamics** of the habitat type throughout the region. • Define **relations with other habitat types** and the relations/importance for other species (fauna).

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HABITAT CHARACTERISATION

Info by archipelago

Characteristics	Elements (and their variation across the range: archipelagos/islands)
Abiotic:	
Physical	Climate: precipitation, temperature, wind…
	Physiography: altitude, slope, exposure….
	Soil: type, depth …
Chemical	Soil: organic matter, C content…
Biotic	
Structural	Height of canopy (20-50 m), Canopy species richness, (up to 20-30 in a few ha), Number of strata (< 4), …
	Stems density (no. of stems/ha), Tree density (or % of the trees) per DBH class
	Basal area (up to 65m^2/ha in mature stands) …
	Total biomass t/ha (up to 750 t/ha) , Above ground biomass (t/ha), Below ground biomass (t/ha)….
	Deadwood (t/ha), Litter (t/ha) …
Functional	Main sexual expressions present: extended real (e.g. Ilex, Laurus, Morella), or functional (e.g. Apollonias, Persea, Ocotea) dioecy
	Main reproduction mechanisms (seed-, seedling- or sucker-banks) with examples
	Seedlings per ha; Seedlings survival rate (%)
	Dispersal types (%)
Composition	Canopy tree species richness (up to 20-30 in few ha)
	Characteristic, typical species - flora and fauna (trees, understory, lichens, ferns, arthropods, birds, bats…)

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CONSERVATION STATUS ASSESSMENT

- Area
- Structure & Function
- Future prospects (pressures and threats)

➢ Different approaches and methods used

→ Need for harmonization

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AREA

Potential and actual distribution per island, archipelago and biogeographical region. Sources: Azores (Elias et al., 2016; Triantis et al 2010); Madeira (Capelo, 2004; Mesquita et al., 2007); Canaries (del Arco et al., 2010).

	Potential distribution (ha)	Current distribution (ha)	% remaining
Azores	173 300	5 727	3.30
Madeira	62 595	15 517	24.79
Canaries	87 100	10 170	11.68
Macaronesia	322 995	31 414	9.73

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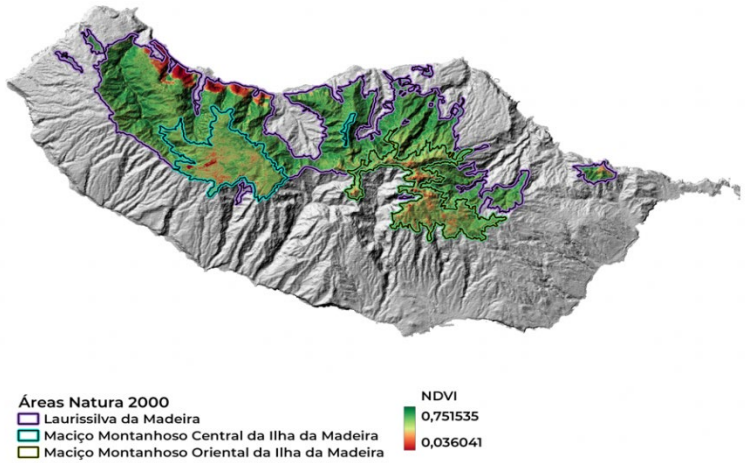
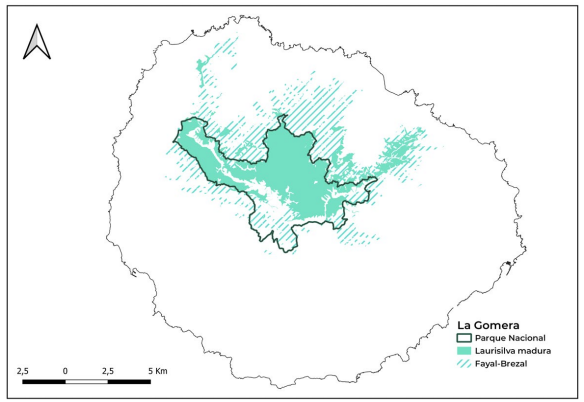
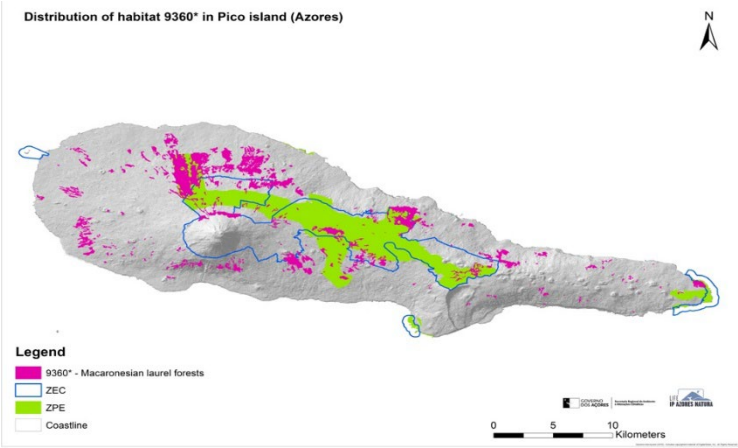
AREA OCCUPIED

- Different methodologies, scales…







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AREA OCCUPIED

- Proposal for harmonisation:

ESA Sentinel satellites imagery, which is costless, making a flight each 8-10 days and providing for 10 x 10 m square pixels four spectral bands (visible plus infrared) and for 20 x 20 m pixels up to 10-14 spectral bands. From these spectral bands, vegetation development indexes such as **NDVI** or EVI, may be calculated.

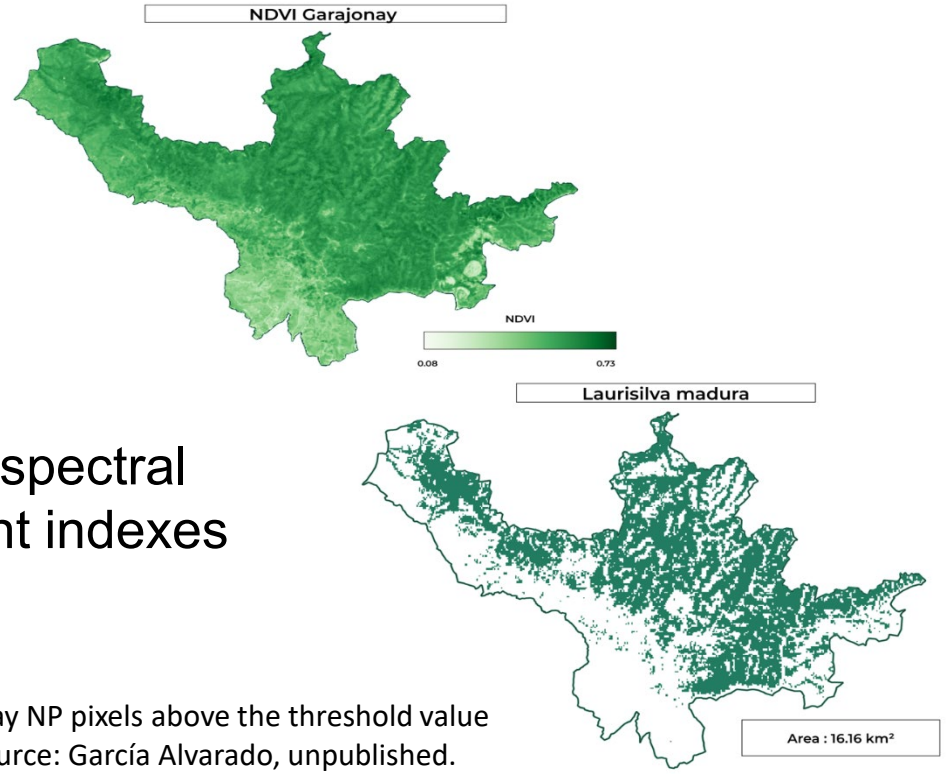

Figure: Garajonay NP pixels above the threshold value for laurisilva. Source: García Alvarado, unpublished.

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STRUCTURE & FUNCTION ASSESSMENT

Proposal for harmonisation:

- Variables, metrics, measurement methods,
- Reference values & thresholds
- Monitoring methods and protocols

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NCTION ASSESSMENT - PROPOSAL FOR HARMONISATION

Structural	1. Canopy height (m) 2. Community Basal Area (m2/ha) 3. Density of large trees (> 40 cm DBH) (ind./ha) 4. Biomass (t/ha) (optional) 5. Leaf Area Index (LAI) 6. Litter (t/ha) 7. Canopy richness : number of native tree species in the plots (1/4 ha)
Compositional	8. Canopy species composition 9. Composition of the avian community 10. Composition of soil invertebrate (arthropods and molluscs) community
Functional	11. Regeneration composition 12. Amount o deadwood

use of forest inventories

PRESSURES AND THREATS

- Collecting information from all the distribution areas
- Need to improve knowledge and methodologies: location, intensity, impacts …
- Harmonisation of P&T assessment methods is needed

Climate change

- The reduction in rainfall ranges and the increase in thermal ranges is already a fact, proven by meteorological data from recent decades. Therefore, it can be considered a current pressure.

➢ Analysis of change in climatic space for laurisilva in Tenerife:
Angel Vera, Canarian Government

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CONSERVATION OBJECTIVES

- Restore the area (favourable reference value: 25% of the original/potential area)
- Improve condition in degraded areas
- Improve protection - area still not included in Natura 2000

KNOWLEDGE OBJECTIVES

- Improve knowledge and methodologies for the habitat monitoring

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- Recovery of 25% of the original Laurisilva area
- Increase protection

➢ *Presentation by José Maria Fernández Palacios, Univesidad de la Laguna, Tenerife*

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Next steps:

- Complete the action plan drafting until next year.
- Prepare the continuation: further work needed to address:
  - information gaps, needs for habitat monitoring (area & condition)
  - assessment of pressures and threats – need to improve methodology

➢ Preparing project proposal(s) & search for funding

Title

Roadmap:

Action plans for other habitats and species with the same methodological framework


NATURA 2000
European Commission
THANK YOU!
Picture: Sandra Mesquita