



## 2<sup>nd</sup> Natura 2000 Macaronesian Seminar Angra do Heroísmo, Azores, Portugal



### Natura 2000 Biogeographical Process

# PILOT ACTION PLAN FOR LAUREL FORESTS (9360)

Concha Olmeda

ATECMA





## HABITAT ACTION PLAN – LAURISILVA 9360

### Natura 2000 Biogeographical Process

**BACKGROUND** : 1<sup>ST</sup> 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



# HABITAT ACTION PLAN – LAURISILVA 9360

## Natura 2000 Biogeographical Process

### ➤ PREVIOUS EXPERIENCES

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

#### EU HABITAT ACTION PLAN

Action plan to maintain and restore to favourable conservation status the habitat type 4030 European dry heaths



European Commission, 2020

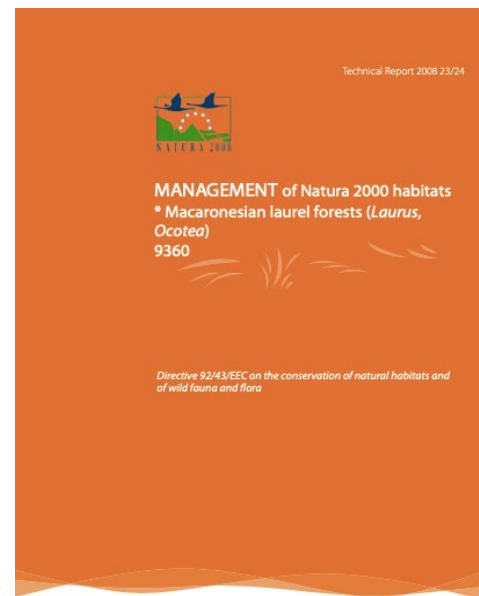
#### EU HABITAT ACTION PLAN

Action plan to maintain and restore to favourable conservation status the habitat type 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (\*important orchid sites)



European Commission  
October 2019

SERVICE CONTRACT FOR SUPPORTING THE DELIVERY OF THE ACTION PLAN FOR NATURE, PEOPLE AND THE ECONOMY IN RELATION TO ACTIONS 4, 5 AND 7 (ENV/D.3/5/19/2017/0023)







# HABITAT ACTION PLAN – LAURISILVA 9360

## Natura 2000 Biogeographical Process

### 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.

- Identification of information gaps and needs to further develop and promote implementation
  - Preparation of a project proposal : search funding

HABITAT ACTION PLAN: 9360 Macaronesian laurel forests  
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# HABITAT ACTION PLAN – LAURISILVA 9360

## Natura 2000 Biogeographical Process

Contents	Keys issues and steps
<b>Habitat-characterisation</b>	<ul style="list-style-type: none"><li>• Identify <b>key characteristics</b> of the habitat type.</li><li>• <b>Compile/share information</b> about the key habitat characteristics in each island /location</li><li>• Elaborate a <b>common interpretation</b> of the habitat type (common characteristics)</li><li>• Analyse and describe the <b>diversity, ecological variability and dynamics</b> of the habitat type throughout the region.</li><li>• Define <b>relations with other habitat types</b> and the relations/importance for other species (fauna).</li></ul>





# HABITAT ACTION PLAN – LAURISILVA 9360

## Natura 2000 Biogeographical Process

### HABITAT CHARACTERISATION

### Info by archipelago

Characteristics	Elements (and their variation across the range: archipelagos/islands)
<b>Abiotic:</b>	
<b>Physical</b>	Climate: precipitation, temperature, wind... Physiography: altitude, slope, exposure.... Soil: type, depth ...
<b>Chemical</b>	Soil: organic matter, C content...
<b>Biotic</b>	
<b>Structural</b>	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 <sup>2</sup> /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) ...
<b>Functional</b>	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 (%)
<b>Composition</b>	Canopy tree species richness (up to 20-30 in few ha) Characteristic, typical species - flora and fauna (trees, understory, lichens, ferns, arthropods, birds, bats...)





## HABITAT ACTION PLAN – LAURISILVA 9360

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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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## Natura 2000 Biogeographical Process

### 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



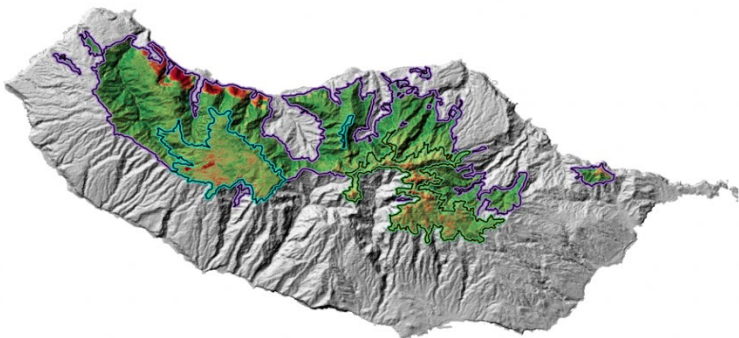


# HABITAT ACTION PLAN – LAURISILVA 9360

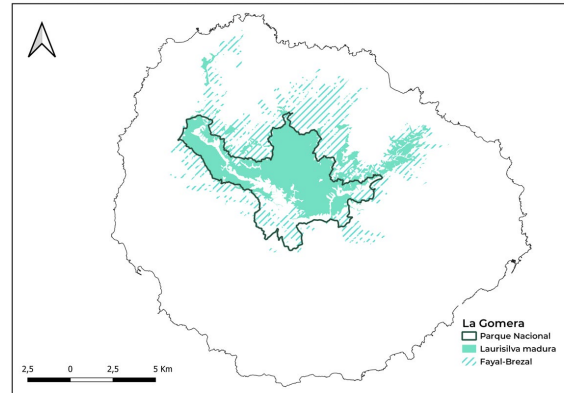
## Natura 2000 Biogeographical Process

### AREA OCCUPIED

- Different methodologies, scales...

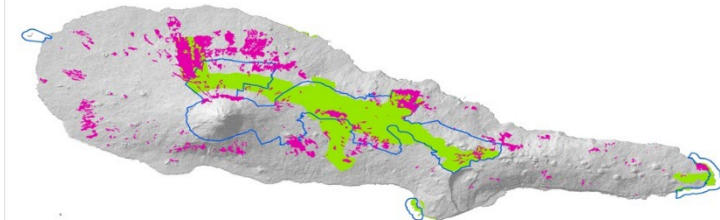


Áreas Natura 2000  
Laurissilva da Madeira  
Maciço Montanhoso Central da Ilha da Madeira  
Maciço Montanhoso Oriental da Ilha da Madeira  
NDVI  
0,751535  
0,036041



La Gomera  
Parque Nacional  
Laurissilva madura  
Fayal-Brezal

Distribution of habitat 9360\* in Pico island (Azores)



Legend  
9360\* - Macaronesian laurel forests  
ZEC  
ZPE  
Coastline





# HABITAT ACTION PLAN – LAURISILVA 9360

## Natura 2000 Biogeographical Process

### 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.

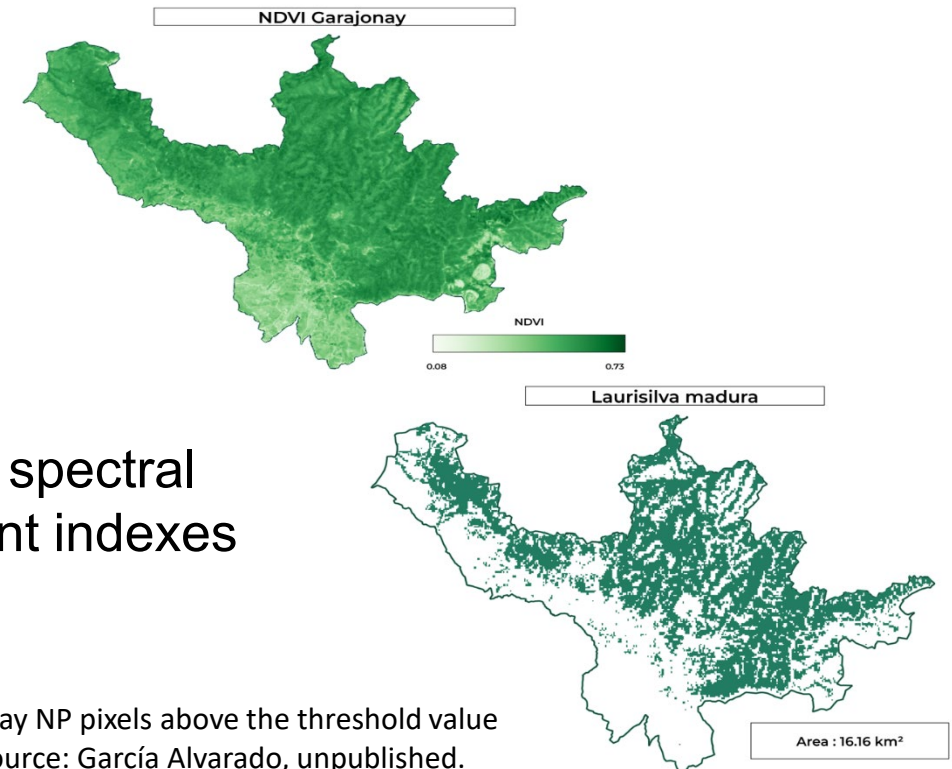


Figure: Garajonay NP pixels above the threshold value for laurisilva. Source: García Alvarado, unpublished.





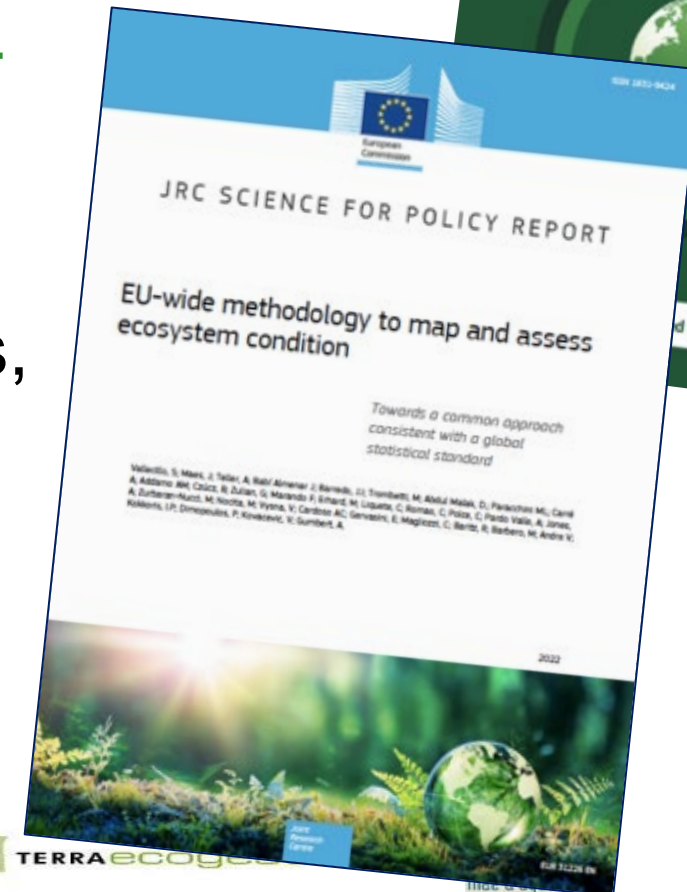
# HABITAT ACTION PLAN – LAURISILVA 9360

Natura 2000 Biogeographical Process

## STRUCTURE & FUNCTION ASSESSMENT

Proposal for harmonisation:

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







# HABITAT ACTION PLAN – LAURISILVA 9360

## Natura 2000 Biogeographical Process

### MONITORING ASSESSMENT - PROPOSAL FOR HARMONISATION

#### Structural

1. Canopy height (m)
2. Community Basal Area (m<sup>2</sup>/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 use of forest inventories

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 of deadwood





## HABITAT ACTION PLAN – LAURISILVA 9360

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## 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



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## 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*





## HABITAT ACTION PLAN – LAURISILVA 9360

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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



## HABITAT ACTION PLAN – LAURISILVA 9360

### Natura 2000 Biogeographical Process

- Recovery of 25% of the original Laurisilva area
  - Increase protection
- *Presentation by José Maria Fernández Palacios, Univesidad de la Laguna, Tenerife*





## HABITAT ACTION PLAN – LAURISILVA 9360

### Natura 2000 Biogeographical Process

#### 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

**Natura 2000 Biogeographical Process**

Roadmap:

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





THANK YOU!