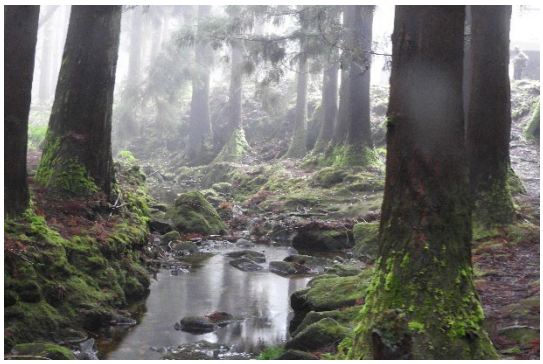

2nd Natura 2000 Seminar for the Macaronesian Region

Seminar Report

8 – 10 November 2023
Angra do Heroísmo, Portugal

Consortium Information:
Wageningen Environmental Research, Wageningen Marine Research, Wageningen UR

In cooperation with:
Mãe d'Água
TerraEcogest
NatureBureau Ltd.
CEEweb
Estonian University of Life Sciences

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Cover photos: Theo van der Sluis

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Event: All presentations from the seminar and other information and relevant documents can be found at: https://biogeoprocess.net/macaronesian-region/

Contents

1. Introduction

1.1. Context of the Natura 2000 seminar for the Macaronesian region

The Natura 2000 biogeographical process was launched in 2011 by the European Commission. The objective of the process is to promote information exchange, networking and cooperation on Natura 2000 related issues amongst Member States and stakeholders at biogeographical region level. The process involves regular seminars in each biogeographical region (or group of regions) to discuss key conservation challenges and agree on a roadmap for cooperative action in the region(s) for the following years.

The terrestrial Macaronesian region covers 0,3 % of the European part of the EU land territory and includes two Member States (Portugal and Spain) and three island groups (Canary Islands, Madeira, Azores).

The second Macaronesian biogeographical seminar took place from 8 to 10 November 2023 in Angra do Heroísmo, Azores, Portugal, where it was hosted by the 'Secretaria Regional do Ambiente e Alterações Climáticas, Governo Regional dos Açores' (Regional Secretariat for Environment and Climate Change). In total, 38 participants attended the seminar, originating from the two Member States concerned with the Macaronesian region, plus people from three additional Member States who participated as experts, representatives of the European Commission or part of the supporting team.

The field visits were organised by the Azorean Regional Secretariat for the Environment and Climate Change/Regional Directorate for the Environment and Climate Change.

1.2. The four themes selected for the seminar

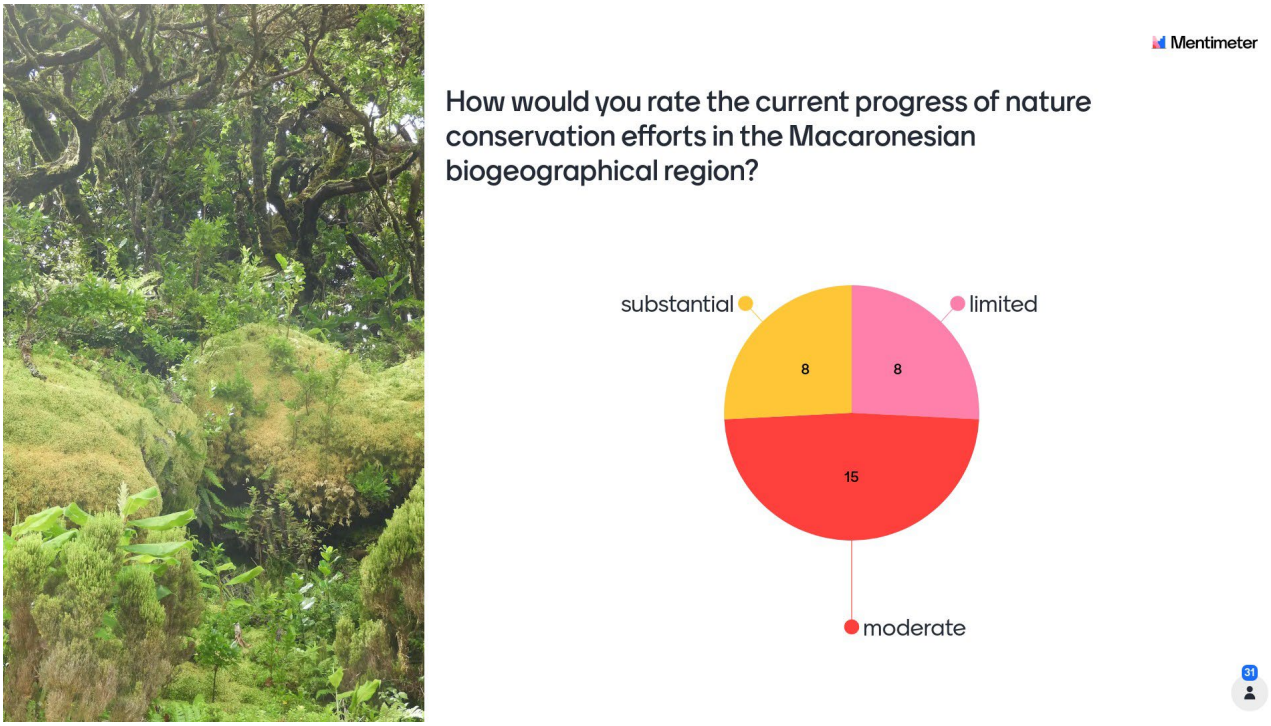
The Natura 2000 seminar programme (Annex I) focused on four main themes and, additionally, on the work done by the two working groups initiated by the Spanish Government after the previous seminar, as follows:

- Theme 1: Ecological restoration of degraded areas
- Theme 2: Favourable Reference Values for habitat types
- Theme 3: Invasive species control
- Theme 4: Conservation measures for fauna species: lessons from the past and ideas for the future
- Working group 1: Pilot action plan for a habitat type of community interest (Laurel forest type H9360)
- Working group 2: Maintaining ecological coherence of the Natura 2000 network in the Macaronesian region

These topics were central to the thematic working groups, with themes 1 and 2 scheduled as parallel sessions, as well as themes 3 and 4, and working groups 1 and 2. Reports on the outcome of these sessions were presented in plenary during the last day.

1.3. Reading guide

After this introduction, Chapter 2 provides a summary of the opening session (day 1). Chapter 3 presents the reports of the two sessions focused on the two working groups established after the previous seminar (day 1). Chapter 4 presents the reports from the four thematic working groups, with the findings and recommendations as presented on the closing day (day 2). Chapter 5 presents a summary of the projects presented at the knowledge market. Chapter 6 presents a report from the field excursion and the main topics that were discussed (day 3). The plenary discussion of the conclusions and the important issues which might require follow-up actions are presented in Chapter 7, as well the follow-up actions to include in the roadmap that will be presented in the NADEG[1] and made available to the seminar's participants and the general public.



Mentimeter poll 1: Seminar participants' perception about the progress in conservation in the Macaronesian region

[1] Nature Directives Expert Group (expert group on the EU Birds and Habitats Directive)

2. Opening and plenary sessions

2.1. Opening

The seminar was opened by **Ana Rodrigues**, Director of the Regional Secretariat for Environment and Climate Change (Diretora Regional do Ambiente e Alterações Climáticas, Governo dos Açores), who welcomed the participants. She underlined the seminar's importance and relevance, emphasising the participation of Azorean institutions—DRAAC and the University—in the first Macaronesian Seminar, as well as the work carried out since then and within the LIFE programme, aiming at achieving real, effective actions for nature conservation in the EU.

A recorded message from **Andrea Vettori**, Head Nature Conservation of the Directorate General Environment (DG ENV) of the European Commission, was shown. He welcomed all present, stressing the importance of Biogeographical Seminars to address the current European challenges in nature and biodiversity conservation. Particularly in stimulating Member States to submit their pledges, with the ultimate aim of attaining the targets set in the EU Biodiversity Strategy 2030; and, specifically, for the coherent management of the Natura 2000 network, enhancing the conservation status of species and habitats within it.

Frank Vassen (DG ENV, European Commission) presented the framework for the Biogeographic Seminars, highligting their current relevance for the targets under the EU Biodiversity Strategy for 2030. Nature in Europe still continues to decline, due to key pressures such as agricultural intensification and other land use changes. In the Macaronesian Biogeographical region, Invasive Alien species are a key pressure for many habitats and species. Although the EU-wide network of Natura 2000 protected areas is formally complete, it remains highly fragmented. Furthermore, many sites are still not adequatly managed. To ensure that the key targets for protected areas and status improvement of habitats and species are attained, Member States must step up their implementation efforts. The Biogeographical seminars are address these issues, assessing and reviewing the pledges that Member States have submitted in relation to the targets.

Picture 1: Official opening of the Macaronesian seminar by Mrs Ana Rodrigues, Director of the Regional Secretariat for Environment and Climate Change

Picture 2: Official opening of the Macaronesian seminar by Andrea Vettori, Head of Nature Conservation, DG ENV, European Commission

Picture 3: Frank Vassen, DG ENV, European Commission, outlined the importance of the Biogeographic Seminars

Rafael Hidalgo, from the Ministry for the Ecological Transition and the Demographic Challenge, Spain (MITECO), presented the main subjects discussed during the 1st Macaronesian Seminar: i) maintaining or restoring Natura 2000 habitats in favourable conservation status; ii) ensuring the coherence of the network at different levels, including the European level, which is considered paramount. The seminar identified a need for further exchanges at biogeographical region level, on the following topics :

- Development a specific interpretation manual for the Macaronesian Region.
- Harmonization of procedures for the evaluation of habitat types.
- Harmonization of criteria and procedures for determining favourable reference values.
- Elaboration of action plans at the biogeographic region level.
- Establishment of the minimum elements of a management plan for Natura 2000 sites.
- Assess the contribution of each SCI to ecological coherence.

Based on the seminar, two working groups were created: the first one on the ecological coherence (including methodologies for habitats assessment); the second to draft a pilot action plan for a Macaronesian laurel forests.

João Salgado, from ELMEN presented several key aspects of the LIFE programme, explaining the main types of projects under programme, as well as the calls that are currently open. He particularly focused on the LIFE Nature projects that have been funded for the Macaronesian Region. He listed the "must read" documents which should be considered before presenting a project proposal to the LIFE programme, all of which are available online.

Picture 4: Rafael Hidalgo (Ministry for the Ecological Transition and the Demographic Challenge, Spain) presenting the results from the 1st Macaronesian Seminar

Picture 5: João Salgado (ELMEN) presenting the LIFE Program updates

2.2. Protected areas target

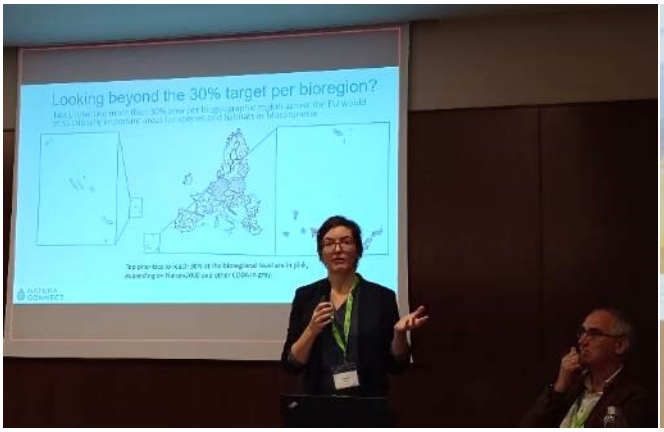
In her online presentation, **Elena Osipova** (European Environment Agency), presented the current state of progress of protected area coverage, both at EU- and Macaronesian Region-level. Of the two Macaronesian countries, only Spain has submitted pledges so far. The overall protected area coverage for the land part of the Macaronesian Region already exceeds 40 %. Remarkably, seminar participants agreed that most of the Macaronesian protected areas seem to match the definition of strict protection. Further adaptions will be required to the EIONET reporting format for nationally protected areas, to allow a reporting of strictly protected areas and OECMs.

Francisco Guil, from the Ministry for the Ecological Transition and the Demographic Challenge, Spain, spoke about the Spanish commitments to reach 30 % of protected area and 10 % of strict protection at national level. The 30 % target has already been achieved for the terrestrial part of Spain, but not for the marine part. Current efforts are therefore mostly directed towards identifying new potential protected areas which can contribute not only to achieving the target, but also to increase network coherence. The 10 % target of strict protection is currently being discussed with the regional authorities; but further clarifications of this concept and of the activities eventually allowed seem to be necessary. When asked about how to accommodate fisheries in protected areas, Francisco noted that this is not very impactful, since it does not affect the sea bottom, and only occurs in areas which are not strictly protected.

Picture 6: Elena Osipova (European Environment Agency) presenting the current state of protected areas in the EC and in the Macaronesian Region

Picture 7: Francisco Guil (Ministry for the Ecological Transition and the Demographic Challenge, Spain) presenting how Spain is planning to achieve the commitments presented in its pledges

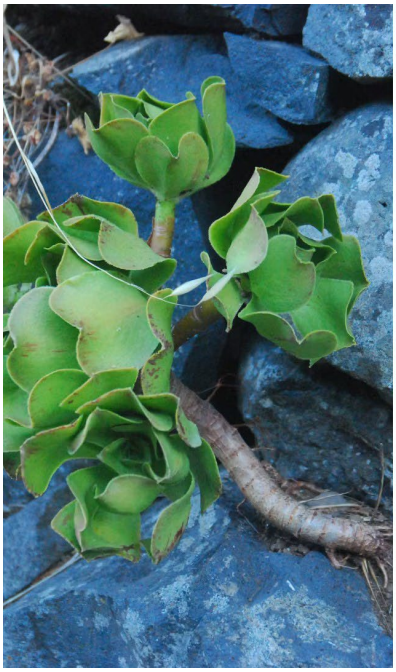
Jutta Beher, from the Horizon project "NaturaConnect" presented the project's work at European scale to find the best locations for additional protected areas for the 30 % target. She presented a set of core rules that can be taken as "a quick guide to prioritization" when deciding which areas to choose from. She also showed a series of European-level maps, as well as a higher resolution-analysis for Macaronesia (using a 10 km grid, to be refined in the future). She also presented a method for incorporating climate change into the models used for mapping future protected areas, e.g., modelling bioclimatic refuge areas.

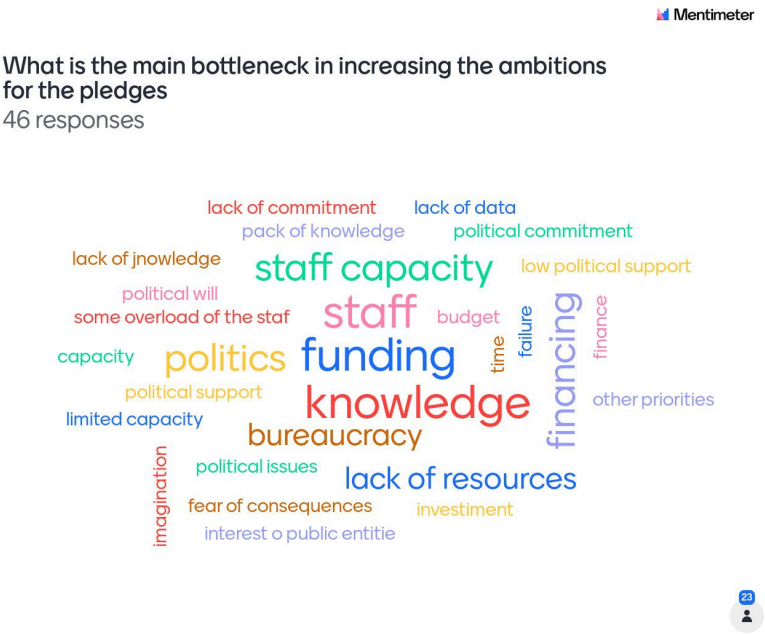


Picture 8: Jutta Beher (IIASA) presenting the work currently being done by NaturaConnect to inform the creation of new protected areas

Picture 9: Daniel Veríssimo (Rewilding Europe) presenting the options available for paying for protected areas and nature conservation

Also representing NaturaConnect, **Daniel Veríssimo**, from Rewilding Europe, presented options for payment of protected areas and connecting corridors: public, philanthropic and private funds. The first group encompasses the Interreg program, the European Regional Development Fund (ERDF) and, just for Portugal, the Cohesion Fund and 'Fundo Ambiental'. As for private financing, the options include Business Plans for protected areas, own generated funds (entry fees, concessions, etc.) and nature tourism. Other possibilities include public-philanthropic-private partnerships, de-risk private funding (blended finance), green and blue bonds (usually developed in buffer areas around infrastructures for risk reduction), debt-for-nature swaps and various subsidies.





Mentimeter poll 2: Seminar participants' perception of the main barriers for Member State submission of pledges

2.3. Conservation status improvement target

Theo van der Sluis, from Wageningen Environmental Research, presented a preliminary assessment of the pledges submitted for improvement of the conservation status of protected habitats and species, with data from Sweden, Spain, Denmark and Germany. Theo focused mainly on Spain, the only country including a Macaronesian region part that already submitted pledges.

Rafael Hidalgo, from the Ministry for Ecological Transition and Demographic Challenge, Spain, presented the Spanish approach for developing pledges for the 30 % target for improving the conservation status of species and habitats in Spain. This work required a close coordination with 16 regional authorities, encompassing 4 different biogeographic regions, each including a high number of status assessments for protected species and habitats, of which 652 were assessed as U1 or U2. The first problem to address is choosing which species and habitats to prioritize. Rafael presented the methodology followed by the Spanish authorities. This led to the selection of 51 habitats, 138 Habitat Directive species and 17 bird species, totalling 206 features for which

conservation or restoration measures needs to be stepped up. A discussion followed, regarding the relevance of cross checking chosen species and habitats and about the feasibility of the methodology described.

Finally, **Alexandru Craciun**, **Erwin Amavassee**, **Beatrice Avagnina** and **Yves Olatoundji**, from the IUCN gave an online presentation of BEST, a LIFE project dedicated to providing small- and medium-sized grans for EU Outermost regions and OCTs. Coordinated by IUCN European Regional Office, BEST will be implemented from February 2023 to January 2031. A first call for applications opened just a few days before the seminar. Macaronesia is eligible for implementing BEST Life 2030 projects. Examples were presented of Macaronesian projects funded within the (previous) Life4BEST programme.

Picture 10: Theo van der Sluis (WEnR) presented an assessment of the current state of the pledges and the current state and trends of habitats and species pledged

Picture 11: Rafael Hidalgo presenting Spain's process of addressing the conservation status improvement pledge

Picture 12: IUCN European Regional Office team presenting online the BEST Life 2030 programme

3. Working groups

3.1. Working group 1. Maintenance of the Natura 2000 network ecological coherence in the Macaronesian region

Chair: Neftalí Sillero

Highlights of the presentations and Conclusions

Francisco Guil (Ministry for the Ecological Transition and the Demographic Challenge, Spain) introduced Working Group 1, its establishment and activities carried out so far. **Neftalí Sillero** (University of Porto) presented a general introduction to the topic, firstly defining coherence, then the components through which coherence can be assessed: representativeness, redundancy, rarity, connectivity and resilience. Some discussion followed about the term 'redundancy', concluding that it is too complex in this context, and therefore should be avoided. Neftalí Sillero next provided an overview of available environmental map datasets for the Macaronesian region.

The proposed development of a connectivity model was then discussed. Most people present agreed that connectivity should not be assessed using too many parameters and data. Instead, it should be based on the needs of ecosystems and species regarding ecological continuity among patches and populations. E.g., connectivity of forested areas, or dry grasslands, with representative species identified. Discussion then focused on 'resilience' and how to assess it. It can be approached through the evaluation of habitats and species' viability, which, in turn, can be based on accepted standards for Minimum Viable Populations.

Ricardo García (Biosfera XXI & MITECO expert group, online), talked about the need for a multilevel management of the Natura 2000 network. Currently the network is managed on a site-by-site basis. For adequate management of the Natura 2000 network as a coherent network, a multilevel management should be developed (at site, island, archipelago and biogeographical region levels), taking into account the several components of ecological cohesion, such as representativeness. A possible starting point would be to elaborate a master plan at the biogeographical region level, which would lay the foundation for managing each site, with the global aim of assuring the coherence of the network.

Lastly, **Francisco Guil** discussed possible tools to be developed for assessing the coherence of the Natura 2000 Network. The outcoming definition of coherence, its components and its implications could afterwards be adapted for other biogeographical regions. The current team, including technical and scientific experts, expects to expand the analysis to all Spanish territory, across all regions. This will also help to inform Spain about the integrity of their Natura 2000 Sites and Network.

3.2. Working group 2. Development of a pilot action plan for a habitat type of community interest in the Macaronesian region – Pilot action plan for laurel forests (9360)

Chair: Concha Olmeda

Highlights of the presentations

Concha Olmeda (ATECMA & MITECO) presented Working Group 2, which was set up in September 2018 in Madeira, during the 1st Macaronesian Seminar, with the aim of harmonizing procedures for establishing habitat action plans. Laurel forests were later chosen for this action plan.

María Regodón (TRAGSATEC) presented the Working Group 2 goals: drafting an action plan, identifying information gaps and drawing a project proposal to cover those gaps. Criteria used for choosing the Macaronesian laurel forests habitat (H9360*) for the pilot plan were explained. The working group includes people from both Member States and all 3 archipelagos, scientific and technical coordinators and staff. Online meetings started March 2023, and should continue until February 2024.

Concha Olmeda further explained the contents of the plan, the key issues and steps, mainly: i) Habitat description: common characteristics among all archipelagos, as well as diversity, variability and dynamics, relations to other habitats, etc. ii) Conservation status assessment and the need to harmonize approaches and methods. iii) Potential and current area estimation methods. iv) Proposals for harmonizing structure and function assessment. v) Proposals for harmonizing the assessment of pressures and threats across all areas. Conservation goals were tentatively defined and a favourable reference value (FRV) of 25 % of the potential area was proposed. Improving habitat condition in degraded areas and improving protection as to include areas not currently included in the Natura 2000 network were also proposed.

Ángel Vera (Canary Islands Government, recorded presentation) showed an example of how to account for climate change. Ángel presented an analysis of temperature and rainfall evolution in Tenerife, comparing 1970-1999 with 1993-2022. The expected theoretical consequences of such evolution in the distribution of 'monteverde', i.e., laurel forests (H9360) and 'fayal-brezal' (H4050), were compared to the actual changes. It was observed that the consequences were less drastic than expected. Theoretical models can be considered together with observations of the territory dynamics.

José María Fernández-Palacios (Universidad de La Laguna, recorded presentation) presented the objectives defined both at the biogeographical region level and at the country level, for achieving a favourable conservation status for habitat 9360: i) Recovering, through ecological restoration, 25 % of the habitat potential area—justification for the proposed 25 % FRV was presented with detail; ii) Improving the protection of 9360 habitat areas outside the Natura 2000 network of protected areas.

Discussions

Discussions focused mostly on three subjects: estimation of the current habitat areas, the FRV of 25 % and the importance of considering habitats subtypes. Estimating the current areas occupied by each habitat is proving challenging. Mapping using satellite imagery classification yields too many mistakes. Therefore, manual methods must be used, with aerial photography and field work. Moreover, data gets rapidly out of date, and therefore habitats maps must be updated regularly. As for the FRV of 25 %, some participants consider the

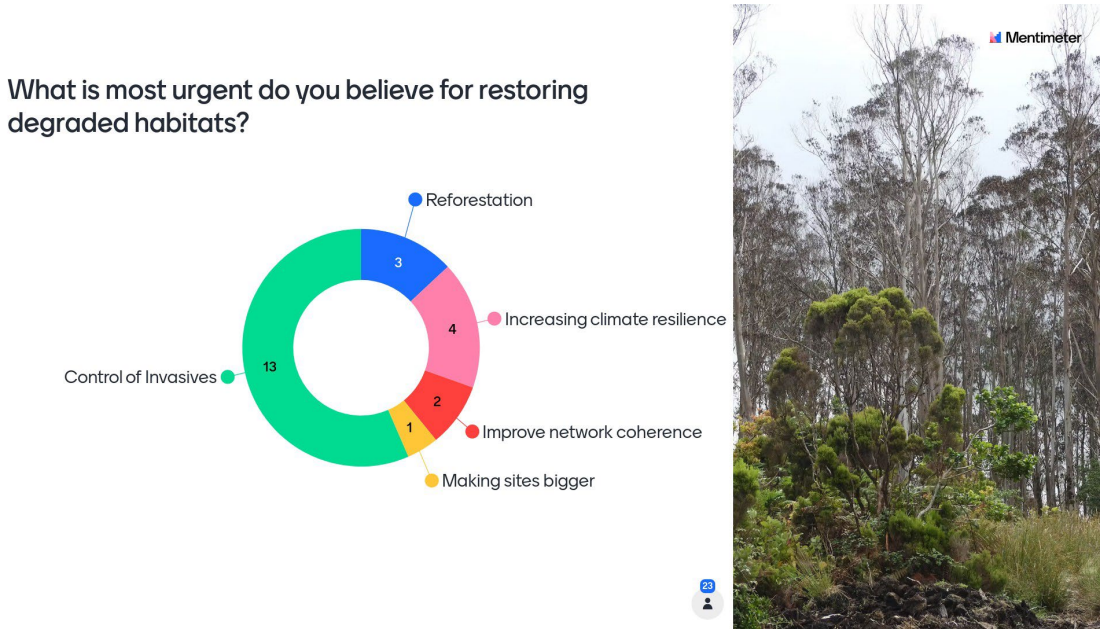
value unrealistic, others think it is a good value. Overall, participants agree it is necessary to set a value even if it is ambitious, otherwise the risk of further loss is too high. Nevertheless, FRV must be adapted to habitat types and subtypes, i.e., FRV must be defined for each habitat (sub-)type. If all laurel forests were regarded as one, there would be a significant risk of losing the rarer subtypes not targeted for protection.

Conclusions

The next steps, as presented by Concha Olmeda, will be the completion of the action plan; identifying both knowledge and methodological gaps which must be addressed in the future; and the preparation of a project proposal, applying for funds and developing the work accomplished by the working group. The follow-up action for the roadmap is the elaboration of action plans for other habitats and species, using the same methodological framework developed within the scope of this working group and its achievements.

Picture 13: Concha Olmeda (ATECMA) presenting the achievements of the working group ' Development of a pilot action plan for laurel forests (9360)'

Picture 14: María Regodón (TRAGSATEC) presenting a summary of the working group discussion.



Mentimeter poll 3: Need and urgency of measures to restore degraded habitats

4. Thematic sessions

4.1. Theme 1: Ecological restoration of degraded areas

Chair: Lucía Iglesias Blanco | **Facilitator**: Sandra Mesquita

Objectives of the thematic session

The main objectives of this thematic session were to discuss and reach a common understanding on the following questions:

- How can we achieve restoration with a fragmented ownership, many small-scale private properties?
- How can we organize a more effective and more successful planning process and implementation of measures on the ground?
- How can we disseminate best-practices in restoration?

Highlights of the presentations

Rui Botelho (SPEA Azores) presented the restoration projects implemented by SPEA Azores (the Azorean part of the Portuguese Society for the Study of Birds) with the aim of improving several bird species´ habitats, of the Azores bullfinch (*Pyrrhula murina*) in particular. The habitat more often targeted is the humid laurel forest (H9360, on the island of São Miguel, which was restored through a sequence of several projects from 2003 onwards (until 2027, so far). Restoration actions consist of invasive plant species control, followed by soil stabilization and native vegetation planting, and ending with long-term maintenance actions. Monitoring was presented as a fundamental part of the process, to assure its future success.

Sofía Rodríguez Núñez (Canary Islands Government, online) presented the experimental habitats restoration project implemented in Cumbres de Famara (Lanzarote). Since soil restauration was perceived as the most critical action, the project focused mainly on promoting soil health. Cooperation among the many institutions and stakeholders involved, governmental, technical and academic, public and private, is crucial. The establishment of plant nurseries guaranteed the supply of plants throughout the whole project, produced from collecting native plants seeds; experimental plantation techniques were successfully tested, as well as mycorrhiza inoculation. Images were presented of communication actions in schools.

Discussions in breakout groups

→ <u>Addressing small-scale property issues:</u>

Renting or buying land, eventually using money from visitors, is the most obvious solution for protecting large enough areas for effective protection of species and habitats. Yet, renting may not be a long-term solution, because continuity is not assured, after the renting period ends. Expropriation was also proposed, but is very unpopular. Voluntary agreements with landowners could also be a solution, but does not work within the local communities involved. Assuming nature conservation in very small areas through the establishment of micro-reserves is also an option, with good results in other areas (e.g. in mainland Portugal).

→ <u>Engaging local communities in conservation:</u>

Effectively engaging from the beginning landowners and local people in projects, is very important, explaining all actions which will be carried out and showing how they will benefit from restoration actions. For instance, small non-productive plots with high ecological value can be used for nature conservation as part of FSC sustainable forestry certification, thus benefiting the property owners. Promoting actions implemented by volunteers will be most effective if all involved benefit: e.g., voluntary workers could have tax benefits—immediate benefits, obtained automatically and in a clearly visible way—and landowners benefit from having their land improved. Organizing training camps at an early stage with all stakeholders—scientific experts, practitioners, technicians from the local government, landowners, etc.—can also be useful in engaging local communities.

→ Assure effective communication with all stakeholders:

Communication is paramount for gaining local people's confidence, therefore it should start from the beginning, and preferably from within the community, making them part of the process. Communication professionals must be hired to enhance public awareness, targeting all stakeholders through active promotion of local ecological restoration actions, but also on social media, using short videos, working with schools, etc. Networking among professionals involved in ecological restoration should be promoted, in particular between researchers and practitioners. Moreover, new stakeholders should be included in the process, like NGO and Zoos, who can contribute with their knowledge .

Picture 15: Break-out groups discussions

Picture 16: Break-out groups discussions

4.2. Theme 2: Favourable reference values for habitat types

Chair: Theo van der Sluis | **Facilitator**: Carlos Sunyer

Objectives of the thematic session

The main objectives of this thematic session were to discuss and reach conclusions on the following questions:

- How can favourable reference values be adapted to encompass the habitat differences specific to each of the three Macaronesian archipelagos?
- How can site constraints to ecological succession be taken into account when setting favourable reference values and methodologies for their use?

Highlights of the presentations

Antonio Camacho (University of Valencia) reviewed the concept of Favourable Reference Values, and presented a procedure for assessing conservation status. He focused also on the underlying concepts, especially those of Favourable Reference Range (FRR), Favourable Reference Area (FRA) and Current Value (CV). There is still much to be agreed between member states and experts regarding FRV, since it is not well documented how they are defined. It is therefore important to collect all relevant information on the subject, in order to understand its ecological and historical context. FRV can be either reference based (i.e., based on historical distribution) or model-based. The most important issue is how much area is required to ensure a favourable status. Camacho presented several examples of both approaches from all over Europe.

Jorge Capelo (INIAV, IP) presented two exercises of application to H9360 (Macaronesian Laurel Forests). The first applies solely to Madeira Island, where estimates of FRR, FRA and CV were derived from reclassification of land use types and a geobotanical model. The second exercise applies to the Azores, Madeira and the Canaries, based on area data issued from the RED List of Habitats of Europe project (Janssen *et al.*, 2016[2]). Both exercises allow for the evaluation of the 'restoration deficit' (RD), i.e. the actual current value and the desired goal of FRA. Whether considering just the Madeiran regional subtype of H9360 or the whole Macaronesian range, there is a need to envisage laurel forest restoration.

Discussions in breakout groups

→ How can favourable reference values be adapted to encompass the habitat differences specific to each of the three Macaronesian archipelagos?

It is of key importance to reach a common understanding of habitat types and subtypes across the Macaronesian region. The subtypes will differ from island to island, and for each of them a Favourable Reference Area should be established, so that a representative sample of each habitat subtype is protected. Additionally, reference values should also consider the different flora and fauna species associated with each habitat type and subtype.

Conservation actions should be implemented in parallel with the assessment of favourable reference values. The latter may take a long time, or may be successively postponed by prohibitive costs, which could lead to an unacceptable loss of valuable habitats if conservation would depend on reaching the final results regarding FRV. Conservation actions can be adapted later, if necessary.

→ How can site constraints to ecological succession be taken into account when setting favourable reference values and methodologies for their use?

Large protected sites are essential for conservation planning, to cater for dynamics and mosaics of habitat types, allowing for protecting all habitat types, even when succession is setback; moreover, large sites are much more robust in the view of climate change. Multilevel management is important: experiences and information acquired at each level should be shared across the different levels: from site to island, to archipelago, and to the whole biogeographic region.

[2] https://forum.eionet.europa.eu/european-red-list-habitats/library/project-deliverables-data/final-report-restructured/download/en/1/Final%20report%2030-11-2016%20for%20publication%20in%20forum%20clean.pdf

Picture 17: Antonio Camacho (University of Valencia) presenting the general principles of Favourable Reference Values

Picture 18: Jorge Capelo (INIAV, IP) presenting the Favourable Reference Values applied to Macaronesian habitats

Picture 19: Break-out groups discussions

Picture 20: Break-out groups discussions

4.3. Theme 3: Invasive species control

Chair: Gonzalo Gonzalez-Jurado | **Facilitator**: Carlos Sunyer

Objectives of the thematic session

The main objectives of this thematic session were to reach a common understanding on the following questions:

- How can we avoid new invasions of species?
- How can we effectively manage already established invasive species? How can we promote stakeholders' engagement in this management?

Highlights of the presentations

Duarte Barreto (IFCN) presented the work carried out in Madeira archipelago regarding vertebrate invasive species control: rabbits, goats, pigs, rats, mice, cats and ferret (depending on the island or islet). Efforts begun in 1995, in Desertas. Vertebrate eradication created an opportunity for native species to thrive, and populations of several animal species, mostly snails and geckos, increased significantly afterwards. Conflicting regulations are still a main drawback when dealing with IAS, since some effective control methods would

require the use of regulated biocides and non-selective traps. Lack of communication skills is also an issue, aggravated by the increasing popularity of animal protection parties, whose propaganda is blind to ecological interactions.

João Salgado (ELMEN) focused on the threat posed by IAS to biodiversity in the Portuguese Macaronesian islands, how it was the subject of national laws, and how it is being addressed by LIFE projects. In Portuguese archipelagos, 46 out of 72 LIFE projects targeted the IAS threat. João presented some reflections on the results of projects implemented in Madeira and the Azores, mostly tackling invasive mammals and plants, regarding: i) prevention; ii) early detection and quick intervention; iii) management of established IAS. Finally, some notes on general IAS management were presented, along with some examples of good practices. The main challenges in this area are still long-term commitment to ensure control, including funding, a solid strategy, and monitoring.

A short discussion followed, focusing mainly on the continuity of IAS control actions. IAS control is a first step in a complex process, and should be followed shortly by habitat restoration, especially for plant invaders, otherwise new invasions will follow. It is crucial to act fast and continuously, according to a solid follow-up strategy. In cases of small mammal invaders eradication, leaving the area to recover naturally may be enough if future invasion paths are not present. Some LIFE projects failed to control IAS, and there should be learned from these failures, so as not to repeat them in the future.

Discussions in breakout groups

→ How can we avoid new invasions?

A solid strategy for addressing IAS control is very important, encompassing strong regulations and its full implementation. Control of potential entering pathways for new IAS is also fundamental, as is monitoring for early detection, and capacity building for stakeholders with the ability of acting at the early signs of new invasions. Lastly, raising public awareness at all levels is also mandatory, for which it is essential to improve communication, to reach as many people as possible.

→ How can we effectively manage already established invasive species?

A long-term strategic plan with funding is needed, to prioritize action. Further monitoring, possibly with use of citizen science, and the use of a single tracking app. Specialised teams are needed to tackle the problem with urgency. The whole community must be involved in controlling IAS, eventually paying those who engage in good practices, which may require the localised use of chemical control.

Picture 21: Duarte Barreto (IFCN IP-RAM) presenting the work carried out in Madeira archipelago in vertebrate invasive species control

Picture 22: Break-out groups discussions

4.4. Theme 4: Conservation measures for fauna species—lessons from the past, ideas for the future

Chair: Frank Vassen | **Facilitator**: Theo Van der Sluis

Objectives of the thematic session

The main objectives of this thematic session were to discuss the work that has been done in Macaronesian territories for enhancing the conservation of fauna species, and to reach a common understanding on the following questions:

- How can we ensure that ongoing conservation measures for fauna species will be continued in the future?
- What are the practices which yielded the best results, and therefore should be replicated in future conservation projects?

Highlights of the presentations

Dinarte Teixeira (IFCN IP-RAM) discussed endangered invertebrates conservation in Madeiran archipelago. He briefly presented the state of art regarding the diversity, distribution, legal protection, threats and conservation status of these species, mostly land snails and spiders. He presented the conservation measures implemented to protect threatened species in the archipelago, in Porto Santo islets (through LIFE Ilhéus de Porto Santo) and Desertas (within the Help Desertas Land Snails project); the conservation measures planned for Santa Maria (Azores), within the LIFE SNAILS project; and an ongoing pilot study from Tenerife (Canary Islands). Dinarte also presented the future challenges in invertebrate conservations, which must include defining priorities through a conservation strategy, and a plan to guide conservation actions, as well as raising public awareness and literacy based on scientific facts, and finding alternative funding sources.

Azucena de la Cruz (SPEA Azores) presented the work done by SPEA (Portuguese society for the study of birds) in conservation of breeding seabirds in Madeira and the Azores. She presented the 18 breeding seabirds in Portugal and the conservation measures to enhance the conservation status of those endangered, addressing their main threats: predation by introduced species, light pollution, marine litter, disturbance due to human

presence and by-catch/ ghost fishing. Also monitoring to increase knowledge about these species and therefore improve their protection, as well as raising public awareness are paramount. Azucena stressed the importance of learning from successes and failures, using holistic approaches to allow for long-term solutions, and of engaging in partnerships, cooperation and knowledge-share.

Discussions in breakout groups

→ Ensuring continuation of measures

Conservation issues should be addressed using a holistic approach, highlighting its economic benefits to guarantee community engagement and therefore ensure balanced partnerships among all stakeholders involved (public, private and NGOs). Permanent staff must be allocated to ensure the continuity of conservation actions, thus reducing the dependence on project funding. For such, private funding sources, such as company funding, must be actively pursued, as well as political-level ownership. Ensuring continuity of conservation measures often requires adaptation of the regulatory context, in view of project findings.

→ Best practices to be replicated

The removal of threats to such as invasive alien species, is paramount. Conservation measures must be implemented by multidisciplinary teams, which ideally include e.g. psychologists and anthropologists to facilitate community engagement, economists for funding, and communication experts. Gained experiences must be shared, successful measures but also failures, through data sharing repositories, which must be created and maintained.

Picture 23: Azucena de la Cruz (SPEA Azores) presenting SPEA's work on breeding seabirds in the Azores

Picture 24: Break-out groups discussions

5. Knowledge market

The knowledge market was opened by Ana Rodrigues, Director of the Regional Secretariat for Environment and Climate Change. She welcomed all participants with posters of LIFE projects in the Macaronesian region. In total there are 14 biodiversity projects ongoing in the Macaronesian region supported by the LIFE programme. Most projects present encompass habitat restoration, in multiple aspects: renaturalising areas

within a Green Coastal Wet Infrastructure; enhancing habitat quality for species—birds, beetles, snails and plants; reforestation of degraded areas with native plants to increase vegetation coverage in dry areas; etc.

Projects with a broader scope, covering areas in all the Azorean archipelago, aim at ensuring a better conservation status for all Macaronesian habitats and 50 % more species than those described in unfavourable status on the 2013 reporting to the EU. On climate change, presented examples focus on ensuring the implementation of measures related to specific and transversal key guidelines for adaptation and mitigation to climate change, some of which aiming specifically at coastal areas.

Annex 2 provides an overview of the LIFE projects present at the knowledge market. The Knowledge Market session did not include formal presentations, allowing for interaction between the participants and presenters of each project.

Picture 25: Knowledge Market opening by Ana Rodrigues

Picture 26: Group discussion during the Knowledge Market

Picture 27: Group discussion during the Knowledge Market

6. Field Excursion

The field visit touched upon several themes of the topics discussed during the seminar. Four sites were visited, Natura 2000 sites and intervention areas of LIFE projects currently being implemented in Terceira island, namely LIFE IP AZORES NATURA and LIFE BEETLES: 1. Ponta das Contendas Special Protection Area (PTZPE0031), a coastal area in the southwest of the island; 2. Lagoa do Negro, inside the Serra de Santa Bárbara e Pico Alto Special Area of Conservation (PTTER0017); 3. Furnas do Enxofre, also in Serra de Santa Bárbara e Pico Alto Special Area of Conservation; and 4. Eucaliptal do Algar do Carvão, partially included in the same Special Area of Conservation.

Guides: Rúben Coelho, Nature Ranger of the Environmental and Climate Change Services of Terceira/Island Natural Park of Terceira (Ponta das Contendas); Diana Pereira, LIFE IP AZORES NATURA Project Manager (Lagoa do Negro and Furna do Enxofre); João Filipe Fernandes, LIFE IP AZORES NATURA Project Assistant Manager (Lagoa do Negro); Carla Silva, Division of Classified Areas - Regional Directorate for the Environment and Climate Change (Furna do Enxofre); and Maria Teresa Ferreira, LIFE BEETLES project Manager (eucaliptal do Algar do Carvão).

Ponta das Contendas

The first stop of the excursion was at Ponta das Contendas, a Natura 2000 Special Protection Area, a Protected Area for management of habitats or species and an Important Bird Area. Here conservation measures were implemented to promote the conservation of three bird species, common tern (*Sterna hirundo*), roseate tern (*Sterna dougallii*) and Cory's shearwater (*Calonectris borealis*), which nest in this area between April and August. This work has been carried out by the Environmental and Climate Change Services of Terceira Nature Rangers, outside the scope of LIFE projects. It consists mostly of invasive alien species control (both flora and fauna); construction of artificial nests; and creation of structures (gravel and stone ridges) for bird juveniles to hide, and adults to build nests. The monitoring that is ongoing yearly on the site—regular census of the protected species as well as invasive species—showing a positive effect of these measures on the protected bird species' populations.

Picture 28: Ponta das Contendas

Picture 29: Rúben Coelho (Environmental and Climate Change Services of Terceira) explaining conservation measures implemented at Ponta das Contendas

Lagoa do Negro

The second stop was at Lagoa do Negro, an intervention area within the scope of LIFE IP AZORES NATURA. This area is being used as an experimental area for testing several techniques aimed at recovering habitats which depend on waterlogging: degraded raised bogs still capable of natural regeneration (H7120), blanket bogs (H7130) and oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea* (H3130). Pilot/demonstration actions for habitat recovery are being carried out, including : i) the removal of invasive alien species (Japanese cedar (*Cryptomeria japonica*), lacy tree fern (*Cyathea cooperi*), elmleaf blackberry (*Rubus ulmifolius*) and ginger lily (*Hedychium gardnerianum*)); ii) recreation of habitat conditions by using Japanese cedar wood boards (obtained from the IAS removal actions) to block water drainage(as of September 2021); iii) native trees and shrubs plantation; iv) reintroduction of *Sphagnum* species in test plots.

Picture 30: Group visiting the experimental plots

Picture 31: Diana Pereira (LIFE IP AZORES NATURA Project Manager) explaining the project goals and actions

Furnas do Enxofre

The third stop was a visit to Furnas do Enxofre, a fumarolic field. It is a manifestation of secondary volcanism with the emission of volcanic gases at various temperatures, with several crevices and fractures emitting steam, carbon dioxide and sulfuric gases, among others, which led to the development of a rare ecosystem with microorganisms capable of surviving in extreme environments. The area surrounding this natural monument was also restored within the scope of LIFE IP AZORES NATURA. It was planned for establishing a green corridor, connecting fragmented patches of different habitats, namely Furnas do Enxofre and Biscoito Rachado (in the Terra-Brava / Pico Alto massif): 'fumarolas' extremophile habitats, endemic forests with *Juniperus* spp. (H9560*) and endemic Macaronesian heaths (H4050). Ecological restoration was carried out in old agricultural lands, now public property, along with invasive alien species control in small patches of native forests and bushland, and conversion of old eucalyptus plantations in native bushland.

Picture 32: Group visiting the site

Picture 33: 'Fumarolas' extremophile habitats, and endemic Macaronesian heaths (H4050)

Eucaliptal do Algar do Carvão

The last stop was at a former eucalypt plantation, eucaliptal do Algar do Carvão, where native forests and scrub are being restored within the scope of the LIFE BEETLES project. It is partially included in the Special Area of Conservation of Serra Santa Bárbara e Pico Alto (PTTER0017). This area, together with a second one also formerly occupied by eucalyptus plantations, totalling almost 15 ha, is being reconverted to natural forests to increase the habitat availability for one of the species targeted by this project—a Ground beetle (*Trechus terrabravensis*), endemic to Terceira Island and classified as endangered in the IUCN red list. Eucalyptus trees are being removed by controlled felling, and by standing felling, injecting herbicide in drills previously made in the tree trunks. These methods allow for preserving the native understory that is still widely present in the area. In order to maintain suitable habitat for the target beetle species, some of the eucalyptus trees sections were kept on the site, piled and left to rot, recreating the ideal conditions for these scavenger species. A scientific team is monitoring the changes in native species. Positive effects are already evident, and measurable improvements can be seen in native flora and fauna species.

The second area which is being restored within the same LIFE project (not visited), was more degraded, with most native vegetation replaced by alien invasive species. Therefore, large machinery was used for the complete removal of exotic vegetation, allowing for the planting of native species. To avoid soil loss on steep slopes, measures were taken for soil stabilization.

Picture 34: Maria Teresa Ferreira (LIFE BEETLES project Manager) showing a specimen of the Ground beetle

Picture 35: The native understorey and dead eucalypts in the eucaliptal do Algar do Carvão

7. Concluding plenary session and following steps

7.1. Elaboration of actions

On the final day, the six chairs of the working groups and thematic sessions reported back on the outcome of discussions:

Working group 1 on ecological coherence:

It is important to determine whether the Natura 2000 network is indeed coherent as stated in its definition. There may be no easy way to measure the network's coherence, and the required data to do so may not be available. The working group adopted a technical approach to measure coherence through the assessment of representativeness (with clustering classification algorithms and habitat representation thresholds), redundancy (considering environmental replication and a defined threshold), rarity and endemicity (from geographic restrictiveness and functional distinctiveness plots), connectivity (using ALCOR/Circuitscape), and resilience (from ENMs, time series remote sensing data and GEE app).

Working group 2 on a development of a pilot action plan:

Action plans are useful tool to achieve FCS, therefore the pilot plan will inform other future action plans, eventually at other scales. Information gaps and other needs identified must be addressed, including the need to ensure the continuity of the work carried out.

Harmonisation of methodologies is needed and procedures for assessment and monitoring habitats status (evaluating area, structure and function, pressures, and threats), but the existence of distinct subtypes across the region should be taken into account.

Theme 1 on ecological restoration:

Fragmented land-property must be addressed with long-term solutions, through the purchase or expropriation of land to ensure bigger protected areas, or through the establishment of micro-reserves. Community involvement must be secured from the beginning, creating and demonstrating benefits for collaborating owners, promoting voluntary work, engaging all stakeholders involved. Effective communication is paramount and should be actively promoted.

Theme 2 on favourable reference values:

A common understanding of habitat types and subtypes is needed across the region, and FRVs must be defined for each of them, taking into account the protected species associated with them. Implementing conservation actions should continue in parallel with the definition of FRVs.

Adaptive management should be planned across all levels, from site to island, archipelago and biogeographic region. Large sites are essential to cater for ecosystem dynamics and mosaics of habitat types, particularly in view of climate change.

Theme 3 on conservation measures for fauna species:

A solid strategy for addressing IAS control is paramount, encompassing control of pathways for new IAS, early detection, monitoring, rapid-action brigades and raising public awareness. Long-term planning and funding is

needed, including monitoring strategies, possibly with use of citizen science and actively involvement of the community.

Theme 4 on conservation directed at fauna species:

The continuity of implemented measures is crucial. Permanent staff must be appointed to ensure the continuity of conservation actions and reduce the dependence on project funding. Securing private funding can also reduce the dependence on project funding.

Gained experiences must be shared through data sharing repositories, best practices can be replicated. Conservation measures must be implemented by multidisciplinary teams, economists, communication experts, sociologists etc, to ensure the engagement of the whole community.

7.2. Topics for the roadmap

Through a Mentimeter Poll conservation issues were identified which do require a follow-up, issues for conservation planning and attaining the aims of the Biodiversity Strategy.

Several topics were proposed, such as valuing ecosystem services, environmental benefits and goods and services related to beneficial conservation practices; various questions regarding harmonisation of procedures and methodologies — e.g., to assess the ecological coherence of Natura 2000 at biogeographical level, to approach conservation objectives and measures across the region, to monitor species and habitats conservation status; questions related to biota data gathering and data sharing; strategies do address invasive alien species; investment in action plans for habitat occurring across the whole region; resilience in water resources and adaptation to climate change. In total five (out of 16 suggested topics) were identified to explore further through a so-called 'carousel'.

Topic 1: Develop (more) habitat action plans

Habitat action plans are needed, similar to the one under preparation for the laurel forests. To achieve this, first of all, a **plan for funding** is needed. The best opportunities may be within Interreg or LIFE programs. Both governmental institutions and academia should be involved in preparing the necessary proposals to apply for such funds (although it is not clear who should lead this action).

Regarding the **content** of these new action plans, lessons should be learnt from the pilot action plan . After a careful selection of the targeted habitats, environmental pressures should be identified, as well as possible ecosystem services associated, and possible relations with other biogeographical regions should be checked. The plan requires also a stakeholder plan.

Topic 2: What concrete steps should be taken to move forward in the harmonization of assessment of habitats and species?

Harmonization should be sought as unique and standardized for each biogeographical region. To achieve this, the paramount issues are: 1) consensus on habitat definitions; 2) consensus on conservation status indicators; 3) consensus on sets and definitions of area and quality parameters. Moreover, accurate and consensus on definitions of favourable reference values for area and for quality parameters should be found.

In spite of different methodologies used in each country, the estimated parameters must, in the end, be the same and comparable, i.e., the intercalibration of parameters of area and quality is to be pursued. To achieve this, there should be an intense exchange process and discussion among countries on monitoring and assessment methods, through workshops (networking events) and working groups.

Topic 3: Adding value to ecosystem services

One of the objectives stated in the EU Biodiversity Strategy 2020 was to map, evaluate, and price ecosystem services is. When complete, Ecosystem Services will be an instrument for policy support, allowing for the set up CAP payments for ecosystem services. It is important to value ecosystems, and the goods and services they generate. A model such as the Biosphere Reserve can be used to promote the supply of nature-related goods and services within the Natura 2000 network to the Macaronesian islands visitors. E.g., trekking trails in relevant natural areas, bird and whale watching, wine produced in a Natura 2000 area, accommodation involved, etc.

The use of the Natura 2000 logo on goods and products adds value to the products and services produced/provided in the Natura 2000 network that are in line with and/or effectively contribute to the site's conservation objectives. This scheme contributes to communicate the benefits that Natura 2000 can provide to local economies and build new partnerships between site managers, landowners and users, local businesses while improving the perception of the Natura 2000 network[3].

Carbon credits can be used to fund conservation measures for habitats with high carbon storage capacity like forest and peatlands, (paid voluntarily, for instance, by passengers flying to the Macaronesian islands).[4]

Topic 4: What concrete steps should be taken to deal with invasive alien species?

A clear message must be passed to the public regarding the need to control domestic animals, and the danger of releasing them in the wild. A scientific assessment should assess what IAS species should be targeted first for control and eradication. Then, island-specific and site-specific action plans for control and eradication of IAS should be developed and implemented. Moreover, effective ways to share the best practices and protocols for control and eradication of IAS must be implemented. Permanent S.O.S. brigades should be created, with the aim of combating IAS.

Topic 5: Common approaches to the setting of site-specific conservation measures and objectives

Management plans are already being drafted for many sites in Macaronesia. To secure the harmonisation of procedures and methodologies across the Macaronesian region, and to set site-specific conservation objectives and measures, the following issues should be addressed:

1. Identification of what entities will be addressed and what the pressures are; of how much will be protected; and when to act.

[3] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.C_.2021.229.01.0006.01.ENG&toc=OJ%3AC%3A2021%3A229%3ATOC

[4] https://agriculture.ec.europa.eu/system/files/2023-07/guidance-dev-public-private-payment-schemes-forest_en.pdf

2. Efforts should not only be directed at habitats and species, but also at the pressures, which must be removed or reduced (DPSIR: drives, pressures, state, impact, response).
3. It is important to quantify conservation objectives and measures, avoiding vague descriptions.
4. Priorities must be set at site-level.
5. Adaptive planning is required, to incorporate new lessons learnt in management.

Still many issues should be discussed, for instance, for the best methodology for setting objectives, bottom up (at site level) or top down.

7.3. Closing remarks

Frank Vassen, DG ENV, concluded with perspectives for the discussions under the biogeographical process. He encouraged the participants to build on the seminar's conclusions. MS's nature authorities and experts should continue to collaborate under the biogeographical process towards the implementation of national commitments regarding the restoration and protected area targets of the EU biodiversity strategy for 2030 at biogeographical level. In view of the ambition in the Biodiversity Strategy, cooperation will be key to scale up conservation efforts. He recognised the positive achievement of the conservation work undertaken so far in the Macaronesian region, and took note of the messages from seminar participants, regarding the essential role of LIFE funding support for conservation and restoration in Macaronesia. He gave a final vote of thanks to participants, speakers, chairs and organising team and in particular to the Azores' authorities for their excellent support in organizing the seminar and organising the field trip on Terceira island (the Azorean Macaronesian region).

On behalf of the Azores' authorities, **Susana Gonçalves**, from Secretaria do Ambiente e Alterações Climáticas, concluded that the Azores are working towards developing an adaptive management of the Natura 2000 protected areas network, aiming specifically at reaching the targets set in the EU Biodiversity Strategy. International exchange across the region is important to reach the conservation targets. She closed the seminar thanking DG ENV and all participants for their input and active participation.

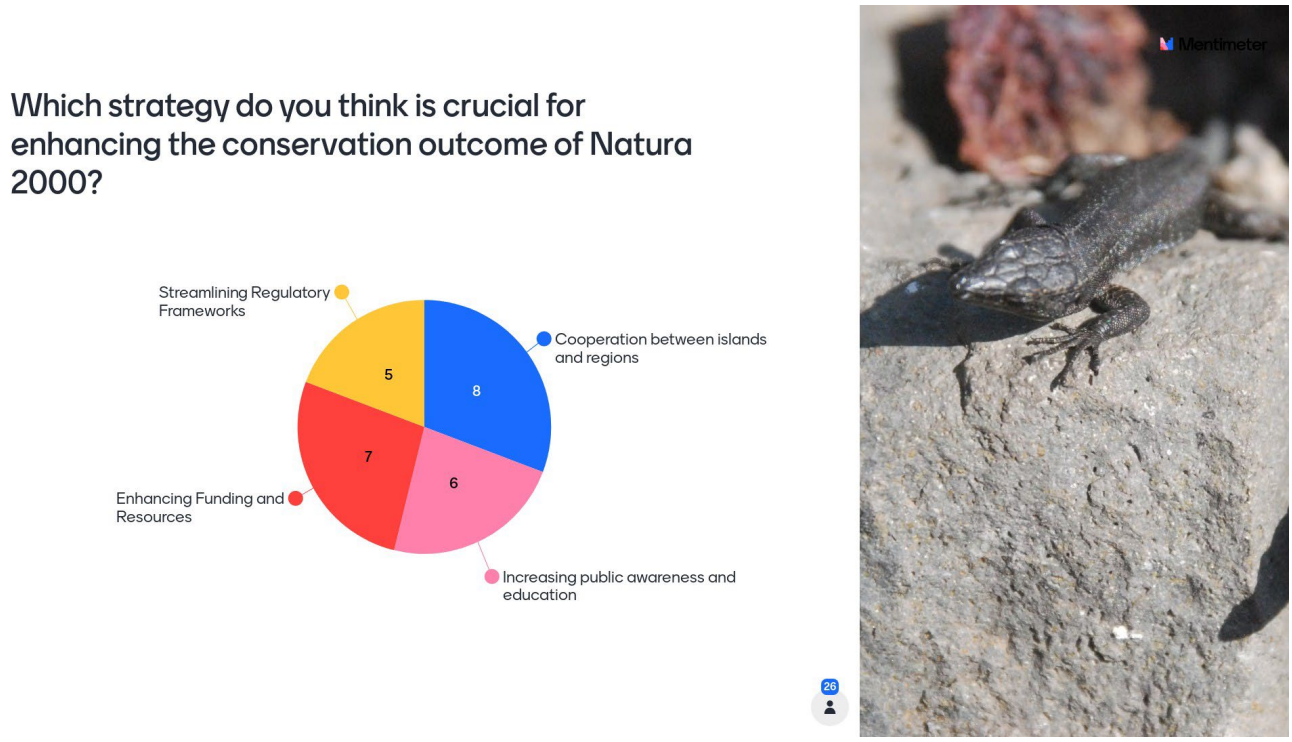
Picture 36: Frank Vassen (DG ENV), Carla Silva Carla Silva (SRAAC, Division of Classified Areas) and Maria Teresa Ferreira (LIFE BEETLES project Manager)

Picture 37: Susana Gonçalves (SRAAC) closing the seminar.

8. Additional information: development of the roadmap

The roadmap for cooperation in the Macaronesian Region will list a series of actions which would address the need for knowledge exchange and transnational cooperation at Biogeographical region level. The roadmap should act as a reminder for the key issues and actions that have been discussed by practitioners in the frame of the biogeographical seminar process, and as a stimulus for new actions to be taken. For some of these actions, the roadmap will identify possible lead organisations and a target timeline. In some cases a lead has been identified, in others a lead will be proposed by the European Commission.

The added value of cooperation and networking among the European network of people working together for Natura 2000 is transfer of knowledge, replication of success and sharing of good practice across all biogeographical regions. To meet this goal, activities from the roadmap can be further developed by, e.g., LIFE projects, cooperation between research bodies or mobilisation of resources from different partners at national or crossborder level (e.g., authorities and agencies in the Member States, NGO and other stakeholders' organisations).



Mentimeter poll 4: Essential steps to improve conservation

Annex 1. Macaronesian Seminar Programme

Wednesday 8th November 2023:

Morning	Chair: Carla Silva	
8.00-9.00	Breakfast	
9.00-9.30	Official welcome & introductions by host and European Commission	
9.30-10.30	Update from DG-ENV, the Natura 2000 Biogeographical Process and the pledge process – Frank Vassen (EC, DG Environment) Inspiration for the previous seminar: Review of the progress since the 1st Macaronesian seminar (Funchal). The Biogeographical Process in the Macaronesian region so far – Rafael Hildago (Ministry for the Ecological Transition and the Demographic Challenge, Spain) LIFE Program updates – João Salgado (ELMEN EEIG – IDOM) Overview of the seminar program – Sandra Mesquita (Mãe d'Água)	
10.30-11.00	Coffee break	
11.00-12.00	Protected area targets: Where are we – inventory, overview, distance to target (EEA, ETC-BE) – Elena Osipova (EEA) Pitch talk from Spain, summarizing issues related to the pledge and approaches – Francisco Guil (Ministry for the Ecological Transition and the Demographic Challenge) What science tells us about the identification of protected areas – Jutta Beher (NaturaConnect) Funding opportunities for conservation – Daniel Verissimo (NaturaConnect)	
12.00–13.30	Lunch	
Afternoon	Chair: Frank Vassen	
13.30-15.00	Conservation status improvement targets: Where are we – inventory, overview, distance to target (EEA, BGP) – Theo v/d Sluis (WENR) Pitch talk from Spain, summarizing issues related to the pledge and approaches – Rafael Hildago (Ministry for the Ecological Transition and the Demographic Challenge) LIFE BEST Program – Alexandru-Ion Craciun (IUCN European Regional office Brussels).	
15.00-15.30	Coffee break	
Parallel sessions		
15.30-17.30	Working Group Session: Pilot action plan for a habitat type of community interest (Laurel forest type, H9360)	Working Group Session: Maintenance of the ecological coherence of the Natura 2000 network in the Macaronesian region
Evening		
19.00-21.00	Buffet dinner & Knowledge Market (Poster session): Presentation of LIFE projects (see Annex 2)	

Thursday 9th November 2023:

Morning	Presentation	
8.00-9.00	Breakfast	
Parallel sessions 1 & 2		
9:00-10:30	Theme 1: Ecological restoration of degraded areas	Theme 2: Favourable Reference Values for habitat types
9:00-9:30	Introductory presentations • Rui Botelho (SPEA Azores) • Sofía Rodríguez Núñez (Canary Islands Government)	Introductory presentations • Jorge Capelo (INIAV) • Antonio Camacho (University of Valencia)
9:30-10:30	Moderated session	Moderated session
10.30-10.45	Coffee break	
Parallel session 3 & 4		
10.45-12.30	Theme 3: Invasive species control	Theme 4 - Conservation measures for fauna species – lessons from the past and ideas for the future
10.45-11.10	Introductory presentations • Duarte Barreto (IFCN IP-RAM) • João Salgado (ELMEN EEIG – IDOM)	Introductory presentations • Dinarte Teixeira (IFCN IP-RAM) • Azucena Martin (SPEA Açores)
11.10-12.30	Moderated session	Moderated session
12.30-14.00	Lunch break	
Afternoon	Chair: Lucía Iglesias Blanco	
14:00-15:00	Reporting back – Working groups Day 1 Reporting back – Thematic sessions 1-4 Following the groups' feedback, there will be time for questions and a plenary discussion.	
15:00-15.45	Carousel: identifying issues to be pursued for the Macaronesian road map	
15:45-16.10	Coffee break	
16.10-16.30	Summarising Carrousel, identifying actions for Macaronesian road map	
16.30-16.45	Questions, discussions, evaluation	
16.45-17.00	Closing session: Vote of thanks, host organisation European Commission	

Friday 10th of November 2023:

All day	Excursion
8.00-9.00	Breakfast
9.00-17.30	Excursion: visit to LIFE IP projects. Departure by bus from the Hotel. Departure of some participants, drop-off by bus at the airport (appr. 16.00) For those remaining, joint dinner at own cost in Angra do Heroísmo

Annex 2. LIFE Projects present at the knowledge market

LIFE CWR

The creation of a wet green infrastructure will allow the economic development of the island through the enhancement of bird watching, a growing activity in the European and American continents, contributing to raise awareness in the community of the importance of environmental valuation.

The project expects to Increase in the biodiversity of the coast of the city of Praia da Vitória; Renaturalize heavily humanized areas; Increase visitation of migratory bird species; Increase socio-economic sustainability of the city; increase visitation (number of visits and length of stay) of international birdwatchers.

Intervention area – wetlands of Terceira, Azores

https://lifecwr.com/index.php/en/

LIFE Terras do Priolo

The objectives of the project are:

- Improve quality of habitat and ensure food resources for the Azores Bullfinch all year;
- Ensure the stability of Azores Bullfinch population;
- Raise awareness among local entities and population, involving them in the conservation of the SPA;
- Promote a sustainable visitation that guarantees the conservation of the SPA in the long term.

Intervention area – S. Miguel, Açores

http://life-terrasdopriolo.spea.pt/pt/

LIFE IP AZORES NATURA

This project covers 24 SAC, 15 SPA and 2 SCI of the Natura 2000 Network in the Azores, seeking to attain a significant contribute for the conservation of species and habitats protected by the Habitats and Bird Directives that underlie their designation.

In concrete, by facilitating the implementation of the regional Prioritized Framework Programme for Natura 2000 (PAF 2014-2020), the project seeks that future assessments show a better conservation or a secure status for 100 % habitats and 50 % more species than those described in unfavourable status on the last reporting to the UE (2013), or species and habitats that could not be evaluated by lack of knowledge and reference information.
The specific objectives include, among others:

- Implement on-field conservation works;
- Implement habitat improvement works foreseen on the Action Plan for the Azores bullfinch *Pyrrhula murina;*
- Promote control/eradication works targeting IAS and monitor their results;
- Fill knowledge gaps on distribution and/or conservation status/threats for specific species/habitats;
- Execute *ex-situ* conservation actions;
- Reinforce the current capability for N2000 surveillance and management;
- Reinforce integration of N2000 conservation goals in other sectoral policies
- Raise awareness of local population and relevant stakeholders.

Intervention area – Açores

https://www.lifeazoresnatura.eu/

LIFE VIDALIA

The main objectives of the project are:

- Improved conservation status of *Azorina vidalii* and *Lotus azoricus* in 3 out of 9 islands of Azores;
- Substantial reinforcement of 20 populations of the target species in Faial, Pico and São Jorge;
- Improved habitat conditions for further expansion and reduction of threats;
- Reinforced technical knowledge available for replication, new methods for safer control of rodents in natural areas, and new guidance for best control of a group of flora species that integrate Macaronesia's Top 100 invaders.
- Improved installed capacity to face future conservation needs in the Azores;
- Generalized awareness raising and behavioural changes in several target audiences, including e.g. schools, NGO, Third Sector organizations, or tourism agents.

Intervention area – Açores

https://www.lifevidalia.eu/

LIFE BEETLES

This project's main long-term aim is to improve the population size, distribution area and conservation status of three endemic species of beetles: *Tarphius floresensis, Pseudanchomenus aptinoides* and *Trechus terrabravensis,* which are classified as Critically Endangered and Endangered (by IUCN) due to habitat quality and quantity loss, as a result from change of land use and invasive alien species (IAS).

Operational objectives will focus on increasing availability of habitat for the target species, both in quantity and quality, with the aim of reversing the observed decline on its populations.

The works will include pilot/demonstration works directed at:

- (Re)conversion of existing *Eucalyptus* plantations to the pre-existing native habitats;
- Re-naturalizing pastureland which is currently publicly owned (in link with increase of its ecosystem services for water retention and provisioning);
- As for improvement of habitat quality, works will embrace both best practices related to common restoration of native habitats as well as demonstration works on prevention, control and containment of IAS and on active dispersal of spores to promote native ferns;
- Given expected changes and threats resulting from climate change, extensive use of pilot nature-based solutions to improve micro-climatic will be essayed

Intervention area – Açores

https://www.lifebeetlesazores.com/en/

LIFE NIEBLAS

The objectives of the project are:

- Reforesting degraded areas with native plants using water from the different types of water collectors and different methods of irrigation.
- To increase the vegetation coverage, thus achieving greater water filtration, decrease runoff, and increase the soil water absorption capacity. Hence, increasing environmental quality of the area (increasing biodiversity and reducing carbon footprint).
- To compare the efficiency of all water collectors and irrigation systems. 100% of the water needed will be provided by the water collectors.

- Create synergies and collaboration between local and European administrative bodies, but also community awareness on the relevance of forest cover regarding water resources; showing the environmental importance of its conservation, recovery, maintenance and extension as a resiliency tool in climate change mitigation.
- Generate resources to promote the project and the replication of the applied methodologies.

Intervention area – Canary Islands, Spain (mainland), Portugal (mainland)

https://www.lifenieblas.com/pt-pt/o-projeto

LIFE IP CLIMAZ

Although covering all PRAC objectives, the LIFE IP CLIMAZ project focuses on ensuring the implementation of a group of measures whose objective is related to the achievement of specific and transversal key guidelines for adaptation and mitigation to climate change.

In order to achieve PRAC goals, the LIFE IP CLIMAZ project, to be implemented in the Autonomous Region of the Azores, is based on work combined with all PRAC Strategic Objectives (SO), and foresees:

- Increase knowledge and information about climate change and its effects (SO1);
- Promote research, development of solutions and increased capacity to deal with adaptation and mitigation needs (SO2);
- Improve monitoring and information capacity (SO3);
- Promote the transition to a regional economy based on low carbon emissions (SO4);
- Promote a sustainable path to reducing greenhouse gas (GHG) emissions (SO5);
- Promote the integration of adaptation and mitigation objectives into other sectoral policies (SO9/SO6);
- Strengthen territorial resistance to climate change vulnerabilities and risks (SO7);
- Promote adaptation in all strategic sectors (SO8);
- Promote the integration of adaptation and mitigation objectives into other sectoral policies (SO9/SO6);
- Raise society's awareness of the main challenges posed by climate change, contributing to increasing climate governance and the action of individuals and organizations (SO10);
- Promote and facilitate the involvement of local communities and stakeholders in identifying and defining roadmaps for adaptation (SO11).

Intervention area – Açores

https://www.lifeipclimaz.eu/

LIFE Snails

The project is designed for the conservation of three snail species endemic to Sta. Maria Island, Açores: *Plutonia angulosa, Oxychilus agostinhoi* (Criticaly Endangered) e *Leptaxis minor* (Endangered).

The project will promote habitat restoration for these species as well as the control of IAS. It will also implement instruments for conservation support in marginal areas and promote voluntary work.

The main aim is to promote long term habitat restoration in order to increase its availability, reduce its fragmentation and increase its quality, by the promotion of a mosaic interconnected by ecological corridors.

This corridors will connect high quality hot spot habitats through water courses edges both in public and private land.

Intervention area – Açores

https://www.lifesnails.eu/

LIFE GARACHICO

LIFE Garachico proposes the development of methodologies for the creation of a Flexible Adaptation Strategic Framework for the coastal municipalities of Macaronesia, based on the evaluation of acceptable risk levels and specific interventions at the local level, in order to increase resilience of these areas against current and future extreme coastal events due to climate change.

The main goals of the project are to:

- Standardize a coastal flood risk analysis procedure by CC in urban areas in a MEAF
- Provide tools to determine acceptable risk levels for urban communities
- Implement in Garachico and replicate in Praia da Vitória and Puerto de la Cruz adaptation measures that, together with early warning systems, reduce risk
- Develop technical recommendations and management tools in a MEAF to reduce the risk of flooding and for its implementation in Macaronesia
- Develop new management policies and market products together with the various stakeholders to manage the remaining risk and increase employability

Intervention area – Açores e Canary Islands

https://lifegarachico.eu/pt/

LIFE Natura@night

The main objectives of the project are:

- To study the impact of light pollution on biodiversity (seabirds, bats and moths)
- To map the light pollution in the Natura 2000 sites of Macaronesia
- To reduce light pollution in two municipalities and develop guidelines for public lights in the remaining municipalities
- To develop pilot solutions for lights in fishing boats
- Develop public awareness in the three archipelagos

Intervention area – Madeira, Açores and Canary Islands

https://spea.pt/projetos/life-naturanight/

LIFE Pterodromas4future

The main objectives of the project are:

- To improve the conservation status of the two *Pterodroma* species endemic to the Madeira archipelago (*Pterodroma madeira* and *P. deserta*), to increase the resilience of its habitat to climatic changes and subsequent natural disasters associated to extreme climatic events,
- To reduce the impact alien predators and light population in the mortality of both adult and young birds.

Intervention area – Madeira

https://spea.pt/projetos/life-pterodromas4future/

Annex 3. List of registered participants

Sorted by surname (alphabetical order)

Surname	First name	Organisation	Email
Abreu	Ricardo	Secretaria Regional do Ambiente e Alterações Climáticas	ricardo.jf.abreu@azores.gov.pt
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Annex 4. Evaluation survey

Seminar evaluation (summary)

In total 38 people attended the seminar. 26 responses were received in the evaluation survey and are included here (response rate = 68 %). In the evaluation the delegates could score from 1 – 5 for various parts of the seminar. The answer range varied from 1 – 5. All aspects of the seminar were positively rated, with scores ranging from 4,15 to 4,50 out of 5 (Table 1). Most positive rated were the 'overall organisation, the work presentations, opening and movies'. The average scores are presented in the table below:

Table 1: Overall rating of the Macaronesian Biogeographical Seminar

Issue	**Average score** (best score = 5)
Content of presentations	4,46
Usefulness of the information provided	4,31
Organisation of the seminar	4,50
Quality of discussions in break-out group	4,15

Asked for their response, on how to describe the seminar, most quoted words were Exchange, learning, communication, cooperation and networking.

Picture 38: Impression from participants in Mentimeter of the Macaronesian seminar.

Table 2 presents the overall scores given to the eight scoring questions. Only 4 times a score was given below 4, which can be viewed as an excellent result.

Table 2: Overall scores for all questions summarized.

Scoring	**Total**
1	1
2	0
3	3
4	56
5	51

Participants were also asked to indicate one issue they felt needed to be improved during the seminar. Several comments focus on the possibility expanding the number of participants, to include a wider range of practitioners and expertise. Others would have appreciated more time for questions and more focus during the discussions, eventually extending the seminar for one more day. Some more practical suggestions regarding the seminar organization were also made—apparently, the Portuguese preference for wine instead of beer made someone unhappy! Below are the responses given:

- More transversal approach, with stakeholders from other sectors that have a direct/indirect Impact in Natura2000 in Macaronesia.
- Expand the participation and more variety in speakers
- Presence of a higher number of decision makers
- Involve more professionals (multidisciplinary)
- More participants
- Hands on! Species reintroduction or tree planting during the seminar
- More time for Q&A
- More focused groups
- More time for discussion groups or less questions to avoid staying on a superficial level. Maybe more instructions on what to cover (pros and cons of different ideas, thinking of trade-offs)
- Program very intense, one more day to help that
- Provide information at an earlier stage
- Provide template for the ppt slides with more available space to write in!
- Field trip at the middle of the seminar
- Provide a list of attendees
- More beer!