



**CONHABIT ANDALUCÍA AFTER-LIFE CONSERVATION AND  
COMMUNICATION PLAN**

Drafted in accordance with the LIFE13 NAT/es/000586 Subsidy Agreement,  
actions F5 and F6.





Conservación y mejora en habitats  
prioritarios en el litoral andaluz  
Preservation and improvement in priority  
habitats on the Andalusian coast

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## 1. INTRODUCTION

The LIFE CONHABIT ANDALUCÍA "Conservation and improvement in priority habitats on the Andalusian coast" project (LIFE+13 NAT/ES/000586) began on 1 June 2014, following its approval by the European Commission. This project is a five-year-long LIFE + NATURE project, coordinated by the Ministry of Agriculture, Fisheries, Livestock, and Sustainable Development, whose main objective has been to promote the improvement and conservation of priority habitats of Directive 92/43/EEC (Habitats Directive) present in Sites of Community Importance (SCI) or Special Areas of Conservation (SAC) on the Andalusian coast. With a budget of 2,654,269 million euros, 10 habitats of priority interest and 15 SCIs/SACs have directly benefited from this project (Table 1 and Table 2 respectively), along with 12 plant species in Annex II of the Habitats Directive.

**Table 1.** Priority habitats of Community interest (HIC) that have benefited from LIFE CONHABIT ANDALUCÍA.

| No. | CODE | HIC NAME  |
|-----|------|---|
| 1   | 1150 | 1150 Coastal lagoons (*)  |
| 2   | 1510 | 1510 Mediterranean salt steppes ( <i>Limonietalia</i> ) (*)                                 |
| 3   | 2130 | 2130 Fixed coastal dunes with herbaceous vegetation ('grey dunes') (*)                      |
| 4   | 2150 | 2150 Atlantic decalcified fixed dunes ( <i>Calluno-Ulicetea</i> )                           |
| 5   | 2250 | 2250 Coastal dunes with <i>Juniperus</i> spp. (*)   |
| 6   | 2270 | 2270 Wooded dunes with <i>Pinus pinea</i> and/or <i>Pinus pinaster</i> (*)                  |
| 7   | 3170 | 3170 Mediterranean temporary ponds (*)  |
| 8   | 4020 | 4020 Temperate Atlantic wet heaths with <i>Erica ciliaris</i> and <i>Erica tetralix</i> (*) |
| 9   | 5220 | 5220 Arborescent matorral with <i>Ziziphus</i> (*)  |
| 10  | 6220 | 6220 Pseudo-steppe with grasses and annuals of the <i>Thero-Brachypodietea</i> (*)          |

**Table 2.** Natura 2000 spaces eligible for LIFE CONHABIT ANDALUCÍA.

| No. | SCI        | SCI NAME  | HIC* benefiting               |
|-----|------------|---|-------------------------------|
| 1   | ES6150006: | Marismas Río Piedras y Flecha del Rompido             | 2130                          |
| 2   | ES6150001: | Laguna del Portil                                     | 1150,2130,2150,2250,2270,3170 |
| 3   | ES0000025: | Marismas del Odiel                                    | 2130                          |
| 4   | ES6150004: | Laguna de Palos y las Madres                          | 1150,2250,2270,4020           |
| 5   | ES6150012: | Dehesa del Estero y Montes de Moguer                  | 1150,2150,2270,3170,4020      |
| 6   | ES6150009: | Doñana Norte y Oeste                                  | 2150,2270,3170,4020,6220      |
| 7   | ES0000024: | Doñana  | 1150,2150,2250,2270,3170.4020 |
| 8   | ES6120018: | Pinar de Roche  | 2250.2270                     |
| 9   | ES6120017: | Punta de Trafalgar                                    | 1150,2130,2250,2270           |
| 10  | ES6120008: | La Breña y Marismas de Barbate                        | 1150,2250,2270,6220           |
| 11  | ES0000337: | Estrecho  | 1150,1510,2250,2270,6220      |
| 12  | ES6170002: | Acantilados de Maro Cerro Gordo                       | 5220.6220                     |
| 13  | ES0000048: | Punta Entinas-Sabinar                                 | 1510.2250                     |
| 14  | ES6110006: | Ramblas de Gérgal, Tabernas y Sur de Sierra Alhamilla | 1510.5220                     |
| 15  | ES6110005: | Sierra de Cabrera-Bédar                               | 1510.6220                     |

The project has worked on four axes:

1. In situ restoration and improvement actions for target habitats to meet urgent conservation needs.
2. Development of management documents on good silvicultural practices that help decision-making in forestry practices being carried out in forest areas.

3. Strengthening society's role in conserving coastal habitats, through training, raising awareness, and volunteering.
4. Dissemination of information about the project and exchange of experiences with similar projects.

Various public and private entities took part, including other Councils, City Councils, private owners, the Andalucía Coastal Authority and the Doñana Biological Station (CSIC). Along with the Environment and Water Agency as a beneficiary partner, these entities helped the coordinating partner, the Department of Agriculture, Livestock, Fisheries and Sustainable Development (hereinafter CAGPDS), to carry out all the actions and achieve the established objectives.

The most significant challenges faced by LIFE CONHABIT ANDALUCÍA relating to conservation activities include those arising in relation the control or eradication of invasive alien species, such as *Oenothera drummondii* in Marismas del Odiel; the improvement of the 4020 "Atlantic wet heaths" priority habitat in Doñana (Huelva) or of the 5220 "Arborescent mattoral with Ziziphus" priority habitat in Ramblas de Gérgal, Tabernas and Sur de Sierra Alhamilla (Almeria). The development of management documents included the development of 8 manuals on good forestry practices for the conservation of habitats and unique species. Meanwhile, communication and development of coastal habitats included work with the different strategic sectors identified, especially the local Administration, training for

future forestry professionals and reaching the educational community with an attractive and successful training programme. Finally, the dissemination of the project's methodologies and main results has been core throughout the project. This has included articles published in freely accessible international and national journals, participation through both oral communications and posters at specialised conferences, in addition to all the informative pieces in local and regional newsletters. Finally, the need to generate knowledge, seek partnerships and enhance education were some of the conclusions of the technical "Conservation and Restoration of Coastal Habitats" workshop. The workshop involved 15 projects co-financed mostly by the LIFE tool, 70 participants from different Spanish regions (6 Autonomous Communities, in addition to Andalucía) and the Portuguese region of Madeira, technicians, researchers and managers of different relevant administrations, public and private institutions, educational centres, NGOs and other organisations with interests in the coastal area.

This AFTERLIFE CONSERVATION AND COMMUNICATION PLAN (hereinafter, AfterLIFE Conhabit Plan), responds to what is established in the actions "F.5 Development of a conservation project after LIFE" and "F.6. Communication plan after LIFE", the "Conservation and improvement of priority habitats on the Andalusian coast" project (LIFE13 NAT/ES/000586 Conhabit Andalucía).

Even though the technical proposal envisaged the separate editing of a Conservation Plan and a Communication Plan, in the period following the

implementation of LIFE CONHABIT ANDALUCÍA it was decided that a single plan integrating both areas be drafted. This was decided due to the existing synergy between the various plans and programmes that will provide continuity to the project, as well as the complementary nature of the two Action Plans, once communication was recognised as a true conservation tool, as a favourable social perception of planned conservation actions is absolutely essential for a good end result and being able to maintain habitats and spaces in a good state of conservation in the long term. This synergy has been proven in the development of some of the conservation actions of LIFE CONHABIT ANDALUCÍA. For example, when actions are carried out accompanied by communication and reporting of their objectives, they had better results than those cases in which there was no specific communication, or communication occurred a posteriori.

The AfterLIFE Conhabit Plan aims to contribute to the LIFE Programme objective to achieve effective long-term conservation of natural areas in the European Union and, particularly, those included in Natura 2000. It is justified in the need to maintain the lines of work developed during the implementation of the project, in order to perpetuate the positive effects of its actions, referring both to the favourable conservation status achieved in priority habitats as well as the process of social transformation driven by communication and participation. It therefore aims to consolidate the achievements in those spaces where action has been taken, extending them to other territories on the Andalusian coast, on the basis of the general objective and the strategic lines of action that have



marked the development of LIFE CONHABIT ANDALUCÍA.

In addition, from a general point of view, it aims to contribute to the implementation of the existing Management Plans in Natura 2000 areas of the Andalusian coast.

## **2. CONSERVATION AND COMMUNICATION OBJECTIVES**

The conservation of coastal areas and their biodiversity depends on reversing many of the actions associated with and related to the social context, such as the low public opinion of their own asset, the low valuation of environmental services compared to other productive activities and the simple ignorance of the environmental richness, which is invaluable due the evolutionary history, uniqueness and rarity of many of the existing habitats on the Andalusian coast. For this reason, LIFE CONHABIT ANDALUCÍA has worked hard to strengthen the role of society in the conservation of coastal habitats. To this end, the Communication and Awareness Plan was created, which indicated the strategic priorities and lines, as well as the key sectors that have been worked with over the past few years. All the objectives established in the Communication and Awareness Plan also appear in AfterLIFE Conhabit, strengthened by the work carried out so far and deepening and broadening the network of social actors involved in the conservation objectives achieved to date. Education and raising awareness amongst school children and future professionals regarding the management and conservation of habitats, information and advice

from local administrations and information and technical training for companies whose actions directly impact the quality of the habitats will form a significant part of the communication actions in the AfterLIFE Conhabit framework.

To summarise, the general medium- and long-term objectives are:

1. To maintain and improve the favourable conservation status of habitats benefiting from LIFE CONHABIT ANDALUCÍA over this project.
2. Maintain effective communication and dissemination to increase care for the habitats and Natura 2000.

The specific objectives include:

1. Encourage natural regeneration of habitats through the maintenance or improvement of infrastructures for managing public use, or by carrying out revegetation and improvement activities.
2. Fight against invasive alien species when these threaten habitats and/or priority or threatened species.
3. Control competing species when these threaten priority or threatened habitats and/or species to maintain the conservation status

achieved during LIFE CONHABIT ANDALUCÍA.

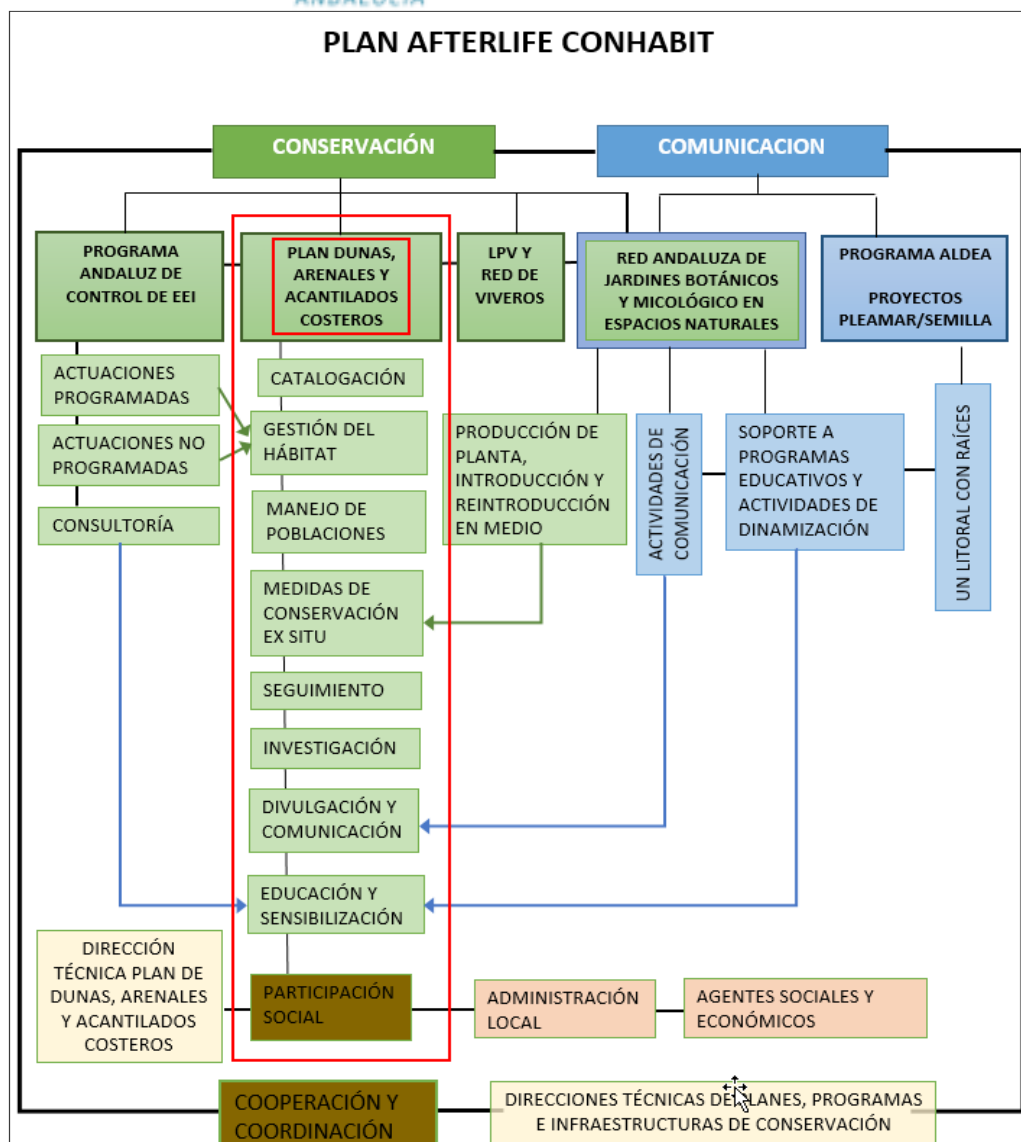
4. Implement the silvicultural guidance manuals for coastal forest spaces.
5. Disseminate knowledge of habitats and their importance for biodiversity conservation.
6. Continue educating in order to conserve coastal habitats and species.
7. Continue training the various strategic sectors that LIFE CONHABIT ANDALUCÍA is aimed at.
8. Continue raising awareness of strategic sectors that LIFE CONHABIT ANDALUCÍA is aimed at.
9. Promote social participation in favour of the conservation of habitats and Natura 2000.

### **3. CONSERVATION AND COMMUNICATION MEASURES AND ACTIONS**

#### **3.1 OPERATIONAL FRAMEWORK**

Currently, the CAGPDS is developing different plans and programmes whose objectives are explicitly aligned with the general and specific objectives of LIFE CONHABIT ANDALUCÍA. This scenario allows a framework for cooperation to be established between them, coordinated by the Technical Management of LIFE CONHABIT ANDALUCÍA, to continue with all lines of work developed by the project over its five years of implementation.

This framework for cooperation between plans, programmes and infrastructures regarding conservation and communication that enhance existing synergies to develop actions jointly, constitutes the operational framework of this AfterLIFE Conhabit Plan (Figure 1).



**Figure 1.** Operational framework of the AfterLIFE Conhabit Plan.

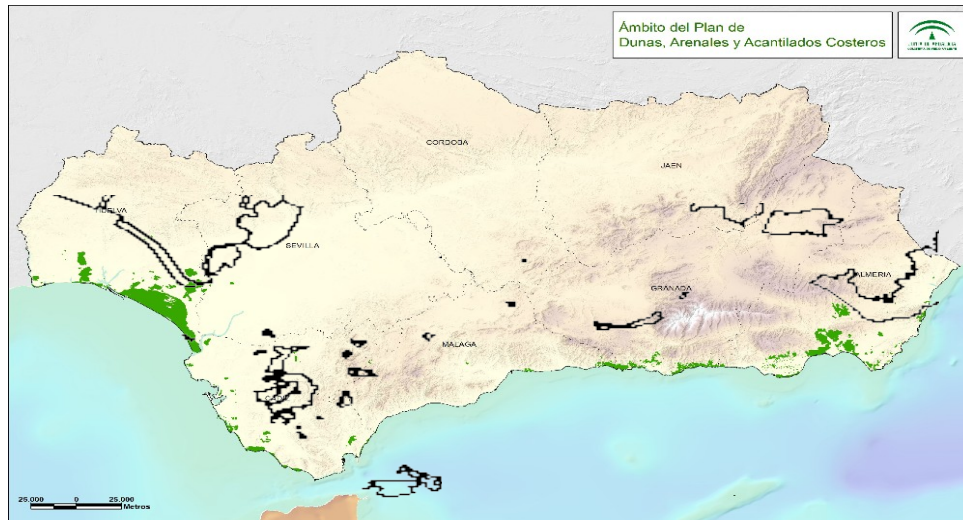
The following describes each of the plans or programmes that will implement the AfterLIFE Conhabit Plan.

### 3.1.1 PLAN FOR THE RECOVERY AND CONSERVATION OF SPECIES OF DUNES, SANDY AREAS AND COASTAL CLIFFS.

From an operational point of view, the main axis of this AfterLIFE Conhabit Plan is the "Plan for the Recovery and Conservation of Species of Dunes, Sandy Areas and Coastal Cliffs" (hereinafter Dunes Plan) approved by Agreement of 13 March 2012, by the Governing Council, which approves the plans for the recovery and conservation of certain protected wildlife species and habitats. The Recovery and Conservation Plans are implemented through Action Programmes, which establish the actions needed for the development of the measures provided for in the corresponding Plans. All actions relating to the conservation of target species and their habitats are channelled through the Action Programmes of the Dunes Plan, the first approved by Order of 20 May 2015, continuing each and every one of the lines of work undertaken by LIFE CONHABIT ANDALUCÍA.

The Dunes Plan focuses on priority and/or threatened species on the Andalusian coast. This means that its scope not only includes each and every one of the areas of action of LIFE CONHABIT ANDALUCÍA (Figure 1), as a result of which the target habitats of LIFE CONHABIT ANDALUCÍA are the habitats where many of the species referred to in the Dunes Plan appear, but that many other Natura 2000 habitats and spaces that shelter or could potentially shelter populations of the species listed in the Dunes

Plan (Tables 2 and 3) also form part of the sphere of action.



**Figure 2.** Scope of the Dunes Plan. All the action areas and habitats benefiting directly from LIFE CONHABIT ANDALUCÍA are part of the scope of implementation of the Dunes Plan

**Table 3.** Habitats of community interest included in the scope of action

| NAME   | LIFE<br>CONHABIT |
|--|------------------|
| 1150 Coastal lagoons (*)   | Yes              |
| 1240 Vegetated sea cliffs of the Mediterranean coasts with endemic <i>Limonium spp.</i>              | No               |
| 1510 Mediterranean salt steppes ( <i>Limnietalia</i> ) (*)   | Yes              |
| 2110 Embryonic shifting dunes  | No               |
| 2120 Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ('white dunes')               | No               |
| 2130 Fixed coastal dunes with herbaceous vegetation ('grey dunes') (*)                               | Yes              |
| 2150 Atlantic decalcified fixed dunes ( <i>Calluno-Ulicetea</i> ) (*)                                | Yes              |
| 2190 Humid dune slacks   | No               |
| 2210 <i>Crucianellion maritimae</i> fixed beach dunes  | No               |
| 2230 <i>Malcomietalia</i> dune grasslands  | No               |
| 2250 Coastal dunes with <i>Juniperus spp.</i> (*)  | Yes              |
| 2260 <i>Cisto-Lavenduleta</i> dune sclerophyllous scrubs   | No               |
| 2270 Wooded dunes with <i>Pinus pinea</i> and/or <i>Pinus pinaster</i> (*)                           | Yes              |
| 3170 Mediterranean temporary ponds (*)   | Yes              |
| 5330 Thermo-Mediterranean and pre-desert scrub   | No               |
| 4020 Temperate Atlantic wet heaths with <i>Erica ciliaris</i> and <i>Erica tetralix</i> (*)          | Yes              |
| 5220 Arborescent matorral with <i>Ziziphus</i> (*)   | Yes              |
| 6220 Pseudo-steppe with grasses and annuals of the <i>Thero-Brachypodietea</i> (*)                   | Yes              |
| 7210 Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> (*) | No               |



**Table 4.** Natura 2000 areas included in the scope of action.

| PROVINCE | ID | NATURA 2000 SPACE   | FIGURE | LIFE<br>CONHABIT |
|----------|----|---|--------|------------------|
| HUELVA   | 1  | Doñana  | SAC    | Yes              |
|          | 2  | Doñana Norte y Oeste  | SAC    | Yes              |
|          | 3  | Dehesa del Estero y Montes de Moguer                          | SCI    | Yes              |
|          | 4  | Lagunas de Palos y Las Madres                                 | SCI    | Yes              |
|          | 5  | Estero de Domingo Rubio                                       | SCI    | NO               |
|          | 6  | Marismas del Odiel  | SCI    | Yes              |
|          | 7  | Enebrales de Punta Umbría                                     | SCI    | NO               |
|          | 8  | Laguna del Portil   | SCI    | Yes              |
|          | 9  | Marismas del Río Piedras y Flecha del Rompido                 | SCI    | Yes              |
|          | 10 | Marismas de Isla Cristina                                     | SCI    | NO               |
|          | 11 | Isla de San Bruno   | SCI    | NO               |
| CÁDIZ    | 12 | Bahía de Cádiz  | SAC    | NO               |
|          | 13 | Pinar de Roche  | SCI    | Yes              |
|          | 14 | Punta de Trafalgar  | SCI    | Yes              |
|          | 15 | Breña y Marismas del Barbate                                  | SAC    | Yes              |
|          | 16 | Estrecho  | SAC    | Yes              |
|          | 17 | Marismas del Río Palmones                                     | SAC    | NO               |
| MÁLAGA   | 18 | Acantilados de Maro-Cerro Gordo                               | SAC    | Yes              |
| GRANADA  | 19 | Acantilados de Maro-Cerro Gordo                               | SAC    | Yes              |
|          | 20 | Acantilados y fondos marinos de la Punta de la Mona           | SAC    | NO               |
|          | 21 | Acantilados y fondos marinos de Tesorillo-Salobreña           | SAC    | NO               |
|          | 22 | Acantilados y fondos marinos de Calahonda-Castell de Ferro    | SAC    | NO               |
| ALMERIA  | 23 | Sierra de Gádor y Énix  | SAC    | NO               |
|          | 24 | Punta Entinas-Sabinar   | SAC    | Yes              |
|          | 25 | Ramblas de Gérgal, Tabernas y Sur de S <sup>a</sup> Alhamilla | SAC    | Yes              |
|          | 26 | Cabo de Gata  | SAC    | NO               |
|          | 27 | Sierra de Cabrera-Bédar                                       | SAC    | Yes              |

The Dunes Plan's strategic action lines are:

1. Cataloguing. Determine the criteria for establishing at what point a species should be reassessed.
2. Habitat management. Develop tools and actions that will improve the state of conservation of habitats.
3. Management of populations. Improve the conservation status of the different population centres.
4. Ex situ conservation measures. Maintain the greater genetic variability of the populations and develop protocols related to the reproduction of species for reintroductions and reinforcements of the population.
5. Monitoring. Monitor the conservation status of the species and their habitats as well as the actions taken to improve their conservation status.
6. Research. Promote studies to increase knowledge of the target species and their habitats.
7. Dissemination and communication. Report on objectives and progress to the various sectors of society.
8. Education and awareness-raising. Ensure that society is involved and recognises the conservation objectives.
9. Social participation. Increase the participation of strategic sectors involved in the Dunes Plan.
10. Cooperation and coordination. Produce synergies between other selected national and international projects and the Dunes Plan.

Through the Dunes Plan, all necessary technical support will be provided

to continue monitoring the actions undertaken in LIFE CONHABIT ANDALUCÍA, determining necessary priorities for conservation and communication to comply with the objectives of the AfterLIFE Conhabit Plan and execute some of the activities identified as necessary.

### **3.1.2 ANDALUSIAN PROGRAMME FOR THE CONTROL OF INVASIVE ALIEN SPECIES (PACEEI).**

The Andalusian Programme for the Control of Invasive Alien Species (PACEEI) constitutes a fundamental source of support, as, along with the Dunes Plan, it will continue carrying out all actions related to invasive alien species (IAS), including the actions of greater difficulty faced by LIFE CONHABIT ANDALUCÍA.

This programme is based on three pillars:

- i. Prevention, early warning and regulations as fundamental axes.
- ii. Actions on the ground.
- iii. Informing and raising awareness amongst citizens and the sectors involved.

### **3.1.3 ANDALUSIAN NETWORK OF BOTANICAL AND MYCOLOGICAL GARDENS IN NATURAL SPACES (RED).**

For its part, the Andalusian Network of Botanical and Mycological Gardens in Natural Spaces plays a dual, essential role as it participates in both the field of conservation, as well as the sphere of education, developing its work through three programmes:

1. Biodiversity conservation, through locating and monitoring flora, the representation of fungi and plants in the Andalusian biogeographical sectors, the collection of seeds and their propagules, the maintenance of collections of genetic conservation and rescues, and support for the Recovery and Conservation Plans for Endangered Species.
2. Conservation education, with the development of training courses, activities and workshops, guided tours, teacher training and dissemination of Andalucía's floristic values, with raising awareness being very significant in creating favourable attitudes to conservation.
3. Phyto-touristic dissemination through visitors' free access to the gardens, where they can enjoy and learn about the flora, fungi and vegetation in Andalusia and its habitats, as well as the actions being taken to conserve these.

RED's collaboration in LIFE CONHABIT ANDALUCÍA has been fundamental, focusing many of the actions related to training, sectoral meetings, or educational programmes on the botanical gardens located on the coast, within the framework of the LIFE CONHABIT ANDALUCÍA: Un Litoral con Raíces (A Coast with Roots) project. These magnificent infrastructures disseminating the values and displaying live representations of the species and habitats covered by LIFE CONHABIT ANDALUCÍA will continue to play a key role, hosting the travelling exhibition, meetings or continuing A Coast with Roots.

#### 3.1.4 LABORATORY OF PLANT PROPAGATION.

The Laboratory of Plant Propagation (LPV) is essential for the implementation of plant restoration actions. It aims to support the work of conserving endangered flora and developing lines for the conservation and

propagation of groups and species of interest. The laboratory has been working on all flora and habitat restoration projects that have been carried out at both at provincial and the regional level for years (including LIFE CONHABIT ANDALUCÍA), with the catalogued and most threatened species being those that influence the objectives and priorities for action. In this way, the work carried out by the LPV includes the collection of species, the storage of germplasm, the analysis of seeds and propagation.

All the AfterLIFE Conhabit actions carried out in relation to improving the habitat on the basis of population reinforcements will have the support of the LPV and Red de Viveros.

### **3.1.5 RED DE VIVEROS.**

Along with the LPV, Red de Viveros (Network of Nurseries) complements the LPV's work in the production of native wild species to restore and recover the most degraded forest areas.

### **3.1.6 ALDEA PROGRAMME.**

Operating for over 25 years, the ALDEA Educational Programme is an Environmental Education Programme for the Educational Community, promoted by the Department of Education and Sports and the Department of Agriculture, Livestock, Fisheries and Sustainable Development, whose objective is to contribute to a society that is more environmentally friendly, just and supportive, allowing the achievement of comprehensive education that shares and falls within the four pillars of education proposed by UNESCO: Learning to be, Learning to live together, Learning to know and Learning to do.

The “A Coast with Roots” project is included within the framework of this programme. Over three years, this project has been carried out by LIFE CONHABIT ANDALUCÍA to raise awareness of Natura 2000, coastal habitats, the ecosystem values of these, as well as the importance of their conservation. Through this project, it has worked directly with around 6,000 students. Through the ALDEA Programme, this programme will be maintained, along with all the materials created for its development.

### **3.1.7 ANDALUCÍA'S ENVIRONMENTAL INFORMATION NETWORK (REDIAM).**

REDIAM's aim is to integrate, standardise and disseminate all information on the Andalusian environment, through a range of producers of environmental information in the Autonomous Community. It was created by Law 7/2007, of 9 July, on Integrated Management of Environmental Quality (GICA) and ordered by Decree 347/2011, of 22 November, which regulates the structure and functioning of Andalusia's Environmental Information Network and access to environmental information.

Through REDIAM, the results of the monitoring and actions carried out within the AfterLIFE Conhabit Plan framework will be integrated and disseminated.

### **3.1.8 PLAN FOR RESTORING THE LAND AFFECTED BY THE FIRE OF DOÑANA (LAS PEÑUELAS 2017) (TT.MM. MOGUER, LUCENA DEL PUERTO Y ALMONTE).**

The fire that began on 24 June 2017 in Las Peñuelas de Moguer (province of Huelva) burnt over 8,000 hectares, mainly within the Doñana Natural Park and, to a lesser extent, forested areas belonging to the Grupo de

Montes Ordenados de Moguer, affecting areas of high ecological and natural value of Natura 2000, as well as the SCIs/SACs of Laguna de Palos y las Madres, Dehesa del Estero y Montes de Moguer, Doñana Norte y Oeste y Doñana. These spaces all benefited from LIFE CONHABIT ANDALUCÍA. The fire affected populations of several species of flora under threat and of interest, as well as numerous habitats of Community interest, including all the priority habitats benefited by LIFE CONHABIT ANDALUCÍA present in the area. The amount of land burned in the Las Peñuelas fire and, in particular, the high environmental value of the place in question make this forest fire one of the most serious socio-environmental events that Andalucía has experienced in recent years.

The objectives established by the Restoration Plan are as follows:

1. Environmentally recover the affected area, paying particular attention to the conservation of biodiversity and to the protection of Habitats of Community Interest (HICs).
2. Restore and reinforce environmental services in the area, for use of its resources (mainly pine, timber, fuelwood and hunting) and its social and recreational (landscape, recreation) and environmental (habitats of relevant species, etc.) uses.
3. Integrate measures for adapting to Global Change and, specifically, to climate change, producing a territory that is better adapted to foreseeable future circumstances.
4. Integrate the actions included in restoration into a framework for

adaptive management.

5. Raise public awareness of the need to undertake Restoration Plans and their environmental implications. Communicate with and engage citizens in general, specifically at the local level, in the content of the Restoration Plan, incorporating volunteering and citizen participation actions.

6. Integrate a process of effective participation into the procedure of approving the Plan.

Through this Restoration Plan, the necessary actions will be taken to restore habitats that were affected by the fire.



### 3.2 PRIORITY ACTIONS OF THE AfterLIFE Conhabit

The following table details the actions that will be developed over a time period of at least five years.

**Table 5.** AfterLIFE Conhabit Plan Actions.

| AfterLIFE Aims   | Actions  | Programme/<br>Project           | Funding<br>Mechanism                             |
|--|--|---------------------------------|--|
| 1. Encourage natural regeneration of habitats through the maintenance or improvement of infrastructures for managing public use, or by carrying out revegetation and improvement activities. | Monitor and maintain the infrastructures of Public Use created by LIFE CONHABIT ANDALUSIA.   | Dunes Plan                      | Management Programme and Complementary Financing |
|  | Monitoring and actions to reinforce populations with structural species or characteristics of the habitats to improve their conservation status. | Dunes Plan, LVP, Red de Viveros | Management Programme and Complementary Financing |

| AfterLIFE Aims  | Actions  | Programme/<br>Project                 | Funding<br>Mechanism  |
|---|--|---------------------------------------|---|
|   | Advise the City Councils on the conservation of habitats and species.  | Dunes Plan, Botanical Gardens Network | Managemen<br>t Programme  |
|   | Establish guiding criteria for the drafting of projects in the natural environment that may affect coastal habitats and species.   | Dunes Plan, Botanical Gardens Network | Managemen<br>t Programme  |
| 2. Fight against invasive alien species when these threaten habitats and/or priority or threatened species. | Periodically carry out the actions necessary for the control of IAS in the areas of action and continue monitoring this situation. | IAS Programme, Dunes Plan             | Managemen<br>t Programme<br>and<br>Complement<br>ary<br>Financing |
|   | Encourage the use of native species rather than exotic species with invasive potential.  | Dunes Plan, Botanical Gardens Network | Managemen<br>t Programme  |

| AfterLIFE Aims   | Actions   | Programme/<br>Project                 | Funding<br>Mechanism                             |
|--|---|---------------------------------------|--|
|  | Advice on landscaping works and training for companies and town hall technical workers.   | Dunes Plan, Botanical Gardens Network | Management Programme                             |
| 3. Control competing species when these threaten priority or threatened habitats and/or species to maintain the conservation status achieved during LIFE CONHABIT ANDALUCÍA. | Check for the resurgence of <i>Retama monosperma</i> and <i>Pinus pinaster</i> in Flecha del Rompido and Pinares de la Breña respectively, and monitor these. | Dunes Plan                            | Management Programme and Complementary Financing |
|  | Monitor the state of conservation of habitats subject to actions to avoid the appearance and densification of competing species.                              | Dunes Plan                            | Management Programme and Complementary Financing |
| 4. Implement the silvicultural guidance manuals for each   | Present the manuals and disseminate them amongst technical workers and target sectors.  | Dunes Plan                            | Management Programme                             |

| AfterLIFE Aims   | Actions   | Programme/<br>Project  | Funding<br>Mechanism     |
|--|---|--|--------------------------|
| protected area.  | Update the information and evaluation of the adequacy of the documents.                           | Dunes Plan, Botanical Gardens Network                              | Managemen<br>t Programme |
|  | Monitor controlled and experimental actions.  | Dunes Plan, Network of Gardens and Peñuelas Fire Restoration Plan. | Managemen<br>t Programme |
| 5. Disseminate knowledge of habitats and their importance for biodiversity conservation. | Update and publish results and information improvement  | Dunes Plan, REDIAM   | Managemen<br>t Programme |
|  | Dissemination through the travelling exhibit created in the framework of LIFE CONHABIT ANDALUSIA. | Dunes Plan, Botanical Gardens Network                              | Managemen<br>t Programme |

| AfterLIFE Aims   | Actions   | Programme/<br>Project                                    | Funding<br>Mechanism  |
|--|---|--|---|
|  | Publication of news and articles.   | Dunes Plan,<br>Botanical<br>Gardens<br>Network           | Managemen<br>t Programme  |
|  | Attendance at congresses and<br>conferences.  | Dunes Plan   | Managemen<br>t Programme  |
|  | Continue with the activities<br>aimed at the population imple-<br>mented by LIFE CONHABIT AN-<br>DALUSIA.             | Dunes Plan,<br>Botanical<br>Gardens<br>Network           | Managemen<br>t Programme<br>and<br>Complement<br>ary<br>Financing |
| 6. Continue educating in<br>order to conserve coastal<br>habitats and species. | Continue educational pro-<br>grammes for primary and sec-<br>ondary education, launched by<br>LIFE CONHABIT ANDALUCÍA | ALDEA,<br>Dunes Plan,<br>Botanical<br>Gardens<br>Network | Managemen<br>t Programme  |

| AfterLIFE Aims   | Actions   | Programme/<br>Project                          | Funding<br>Mechanism     |
|--|---|--|--------------------------|
|  | Expand actions to other groups or collectives.  | Dunes Plan,<br>Botanical<br>Gardens<br>Network | Managemen<br>t Programme |
| 7. Continue training the various strategic sectors that LIFE CONHABIT ANDALUCÍA is aimed at. | Continue with the necessary training in the municipal and supra-municipal sphere, for the proper execution of beach and dune system cleaning, and gardening in open spaces. | Dunes Plan,<br>Botanical<br>Gardens<br>Network | Managemen<br>t Programme |
|  | Provide the necessary training to the forestry sector, to reduce the effect of its professional activity on coastal habitats and species.                                   | Dunes Plan,<br>Botanical<br>Gardens<br>Network | Managemen<br>t Programme |
|  | Provide the necessary training to the agricultural sector, to reduce the effect of its professional activity on coastal habitats and species.                               | Dunes Plan,<br>Botanical<br>Gardens<br>Network | Managemen<br>t Programme |

| AfterLIFE Aims   | Actions  | Programme/<br>Project                 | Funding<br>Mechanism |
|--|--|---------------------------------------|----------------------|
|  | Provide training aimed at the general public, on good practices in the private sphere to protect coastal habitats and species. | Dunes Plan, Botanical Gardens Network | Management Programme |
| 8. Continue raising awareness of strategic sectors that LIFE CONHABIT ANDALUCÍA is aimed at. | Conduct awareness-raising activities aimed at the foreign population (tourists in a broad sense).                              | Dunes Plan, Botanical Gardens Network | Management Programme |
| 9. Promote social participation in favour of the conservation of habitats and Natura 2000.   | Assess priority habitats as a resource for citizens' quality of life and as a tourist attraction.                              | Dunes Plan, Botanical Gardens Network | Management Programme |
|  | Encourage the participation of sectors not related to environmental education.   | Dunes Plan, Botanical Gardens Network | Management Programme |

| AfterLIFE Aims | Actions   | Programme/<br>Project                 | Funding<br>Mechanism |
|----------------|---|---------------------------------------|----------------------|
|                | Continue and implement conservation actions with City Councils and companies that have participated in sectoral meetings.                                       | Dunes Plan, Botanical Gardens Network | Management Programme |
|                | Promote participation and collaboration among local governments, socio-economic agents and other interest groups to promote shared management of the territory. | Dunes Plan, Botanical Gardens Network | Management Programme |
|                | Promote care of the coastal territory, for the protection of species included in the Dunes Plan and their habitats.   | Dunes Plan, Botanical Gardens Network | Management Programme |
|                | Encourage and promote environmental volunteering as a method of citizen participation in the protection and conservation of coastal habitats and spe-           | Dunes Plan, Botanical Gardens Network | Management Programme |



| AfterLIFE Aims | Actions | Programme/<br>Project | Funding<br>Mechanism |
|----------------|---------|-----------------------|----------------------|
|                | cies.   |                       |                      |

\* Refers to other European funds and those of the Junta de Andalucía.

#### **4. TARGET AUDIENCE AND SCOPE OF COMMUNICATION AND DISSEMINATION ACTIONS.**

Although the scope of implementation is, from a geographical point of view, limited to the Andalusian region, communicative action may reach a much wider audience. The uniqueness of the coastal area, with seasonal population fluctuations linked to very significant tourist use, means that communicative actions have, under a territorial approach, a much broader scope than conservation actions.

At the local/district level, actions will be aimed at the *resident population directly related to the uses of the territory* and adapted to the individual characteristics of each zone. The main target groups will be the school population, professionals in training, teachers, socio-economic agents operating on the coast (farmers, ranchers, forestry companies, tour and hotel operators, ecotourism and active tourism companies, etc.), local administrations, as well as other interest groups and the general local

population.

At the regional level and less specifically, communication actions aimed at both the domestic and foreign *seasonal population* will be carried out that will have a far greater reach from a territorial point of view. The beneficiaries of these actions will be summer tourists who are exclusive consumers of the sun and beach, summer tourists that complementarily consume other tourism products (active tourism, cultural tourism, etc.), ecotourists and consumers of nature tourism products who arrive throughout the year.

#### **4.1. POINT ZERO AND CONTINUATION OF COMMUNICATIVE ACTIVITY**

In order to reinforce society's role in the conservation of coastal habitats, LIFE Conhabit Andalucía has developed intense communicative activity within the framework of its Communication and Awareness Plan, centred on four distinct action lines: disclosure, education and awareness, training and participation. Due to their complementary nature, these action lines are often developed jointly, in the form of "days" that include activities of different types and reaching different target audiences. In addition, the communication of results to a specialised section of society could be considered to be another, final action line, closely linked to the outcome of the actions carried out.

The main work developed on each of these lines, their scope and possibilities of continuity in the framework of the AfterLIFE Plan are set out below.

- Disclosure. This line was aimed at the general population and, therefore, various activity formats were used. This enabled us to reach a very varied public, from temporary residents to entire families, along with different kinds of associations. The messages that this action line focused on were the LIFE Conhabit project itself, natural habitats and Natura 2000.
  
- Education. This line of work was framed within the ALDEA Environmental Education Programme, a joint initiative of the current CAGPDS and the Department of Education with almost 30 years of experience, which made it possible to very significantly reach Compulsory Primary Education (EPO) Compulsory Secondary Education (ESO) professors and students through the A Coast with Roots project, designed within the framework of our project.
- Training. The main work carried out in this line was the training of future professionals in the forestry sector, integrating our project and the protection of habitats in general in the medium- and high-level training modules of forest issues and/or management of the natural environment, taught in the five provinces of the coastal areas of Andalucía. A second training line, resulting from meetings with the Local Administration, was the training of municipal technicians and operators in two subjects: IAS Management and beach cleaning. Finally, theoretical-practical training on the management of IAS has been given to voluntary associations.

- Participation. This line of work focused on meetings with representatives of the Local Administration and tourism companies, mainly ecotourism and active tourism, but also the accommodation sector, both separately and together, promoting meetings between City Councils and companies in their respective municipalities. The approach to the forestry sector, also considered to be a target of this line of work, will take place soon through the methods outlined in the previous paragraph.
  
- Dissemination of results to a specialised sector of the public. Participation in seminars and conferences at the national and international level, as well as the publication of articles in newsletters and technical and scientific journals, allowed us to not only publish our methodologies and results, but also to provide knowledge generated in other projects and/or work equipment.

The activities and/or most relevant products for each of these lines of work and their scope and potential for use during the AfterLIFE period are presented in the following table:

## Activities and/or products developed by LIFE Conhabit Andalucía

| Activity Type   | Participation/<br>attendance/reach  | Assessment<br>result | Availability/material state<br>and HR | Use/continuity in<br>afterLIFE Plan |
|---|---|----------------------|---------------------------------------|-------------------------------------|
| <b>DISSEMINATION AND AWARENESS-RAISING</b>  |   |                      |                                       |                                     |
| Travelling exhibition   | 16 exhibitions/11 localities<br>Guided tour to >1,000 visitors                          | ↑ ↑                  | Current /available contents           | YES                                 |
| Anniversary celebration   | > 350 participants  | ↑ ↑                  | Without HR availability               | NO                                  |
| Web page  | ≈ 16,000 views  | ↑ ↑                  | With HR availability                  | YES                                 |
| Facebook  | > 320,000 views   | ↑ ↑                  | With HR availability                  | YES                                 |
| Twitter   | > 560,000 views   | ↑ ↑                  | With HR availability                  | YES                                 |
| Youtube channel   | ≈ 3,500 views   | ↑ ↑ ↑                | With HR availability                  | YES                                 |
| Textile merchandising   | Distributed   | ↑ ↑                  | Exhausted                             | NO                                  |
| Agenda  | Distributed   | ↑ ↑                  | Outdated/exhausted                    | NO                                  |
| Notebook  | Distributed   | ↑ ↑                  | Current/exhausted contents            | NO                                  |
| Project Brochure  | Distributed   | ↑ ↑                  | Outdated/exhausted                    | NO                                  |
| Project information mat   | Distributed   | ↑ ↑ ↑                | Outdated/exhausted                    | NO                                  |
| USB memory stick  | Ongoing distribution  | ↑ ↑                  | In stock                              | YES                                 |
| Forestry sector brochure  | Ongoing distribution  | ↑ ↑                  | Updated/in stock                      | YES                                 |
| Ecotourism guide map  | Ongoing distribution  | ↑ ↑                  | Updated/in stock                      | YES                                 |
| LAYMAN report   | Ongoing distribution  | ↑ ↑                  | Outdated/in stock                     | YES                                 |
| Quercus special supplement  | Ongoing distribution  | ↑ ↑ ↑                | Partially outdated/in stock           | YES                                 |
| Press releases (Conhabit and CAGPDS web)  | Wide dissemination  | ↑ ↑                  | With HR availability                  | YES                                 |
| <b>EDUCATION</b>  |   |                      |                                       |                                     |
| ALDEA/Un Litoral con Raíces   | ≈ 6,000 students >350 teachers  | ↑ ↑ ↑                | External execution                    | YES                                 |
| <b>TRAINING</b>   |   |                      |                                       |                                     |
| Intermediate and Upper vocation training (FP) m                                   | 35 training actions /600 students   | ↑ ↑ ↑                | Without HR availability               | NO                                  |
| Training for municipal technicians and operators                                  | 5 city councils achieved, in the field of IAS, cleaning beaches and tourist information | ↑ ↑                  | With HR availability                  | YES                                 |
| Volunteer Training  | 12 Associations />350 participants  | ↑ ↑                  | With HR availability                  | YES                                 |
| <b>PARTICIPATION</b>  |   |                      |                                       |                                     |
| Meetings with Local Administration  | 21 meetings/16 city councils  | ↑ ↑ ↑                | With HR availability                  | YES                                 |
| Meetings with companies   | 4 meetings /17 companies  | ↑ ↑                  | With HR availability                  | YES                                 |
| Multi-sectoral meetings   | 7 meetings /8 city councils /30 Companies   | ↑ ↑                  | With HR availability                  | YES                                 |
| <b>DISCLOSURE TO SPECIALISED AUDIENCES</b>  |   |                      |                                       |                                     |
| Workshops, seminars and congresses  | 4 congresses, 13 workshops/seminars 1 tec. workshop Organised                           | ↑ ↑                  | With HR availability                  | YES                                 |
| Publications in internal and external newsletters                                 | Appearance in 22 internal bull. and 5 external bull.                                    | ↑ ↑                  | With HR availability                  | YES                                 |
| Technical/scientific publications   | 6 published + 1 in review   | ↑ ↑                  | With HR availability                  | YES                                 |
| <b>Rating: ↑ scarce in relation to effort; ↑ ↑ positive; ↑ ↑ ↑ very positive.</b> |   |                      |                                       |                                     |

## **5.FUNDING:**

The funding necessary to carry out all the actions defined above will have a variety of origins, from its own funds to other funding instruments. In fact, this funding outside of the LIFE funds is already being used to finance a large part of the conservation work for species and their habitats within the framework of the Dunes Plan (Agreement of 29 May 2018, of the Governing Council, which approves the Programme for the Management of the Environment and Water Agency of Andalucía for the 2018-2019 period).

The Management Programme is a tool that links its compliance with the Department of Agriculture, Livestock, Fisheries and Sustainable Development and with the Agency. The former is linked to in terms of planning and programming the actions to be carried out in each year of application, and the second in terms of the achievement of the objectives established in the Plan of Action for each year, with an expression of personal, material and budget resources provided for that purpose, as well as their indicators of effectiveness.

The temporal scope of the the measures and actions that are deemed necessary to fulfil the AfterLIFE Conhabit Plan is a significant aspect. Therefore, the need for action based on the response of the medium must be balanced with the availability of resources and the required sequence of work to be done.

The financial instruments and approximate budgets for each of the plans

and programmes are summarised in the following table:

| Plan/Programme Name  | Description   | Budget (€)   |
|--|---|--|
| The Recovery and Conservation Plan for species of dunes, sandy areas and coastal cliffs. | Management Programme of Andalucía's Environment and Water Agency. | All the actions are included, as discussed, in the Agency's Management Programme, which receives an annual budget on the basis of the budgets of the Junta de Andalucía, ensuring the technical capacity to achieve the objectives set out for each of these activities. The annual budget approved for the Management Programme is preliminarily distributed amongst all the activities that it includes, which may vary depending on the needs that arise. |
| Programme for the control of Invasive Alien Species.                                     |   |  |
| Andalusian Network of Botanical and Mycological Gardens in Natural Spaces.               |   |  |
| Laboratory of Plant Propagation.   |   |  |

| Plan/Programme Name   | Description   | Budget (€)   |
|---|---|--|
| Red de Viveros.   |   |  |
| Aldea Programme.  |   |  |
| Andalucía's Environmental Information Network.                                      |   |  |
| Programme for the control of Invasive Alien Species.                                | Management actions in the field on invasive alien species in Andalucía.   | For work on the coast affecting HICs linked to the LIFE CONHABIT programme, an estimated €98,810 until 31/12/2020                                |
| Plan for Restoring the land affected by the fire of the Doñana (Las Peñuelas 2017). | HABITATS OF COMMUNITY INTEREST • <b>Objective 01.06.</b> Achieve a good state of conservation in the HIC present in the area to be restored, prioritising actions | Of the total budget forecast of the Restoration Plan, taking into account objectives 1.06, 1.07 and 1.08 associated with the HICs linked to LIFE |



| Plan/Programme Name   | Description   | Budget (€)  |
|---|---|---|
|   | <p>in the HIC considered most vulnerable to the effects of fire. • <b>Objective 01.07.</b> Include HIC within the area affected by the fire with a larger potential distribution surface in the restoration, despite these not having been present previously (primarily due to having been lost) or having a limited presence (<i>Juniperus navicularis</i> juniper). • <b>Objective 01.08.</b> Update the maps of HIC present in the area following the restoration work.</p> | <p>CONHABIT (3170, 2250 and 2270), an investment of €97,000.00 is estimated, €60,000 of which is high priority.</p>   |
| <p>Actions linked to the conservation and recovery of populations of endangered flora and their habitats.</p> | <p>Proposal in development that affects the various species of all endangered flora recovery plans, including the Recovery Plan for Dunes, Sandy Areas and Coastal Cliffs.</p>  | <p>The item that will cover the actions established for the Plan of Dunes, Sandy Areas and Coastal Cliffs in this proposal, over a total of 4 years, is approximately 220,000,00 euros.</p> |