PRIORITISED ACTION FRAMEWORK (PAF) FOR NATURA 2000 in Greece

pursuant to Article 8 of Council Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna (the Habitats Directive)

for the *Multiannual Financial Framework* period 2021–2027

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A. Introduction

A.1. General introduction

Prioritised action frameworks (PAFs) are strategic multiannual planning tools aimed at providing a comprehensive overview of the measures that are needed to implement the EU-wide Natura 2000 network and its associated green infrastructure, specifying the financing needs for these measures and linking them to the corresponding EU funding programmes. In line with the objectives of the EU Habitats Directive[1], on which the Natura 2000 network is based, the measures to be identified in the PAFs shall be designed mainly "*to maintain and restore, at a favourable conservation status, natural habitats and species of EU importance, whilst taking account of economic, social and cultural requirements, as well as regional and local characteristics.*"

The legal basis for the PAF is Article 8 (1) of the Habitats Directive[2], which requires Member States to send, as appropriate, to the Commission their estimates relating to the European Union co-financing which they consider necessary to meet their following obligations in relation to Natura 2000:

- *to establish the necessary conservation measures involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans;*
- *to establish appropriate statutory, administrative or contractual measures which correspond to the ecological requirements of the natural habitat types in Annex I and the species in Annex II present on the sites.*

Prioritised action frameworks shall therefore focus on the identification of those financing needs and priorities that are directly linked to the specific conservation measures established for Natura 2000 sites, in view of achieving the site-level conservation objectives for those species and habitat types for which the sites have been designated (as required by Article 6 (1) of the Habitats Directive). Given that the Natura 2000 network also includes the Special Protection Areas (SPAs) designated pursuant to the EU Birds Directive 2009/147/EC[3], the financing needs and priority measures associated with bird species in SPAs are therefore also considered here.

Member States are invited to also present in their PAFs additional measures and their financing needs related to wider green infrastructures (GI)[4]. Such green infrastructure measures are to be included in the PAF where they contribute to the ecological coherence of the Natura 2000 network, including in a cross-border context, and to the objective of maintaining or restoring favourable conservation status of the targeted species and habitats.

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[1] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora http://eur-lex.europa.eu/legal-content/EL/TXT/?uri=CELEX:01992L0043-20130701.

[2] Article 8 (1): "In parallel with their proposals for sites eligible for designation as special areas of conservation, hosting priority natural habitat types and/or priority species, the Member States shall send, as appropriate, to the Commission their estimates relating to the Community co- financing which they consider necessary to allow them to meet their obligations pursuant to Article 6 (1)."

[3] Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds,http://eur-lex.europa.eu/legal-content/EL/TXT/?uri=CELEX%3A32009L0147.

[4] Green Infrastructure is defined as "a strategically planned network of natural and semi-natural areas with environmental features designed and managed to deliver a wide range of ecosystem services."

In its Special Report N° 1/2017 on Natura 2000[5], the European Court of Auditors concluded that the first completed PAFs (for the MFF period 2014-2020) did not present a reliable picture of the actual costs of the Natura 2000 network. The report therefore highlighted the need for updating the PAF format and providing further guidance for improving the quality of information that Member States provide in their PAFs. The recent EU Action plan for nature, people and the economy[6] commits to this process, with a view to ensuring that Member States provide more reliable and harmonised estimates of their financing needs for Natura 2000.

In its conclusions on this action plan[7], the Council of the European Union recognises the need for further improving the multiannual financial planning for investments in nature and agrees that there is a need to update and improve the PAFs. The importance of better forecasting the financing needs for Natura 2000 ahead of the next EU Multiannual Financial Framework is also recognised in a resolution by the European Parliament[8].

A.2 Structure of the current PAF format

The current PAF format is designed to provide reliable information about the priority Natura 2000-related financing needs, with a view to their incorporation in the relevant EU funding instruments under the next Multiannual Financial Framework (MFF) 2021-2027. To this aim, the PAF requires a level of breakdown of financing needs that would allow for an effective allocation of the Natura 2000 funding under the relevant EU funds for the MFF 2021-2027. With a view to that goal, the PAF also takes into consideration the experience that EU Member States and regions have gained so far with the MFF 2014-2020.

An essential component of the current PAF format is the required breakdown of the Natura 2000- and green infrastructure-related conservation and restoration measures per broad ecosystem category. The proposed ecosystem typology of 8 classes is very largely based on the MAES typology, which was established as a conceptual basis for an EU wide ecosystem assessment[9]. A comprehensive database allocating individual species and habitat types of EU importance to the MAES ecosystems is available for download from the European Environment Agency website[10]. It is recommended that the allocation of measures and costs to ecosystem types should largely follow this typology.

The presentation of priority measures and costs of the current PAF requires a distinction between running costs and one-off expenditure. Whereas running costs are typically associated with recurring measures that need to be continued in the long term (f. ex. staff costs for site management, annual payments to farmers for agri-environmental measures on grasslands, etc.), one-off expenditures are typically related to non-recurring actions such as habitat restoration projects, large infrastructural

[5] Special Report No 1/2017: More efforts needed to implement the Natura 2000 network to its full potential https://www.eca.europa.eu/el/Pages/DocItem.aspx?did=40768.

[6] COM(2017) 198 final: An Action Plan for nature, people and the economy http://ec.europa.eu/environment/nature/legislation/fitness_check/action_plan/communication_en.pdf.

[7] http://www.consilium.europa.eu/en/press/press-releases/2017/06/19/conclusions-eu-action-plan-nature/

[8] European Parliament resolution of 15 November 2017 on an Action Plan for nature, people and the economy (2017/2819(RSP)) http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EL&reference=P8-TA-2017-0441

[9] https://biodiversity.europa.eu/maes

[10] Linkages of species and habitat types to MAES ecosystems https://www.eea.europa.eu/data-and-maps/data/linkages-of-species-and-habitat#tab-european-data.

investments, purchase of durable goods, etc. The correct allocation of costs to either category ("running" versus "one-off") will be highly relevant for a correct allocation of measures under different EU funds.

Finally, priority measures under this PAF will not only contribute to the specific objectives of the EU nature directives, but will also provide important socio-economic and ecosystem service benefits to the society. Examples of benefits may include climate mitigation and adaptation, or other ecosystem services such as those related to tourism and culture. The Commission has already provided an overview of ecosystem services benefits related to Natura 2000[11].

This aspect should be emphasized where possible, with a view to promote and communicate the wide societal benefits of funding nature and biodiversity.

A.3 Introduction to the specific PAF of Greece

Geographical coverage of PAF 2021-2027

This text concerns the entirety of the Greek territories, as the main body responsible for implementing Directives 92/43/EEC and 2009/147/EC is the Department of Protected Areas (Directorate of Natural Environment Management and Biodiversity, Ministry of Environment and Energy), and the management of the Natura 2000 network is designed at central level. However, Greece is divided into 13 Administrative Regions expected to receive funding from European Structural Funds, i.e., the European Regional Development Fund and the Cohesion Fund; therefore, prioritised measures listed in the PAF 2021-2027 are specified per Region, unless planned to be implemented countrywide.

Management system for the Natura 2000 network in Greece

Numerous agencies, competent authorities, and bodies are involved in managing the protected areas of the Natura 2000 network; these agencies, authorities, and bodies belong to different levels of centralised, regional, and local government (centralised public services, regulated entities, decentralised, regional, and municipal authorities, etc.).

A Law passed by the Greek Parliament in May 2020 (Law 4685/2020 (A 92)) proposes a new system of governance for the Protected Areas of Greece through a comprehensive and cohesive management framework. The overall, unified planning concerns innovative governance and targeted management to achieve sustainable development, while at the same time enhancing the resilience of all the factors that require protection (natural environment, society, economy). The Natural Environment & Climate Change Agency (NECCA) is a new scientific, advisory, and coordinating organisation created to deal with all the matters mentioned above, i.e., to systematically organise the governance and management of Protected Areas. The Agency will be able to make executive decisions and collaborate with other competent bodies (Ministries, municipal- and regional-level local government, environmental NGOs, local communities, the local primary sector), all while being Greece's executive and coordinating body on Protected Areas management issues, with a mission to design, monitor, and set the pace for the protection and sustainable development in these Areas. This newly proposed system is actually a reform in the governance of Protected Areas compared to the public policies implemented so far. From a functional point of view, this reform establishes multi-level governance in the Protected Areas according to the guidelines on multi-level governance provided by the European Commission and the OECD, and its scope encompasses all the areas included in the European Natura 2000 network.

Twenty-four (24) new Protected Areas Management Units (PAMUs) are replacing the previous Protected Areas Management Bodies; along with their 12 local subdivisions, the PAMUs will cover the country's

[11] http://ec.europa.eu/environment/nature/natura2000/financing/

needs for sustainable management and protection in the areas included in the European Natura 2000 network.

As per article 27 par. 5.16 of the aforementioned new Law, the NECCA will issue opinions through the PAMUs on the appropriate assessment of the implications of any plan or project that falls within the Agency's territorial jurisdiction, as provided in article 6.3 of Directive 92/43/EEC.

As per article 43 par. 4 of the aforementioned new Law, the existing staff of the previous Protected Areas Management Bodies are automatically transferred to the respective PAMUs.

As per the provisions of article 35 of the new Law, every PAMU must include at least one local Management Committee consisting of local people and institutions operating in the respective area (scientists, the primary sector, municipal- and regional-level local government, the local community, NGOs, etc.); the committees will play a substantial role in managing the Areas, based on their set of responsibilities, to be specified by decision of the Minister of Environment and Energy.

As per article 43 par. 1 of the aforementioned new Law, the NECCA is the sole successor of the Protected Areas Management Bodies; as such, the Agency and the PAMUs will now own all property previously owned by the Bodies.

According to the provisions of article 38 par. 1a and to physically protect its Areas of responsibility, each PAMU will draft memoranda of cooperation with the decentralised government and the Hellenic Coast Guard, mixed patrol units will be put together on a mandatory basis, and the protection plans mentioned in article 34 par. 2.13 will be implemented.

The main body responsible for managing the Natura 2000 network is the Hellenic Ministry of Environment and Energy (MEEN). Specifically, the MEEN:

- supervises the Natural Environment & Climate Change Agency (NECCA);
- is responsible for defining and updating the areas of the Natura 2000 network (Special Protection Areas, Special Areas of Conservation, etc.), the Conservation Objectives, and the Favourable Reference Values (FRVs) for species and habitat types of Community interest;
- is responsible for drafting the Presidential Decrees (PD) governing the uses of land and relevant regulations for the areas of the Natura 2000 network, as well as the Management Plans that further specify the provisions of the PDs;
- is responsible for planning, submitting proposals, implementing, and monitoring projects for the protection and conservation of the Natura 2000 network.

The representatives of the regional and municipal government, environmental organisations, the academic and research community, the primary sector and financial/economic institutions are involved in the decision-making process for the management of Protected Areas by participating in the Local Management Committees of the PAMUs. The responsibilities of the PAMUs are detailed in section E.1.2.

Other bodies and institutions involved in the management of the Natura 2000 network include:

- the decentralised government, by means of the local Forest Authorities;
- the Hellenic Coast Guard; and
- the GameGuard Body of the Hellenic Hunters Confederation. Together, these are the competent investigating bodies responsible for protecting the Natura 2000 areas against controlled and illegal activities.

The licensing authorities capable of issuing environmental licenses for activities and projects to take place within the Natura 2000 network include the MEEN, the decentralised government and the regional government, depending on project size and category.

The competent national authority for appropriate assessment (article 6.3 of Directive 92/43/EEC) is the NECCA, through the local PAMUs.

Last, the "Nature 2000" Committee is the Government's central scientific advisory body responsible for coordinating, monitoring, and assessing the policies and protection measures for the protection of biodiversity in Greece. The main responsibility of the Committee is to monitor the compliance with and implementation of the provisions of Directive 92/43/EEC on natural habitats in the entirety of the national territories, regardless of inclusion in the Natura 2000 network.

Green Infrastructure and Ecosystem Services

As a network of natural, agricultural, aquatic, and marine areas, Green Infrastructure has a pivotal role in protecting biodiversity, providing services across a wide spectrum of ecological and environmental processes. The need to create and protect green infrastructure has been explicitly acknowledged in the National Strategy on the Protection of Biodiversity (General Objective 13, Specific Objectives 13.1-13.3) and in the National Strategy on Forests (Main Axis 3 - Monitoring and protecting forest ecosystems, and optimising ecosystem services). In the context of implementation of LIFE IP 4Natura project, actions towards mapping and assessing ecosystem services all over Greece are carried out.

Prioritised Action Framework (PAF) 2021-2027 drafting process

This prioritised action framework concerns Greece in its entirety and was drafted in the context of implementing the LIFE-IP 4 Natura project (LIFE16 IPE/GR/000002) by the Ministry of Environment and Energy and the Green Fund.

A work group was put together and tasked with drafting the PAF and compiling a list of proposed measures. The work group organised open, participatory events, including:

1. An open day for the PAF 2021-2027, titled "Prioritised Action Framework for the Natura 2000 network: Using today's knowledge to plan for the future" (Athens, 7/12/2018). The day event was jointly organised with the European Commission, and all involved and interested bodies and institutions were invited.

2. An open invite to submit proposals for the inclusion of measures in the PAF using an online platform on the web page of the LIFE-IP 4 Natura project (https://edozoume.gr/anoixti-prosklisi-katathesis-metron/).

3. A webinar to inform interested parties on how to propose measures for inclusion in the PAF (https://www.youtube.com/watch?v=LcprhIr4YT0).

4. Meetings with the managing authorities of the European Maritime and Fisheries Fund (EMFF) and the European Agricultural Fund for Rural Development (EAFRD), to inform these structural funds on the measures eligible for receiving their funding.

5. Direct communication with members of the scientific community.

These actions allowed the work group to engage government employees, scientists with relevant expertise, members of the academic and research community, the Protected Areas Management Bodies, and other interested parties in the consultation process and the procedure for the proposal of measures. Upon completion of these actions, about 800 measures had been submitted by 55 bodies and interested individuals. The work group processed these data against the country's priorities for 2021-2027 and on grounds of eligibility according to the PAF template. Upon processing the collected material, the work group was able to:

A. List the national priorities for the Natura 2000 network for the period 2021-2027 (listed further down);

B. Identify gaps in proposals for national prioritised action measures (after identifying the gaps, the group contacted expert scientists and bodies for a second time, to fill these gaps with appropriate measures);

C. Draft the PAF 2021-2027 according to the template published by the Commission.

National priorities for the measures included in the PAF 2021-2027 for Greece

The measures included in the PAF are mainly intended to cover the national priorities concerning the protection and management of protected areas, species, and habitats. The main national priorities include:

1. Improving knowledge on the conservation status of species and habitat types, as there are currently significant knowledge gaps. Without this knowledge, it is impossible to identify needs and come up with conservation and management measures. Therefore, it is a crucial priority for the following period to implement actions to acquire primary data through fieldwork combined with establishing and implementing a permanent national system for monitoring species and habitats.

2. Improving the conservation status of species (species with bad conservation status, poor and declining trend, or priority regardless of conservation status) and habitat types (habitats with poor/bad conservation status, or priority regardless of conservation status) of Community interest, including birds (prioritisation based on population trends, percentage of EU population in the country, Birds in Europe 3.018 risk categories, and expert opinion), for which it is deemed necessary to improve their current conservation status by implementing the Action Plans for species and habitats, and the Protected Areas Management Plans.

3. Addressing the problems caused by the interaction and conflict between wildlife and human activity, both in terms of their negative effects on species (high anthropogenic mortality) and in terms of effects on natural capital and resources, the tools, and the equipment used by local populations. Particular emphasis will be given to recording and addressing risks in marine areas of the Natura 2000 network.

4. Mitigating the effects and preventing the consequences of climate change on protected species, habitats, and areas.

5. Creating green infrastructure to limit the fragmentation of ecosystems within and outside the Natura 2000 network, and developing practices and measures that respect and support the species and habitat types of Community interest, including the implementation of agroenvironmental measures.

6. Conserving genetic resources.

7. Countering the implications arising from the presence of Invasive Alien Species (IAS), with an emphasis on marine environment and species/habitat types of Community interest.

8. Mitigating the effects of large-scale infrastructures (e.g., wind farms, hydrocarbon exploration, etc.) on Natura 2000 areas and on species/habitat types of Community interest.

9. Improving the implementation of EU and national environmental law. Also resolving open cases/complaints by the European Commission to the MEEN concerning misapplications of EU environmental policy with regard to the operation of the Natura 2000 network and the implementation of Directives 92/43/EEC and 2009/147/EU; at the same time, further integrating the aspect of biodiversity protection in individual sectoral policies.

10. Improving operational capacity and development of skills among the human resources of public bodies with responsibilities in Natura 2000 network areas.

11. Providing targeted information to the end of understanding the benefits from protecting and conserving the areas in the Natura 2000 network; also boosting entrepreneurship through the sustainable use of Greece's natural capital within the network.

Concerns and difficulties while drafting the PAF 2021-2027

Greece is currently in the process of developing and implementing a number of instruments that are necessary for appropriately managing the areas in the Natura 2000 network. A significant part of this process was completed within the past two years (full coverage of the Natura 2000 network by the Protected Areas Management Bodies, extension of the network by integrating new areas, with an emphasis on marine areas), while other parts are currently being drafted (e.g., Special Environmental Studies, Management Plans, Thematic Management Plans on agriculture in Protected Areas). What is more, through the LIFE-IP 4 Natura and "Monitoring species and habitat types of Community interest" projects, Greece is to set conservation objectives and pass relevant legislation according to the provisions of Directive 92/43. Delivery of the instruments mentioned above is expected by the end of the current financing period.

The PAF 2021-2027 is drafted during this transitional phase; therefore, the data pertaining to the conservation objectives, the Presidential Decrees, and the Management Plans are not available yet. This makes it difficult to plan actions at local level. This PAF is based on information extracted from the completed projects mentioned above, the information included in the last two reports submitted to the EU (reports on the implementation of Directives 92/43/EEC and 2009/147/EC), and the information collected by the work team during their communication with the scientific community and the competent bodies (mentioned in section A3). It is estimated that, upon establishment of the Management Plans, the PAF will be updated to precisely reflect the proposed actions for each area of the Natura 2000 network. Additionally, the new law (Law 4685/2020) has radically changed the structure of the Protected Areas governance system. However, a transitional period of about one year has been allowed for the smooth transition to the new system.

Another challenge while drafting the PAF was the allocation of measures to the 13 Regions of Greece, their precise and realistic cost estimation, and the submission of the reports according to Directives 92/43/EEC and 2009/147/EC during the drafting period.

Additionally to the information included in the PAF, which concerns species and habitats covered in the two Directives, it is equally important for the country to address the issue of endemic and threatened species and habitats of national interest, which are not included in the Annexes to the Directives. The measures proposed in this PAF may indeed have an indirect positive effect on the conservation status of the species and habitats of national interest; however, it would be appropriate if measures directly targeting these species and habitats could be included as well, as these species and habitats are also an integral part of the Protected Areas in the Natura 2000 network.

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B. Summary of priority financing needs for the period 2021-2027

		Priority financing needs for the period 2021-2027	
1.	**Horizontal measures and administrative costs related to Natura 2000**	Annual running costs (€ per annum)	One-off expenditures / project costs (€ per annum)
1.1.	Site designation and management planning	€0	€1,802,573
1.2.	Site administration and communication with stakeholders	€194,858	€1,602,142
1.3.	Monitoring and reporting	€3,397,658	€2,624,858
1.4.	Remaining knowledge gaps and research needs	€25,714	€2,423,656
1.5.	Natura 2000-related communication and awareness raising measures, education and visitor access	€2,438,567	€54,858
	Subtotal	**€6,056,797**	**€8,508,087**

2.a	**Conservation and restoration measures pertaining to Natura 2000 sites for species and habitats**	Annual running costs (€ per annum)	One-off expenditures / project costs (€ per annum)
2.1.a	Marine and coastal waters	€1,365,144	€1,531,400
2.2.a	Heathland and shrub	€58,001	€432,285
2.3.a	Bogs, fens and other wetlands	€285,657	€1,210,856
2.4.a	Grassland	€1,437,142	€473,713
2.5.a	Other agricultural ecosystems (incl. arable lands)	€78,711,143	€428,571
2.6.a	Woodland and forest	€1,645,710	€2,317,996
2.7.a	Rocky habitats, dunes and sparsely vegetated land	€610,559	€1,999,431
2.8.a	Fresh water habitats (rivers and lakes)	€137,143	€2,526,463
2.9.a	Other	N/A	N/A
	Subtotal	**€84,250,499**	**€10,920,715**

2.b	**Additional green infrastructure measures outside the Natura 2000 network (further improving the coherence of the Natura 2000 network, including in a cross-border context)**	Annual running costs (€ per annum)	One-off expenditures / project costs (€ per annum)
2.1.b	Marine and coastal waters	€0	€188,573
2.2.b	Heathland and shrub	€0	€278,570
2.3.b	Bogs, fens and other wetlands	€0	€347,998
2.4.b	Grassland	€13,714	€245,141
2.5.b	Other agricultural ecosystems (incl. arable lands)	€16,728,571	€257,143
2.6.b	Woodland and forest	€34,286	€274,284
2.7.b	Rocky habitats, dunes and sparsely vegetated land	€0	€403,713
2.8.b	Fresh water habitats (rivers and lakes)	€0	€29,143
2.9.b	Other (caves, etc.)	N/A	N/A
	Subtotal	**€16,776,571**	**€2,024,565**

3.	**Additional species-specific measures not pertaining to specific ecosystems or habitats**	Annual running costs (€ per annum)	One-off expenditures / project costs (€ per annum)
3.1	Species-specific measures and programmes not covered elsewhere	€3,871,601	€2,110,144
3.2.	Prevention and mitigation of damage caused by protected species, or compensation for such damage	€12,897,942	€1,089,324
	Subtotal	**€16,769,543**	**€3,199,468**

	Annual total	**€123,853,410**	**€24,652,835**
	Total (2021-2027)		**€1,039,543,715**

C. Current state of the Natura 2000 network

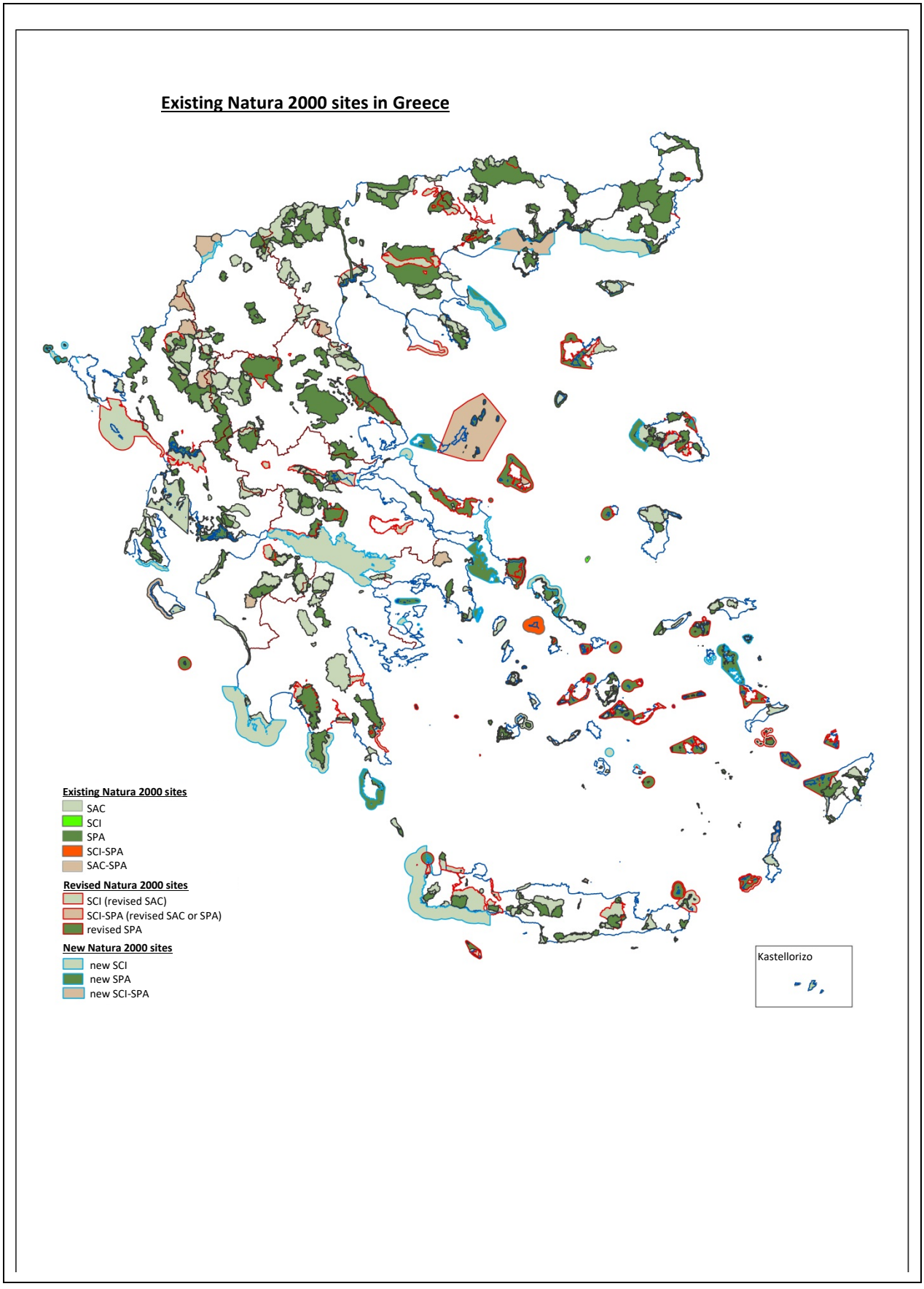
C.1 Area statistics of the Natura 2000 network

The Natura 2000 network in Greece consists of 446 terrestrial and marine areas totaling 58,859 km^2. Specifically, 215 areas are designated as Special Areas of Conservation (SACs), 181 as Special Protection Areas (SPAs), 24 as SAC *and* SPA, 24 as Sites of Community Importance (SCIs), and 2 as SCI *and* SPA. The last extension of the Natura 2000 network occurred in 2017 with Joint Ministerial Decision 50743 (Government Gazette B 4432/2017), titled "*Revision of the national list of sites of the European Natura 2000 network*". In the context of this revision, a total of 95 sites were selected for inclusion; some were new additions (32 Natura sites), while others were extensions of existing sites (63 Natura sites). With regard to the extensions, these were mostly into SCI-designated terrestrial areas, specifically areas with documented presence of priority species or habitat types, or areas that ensured better coherence and cohesiveness of the Natura 2000 network; with the exception of some islets, no new SPA-designated land areas were included, as the country's terrestrial SPA site network is considered adequate. The new sites included in the Natura 2000 network were mostly marine areas. Of the new sites included in the Natura 2000 network by Joint Ministerial Decision 50743 (Government Gazette B 4432/2017), 34 were terrestrial SCIs, 21 were marine SCIs, 26 were marine SPAs, 6 were marine and terrestrial SPAs, 1 was a terrestrial SPA, 6 were marine and terrestrial SCIs, and 1 was a marine SCI *and* SPA. Prior to the extension, the Natura 2000 network covered an area of 42,942 km^2, including over 27.2% of the country's land area and 6.1% of its marine territory. Today, the Natura 2000 network covers 27.59% of the country's land area and 19.6% of its marine territory, to a total area of 58,859 km^2. In any case, the inclusion of additional marine and/or terrestrial SPA- or SCI-designated areas may be considered in the future in the context of a new assessment of the Natura 2000 network at biogeographical level.

Greece has 89 documented habitat types, 63 plant species, 44 invertebrate species, 17 amphibian species, 51 reptile species, 59 mammal species, and 65 fish species of EU interest, specified in Annexes I, II, IV, and V of Directive 92/43/EEC, as well as 321 wintering and/or breeding or passage bird species, specified in Annexes I and II of Directive 2009/147/EC.

	Natura 2000 area data per EU Member State (in km²)								**Proportion (in %) of the land area covered by:**			
	Terrestrial				**Marine**							
Name of region	**SCI**	**SPA**	**SCI/SPA**	**N2K**	**SCI**	**SPA**	**SCI/SPA**	**N2K**	**SCI**	**SPA**	**SCI/SPA**	**N2K**
Eastern Macedonia and Thrace	*1,768*	*4,439*	*5*	*4,743*	*929*	*170*	*758*	*1,761*	*12%*	*31%*	*0%*	*33%*
Attica	*202*	*200*	*149*	*441*	*117*	*490*	*0*	*595*	*5%*	*5%*	*4%*	*12%*
North Aegean	*943*	*1,274*	*0*	*1,550*	*489*	*1,128*	*0*	*1,352*	*25%*	*33%*	*0%*	*40%*
Western Greece	*1,308*	*1,436*	*102*	*2,062*	*888*	*318*	*0*	*889*	*12%*	*13%*	*1%*	*18%*
Western Macedonia	*594*	*692*	*491*	*1,533*	*0*	*0*	*0*	*0*	*6%*	*7%*	*5%*	*16%*
Epirus	*1,072*	*2,498*	*548*	*3,176*	*32*	*17*	*0*	*32*	*12%*	*27%*	*6%*	*35%*
Thessaly	*2,531*	*4,100*	*298*	*5,026*	*55*	*284*	*2,321*	*2,581*	*18%*	*29%*	*2%*	*36%*
Ionian Islands	*149*	*247*	*52*	*368*	*2,752*	*205*	*184*	*3,047*	*6%*	*11%*	*2%*	*16%*
Central Macedonia	*3,882*	*4,943*	*145*	*6,627*	*470*	*242*	*3*	*536*	*20%*	*26%*	*1%*	*35%*
Crete	*2,360*	*1,252*	*12*	*2,692*	*539*	*351*	*0*	*2,312*	*28%*	*15%*	*0%*	*32%*
South Aegean	*1,267*	*1,170*	*126*	*1,952*	*1,262*	*2,716*	*318*	*3,916*	*24%*	*22%*	*2%*	*37%*
Peloponnese	*2,417*	*1,583*	*13*	*3,024*	*1,786*	*1*	*0*	*1,786*	*16%*	*10%*	*0%*	*19%*
Central Greece	*1,630*	*2,181*	*41*	*2,987*	*2,795*	*1,153*	*0*	*3,819*	*10%*	*14%*	*0%*	*19%*
Total	***20,122***	***26,014***	***1,981***	***36,233***	***12,115***	***7,074***	***3,583***	***22,626***	***15%***	***20%***	***2%***	***28%***

C.2 Map of the Natura 2000 network in Greece



D. EU and national financing of the Natura 2000 network during the period 2014 – 2020

This section provides a comprehensive overview of the funding allocated to Natura 2000, protection of species of EU interest and green infrastructure during the period 2014-2020. This data should help the Commission and national/regional authorities assess to what extent the financial needs of Natura 2000 are currently met and what the funding gap is.

The data presented in the following subsections D.1 through D.6 include data updated up to the first semester of 2019. This data will be updated again after the end of the financing period 2014-2020.

D.1 European Agricultural Fund for Rural Development (EAFRD)

Total allocation from the EAFRD to Greece: **€5,880,192,246**

Measure	**Total current allocation to the EAFRD measure**		**Current allocation to actions or sub-measures relevant for Natura 2000**		**Current spending on actions or sub-measures relevant for Natura 2000**		**Comments** (relevance, experience to-date, challenges for the next period)
	EU	**National**	**EU**	**National**	**EU**	**National**	
M4 Investments in physical assets	€1,138,959,473	€264,117,769	€300,000	€78,784	€0	€0	Action 4.4.1 "Protection of agricultural activity from bears" pertains to the Natura 2000 network.
M7 Basic services & village renewal in rural areas	€82,013,233	€32,436,374	€522,500	€155,736	€0	€0	Submeasure 7.1 "Development of thematic management plans for the agriculture sector in protected areas" pertains to the Natura 2000 network.
M8 Investments in forest area	€226,265,500	€53,062,327	€226,265,500	€53,062,327	€21,547,897	€4,701,705	
M10 Agri-environment climate measures	€359,805,712	€80,448,819	€59,195,272	€13,232,903	€9,622,642	€2,151,054	
M11 Organic farming	€626,297,767	€141,387,707	€199,854,884	€45,125,361	€59,153,874	€13,356,391	
M12 Natura 2000 payments	€7,500,000	€1,800,746	€15,565,500	€5,134,684	€0	€0	
M13 Payments to areas facing natural or other specific constraints	€950,005,211	€82,085,176	€38,320,314	€3,309,576	€38,008,215	€3,282,621	
M15 Forest-environmental and climate services and forest conservation							Not included in the RDP 2014-2020
Subtotal	**€3,390,846,896**	**€655,338,919**	**€540,023,970**	**€120,099,371**	**€128,332,627**	**€23,491,772**	
TOTAL		**€4,046,185,815**		**€660,123,341**		**€151,824,399**	

D.2 European Regional Development Fund (ERDF) / Cohesion Fund (CF)

Total allocation from ERDF to Greece: **€8,608,506,555**

Total allocation from Cohesion Fund to Greece: **€3,265,667,753**

Category of intervention	**Allocation to measures relevant for Natura 2000**		**Current spending on measures relevant for Natura 2000**		**Comments** (relevance, experience to-date, challenges for the next period)
	EU	**National**	**EU**	**National**	
85 Protection and enhancement of biodiversity, nature protection and green infrastructure	€65,419,200	€13,724,212	€1,061,919	€265,480	This includes all grants/expenditures, not exclusively those pertaining to the Natura 2000 network. At this stage, it is not possible to specify which grants relate to the Natura 2000 network, as project specification and inclusion has not been completed for all grants. However, it should be noted that 99.5% of all the expenditures in intervention category 85 correspond to actions pertaining to the Natura 2000 network.
86 Protection, restoration and sustainable use of Natura 2000	€18,931,160	€5,281,160	€1,112,760	€285,033	
Other categories					
Subtotal	**€84,350,360**	**€19,005,372**	**€2,174,678**	**€550,513**	
TOTAL		**€103,355,732**		**€2,725,191**	

D.3 European Maritime and Fisheries Fund (EMFF)

Total allocation from the EMFF to Greece: **€523,406,309**

Measure	**Allocation to measures relevant for Natura 2000**		**Current spending on measures relevant for Natura 2000**		**Comments** (relevance, experience gained so far, challenges for the next period)
	EU	**National**	**EU**	**National**	
Article 40.1 (b)-(g) and (i) – Protection and restoration of marine biodiversity and ecosystems (+Article 44 paragraph 6 Inland fisheries)	€25,500,000	€8,500,000	€422,832	€140,944	
Subtotal	**€25,500,000**	**€8,500,000**	**€422,832**	**€140,944**	
TOTAL		**€34,000,000**		**€563,777**	

D.4 LIFE Programme

Type of project or financing instrument	Current allocation to measures relevant for Natura 2000		Comments (number of projects, relevance, experience to-date, challenges for the next period)
	EU	National	
Traditional projects*	€15,969,605	€6,851,439	Approval has been granted for 17 traditional projects, of which 14 are in the priority area of Nature and Biodiversity (NAT) and 3 in the priority area of Environmental Governance and Information (GIE): 11 NAT projects target species and habitats of Community interest; 1 NAT project improves the coherence of the Network sites; 1 NAT project includes actions to combat invasive alien species; 2 GIE projects contribute to the fight against environmental crime; and 1 GIE project aims to build capacity among the agencies managing Natura 2000 sites.
Integrated projects	€10,200,000	€6,800,000	Approval has been granted for one integrated project designed to implement the PAF 2014-2020 in Greece. Specifically, the project includes actions to implement Management Plans in Natura sites, implement action plans for species/habitats of Community interest, map ecosystem services, build capacity, raise awareness on the Natura 2000 network, and coordinate financing for the Natura 2000 sites.
NGO operating grants	€672,000	€448,000	One NGO has received funding for operating costs. This NGO aims to improve the management of Natura 2000 sites, especially of coastal and marine Protected Areas, and supports the development of a new "water agenda" in the Mediterranean.
Subtotal	**€26,841,605**	**€14,099,439**	
TOTAL		**€40,941,044**	

*For LIFE projects having a multinational partnership, only the budget for Greece is reported.

D.5 Other EU funds, including Interreg:

Total EU co-funding allocated from other EU programmes for the implementation of EU nature policy and associated green infrastructure in the Member State/region: **€7,295,081**

Total national/regional funding allocated for the co-funding of these measures: **€1,287,367**

INTERREG projects contributing to the conservation and restoration of habitats and species of Community interest, and to the integrity of Natura 2000 sites or network coherence.

FIRE DETECTION project – €350,821 of EU funding and €61,910 of national co-funding

eOUTLAND project – €694,596 of EU funding and €122,576 of national co-funding

BIO2CARE project – €488,284 of EU funding and €86,168 of national co-funding

FORPRO project – €168,300 of EU funding and €29,700 of national co-funding

BatsConserve project – €145,715 of EU funding and €25,714 of national co-funding

CEA project – €536,056 of EU funding and €94,598 of national co-funding

WILD LIFE FOR EVER project – €518,646 of EU funding and €91,526 of national co-funding

VINESOS project – €383,989 of EU funding and €67,763 of national co-funding

TRITON project – €340,472 of EU funding and €60,083 of national co-funding

RE.CO.RD project – €316,706 of EU funding and €55,889 of national co-funding

BIOPROSPECT project – €469,368 of EU funding and €82,830 of national co-funding

RECONNECT project – €521,657 of EU funding and €92,057 of national co-funding

WetMainAreas project – €365,501 of EU funding and €64,500 of national co-funding

ACT4LITTER project – €136,367 of EU funding and €24,065 of national co-funding

EcoSUSTAIN project – €301,417 of EU funding and €53,191 of national co-funding

MEDSEALITTER project – €345,347 of EU funding and €60,944 of national co-funding

PHAROS4MPAs project – €92,191 of EU funding and €16,269 of national co-funding

PlasticBusters MPAs project – €1,037,758 of EU funding and €183,134 of national co-funding

POSBEMED project – €81,889 of EU funding and €14,451 of national co-funding

D.6 Other (mainly national) funding for Natura 2000, green infrastructure and species protection in 2014-2020:

Total financing allocated to implementation of EU nature policy and associated green infrastructure, for measures or projects not benefiting from any EU co-funding: **€60,511,418**

The following funds pertain to the financing of nature-related projects by the Green Fund, running costs for the Protected Areas Management Bodies covered by the Green Fund and the MEEN, and compensations paid to farmers and livestock breeders for damages caused by the species *_Ursus arctos_* and *_Canis lupus_*:

- Operating costs: €28,484,811 (PAMB payrolls and running costs);

- Site monitoring: €59,564;

- Awareness/education actions: €331,651;

- Species/habitat protection actions (incl. Studies) not funded by the EU: €391,718;

- Actions in forests inside and outside the Natura network: €22,217,883[*1];

- Actions for marine areas inside and outside the Natura network: €2,822,868[*1];

- Compensations against damage caused by protected animal species: €6,202,923[*2].

[*1]These pertain to the Green Fund funding programmes "PROTECTION AND RESTORATION OF FORESTS" and "PROTECTION OF MARINE ENVIRONMENT AND PREVENTION/MANAGEMENT OF MARINE POLLUTION".
[*2]Data for the period 2014-2017 and estimates for the period from 2018 to September 2019.

E. Priority measures and financing needs for 2021 – 2027

E.1. Horizontal measures and administrative costs related to Natura 2000

E.1.1. Site designation and management planning

Current status and progress made so far in terms of site identification, designation and management planning (situation: 30 September 2019)

The Natura 2000 network in Greece is, to a considerable degree, complete, covering an area of 58,859 km^2 and comprising 446 terrestrial and marine areas: 215 SACs, 181 SPAs, 24 both SAC and SPA, 24 SCIs, and 2 both SCI and SPA. SACs were established by Law 3937/2011, and SPAs by Joint Ministerial Decision 37338/1807/2010 (Government Gazette 1495 B), as amended and supplemented by Joint Ministerial Decision 8353/276/E103/2012 (Government Gazette 415 B).

The network was officially extended in 2017 by Joint Ministerial Decision 50743/2017 (Government Gazette 4432 B), titled "*Revision of the national list of sites of the European Natura 2000 network*", which included a total of 32 new Natura 2000 sites, and updated and amended the boundaries of 63 existing sites. The network was extended using the results of the project titled "*Monitoring and assessment of the conservation status of species and habitat types of Community interest in Greece*", which was co-funded by the European Regional Development Fund (ERDF) in the context of the Operational Programme "*Environment and sustainable growth*" and implemented by the MEEN Department of Biodiversity and Protected Areas in the period 2014-2015.

Now, the Natura 2000 network covers 27.59% of the country's land area and 19.6% of its marine territory. Additions of new sites or extensions of existing ones may only result from projects coordinated by the MEEN, through actions of the LIFE Nature or other relevant projects that will establish the necessity of such changes.

To improve the mapping of Natura 2000 sites, a project titled "*Developing large-scale (1:5,000) spatial data infrastructure for protected terrestrial areas of the Natura 2000 network*" was implemented. The project was funded by the ERDF in the context of the operational programme "*Digital convergence - Partnership Agreement for the Development Framework 2007-2013*", and its objective was to more accurately specify the outer

boundaries of terrestrial SCIs and SPAs, as well as update, describe, and map the terrestrial habitat types in 241 SCIs of the Natura 2000 network at a scale of 1:5,000.

In the context of the project titled "*Monitoring and assessment of the conservation status of species and habitat types of Community interest in Greece"*, Specific Conservation Objectives for species and habitat types were proposed. However, the Conservation Objectives have not been officially established nor included in national environmental law by the competent Greek authorities as per the provisions of the Habitats Directive. The reason for not officially establishing the proposed Conservation Objectives was the uncertainty regarding several species and habitat types due to insufficient primary data and the limited time of field data collection. This gap will be covered by the integrated project LIFE-IP 4 Natura, in the context of which a specific action will be implemented to assess, revise, and update these proposed Conservation Objectives as necessary. The deliverable will be used by the MEEN so that the updated Conservation Objectives may be officially established in relevant Ministerial Decisions.

As of 2020, Management Plans had been established for only three Natura sites (GR1220009 LIMNES KORONEIAS - VOLVIS, STENA RENTINAS KAI EVRYTERI PERIOCHI, GR3000003 ETHNIKO PARKO SCHINIA - MARATHONA, and GR4320003 NISOS CHRYSI). At the same time, Presidential Decrees or Joint Ministerial Decisions have established permitted and prohibited activities for some of the areas assigned to the PAMBs. In the period 2019-2021, implementation was underway for the projects "*Development of Special Environmental Studies and Management Plans for the Natura 2000 network sites" and "Technical and scientific coordination for the development of Special Environmental Studies, draft Presidential Decrees, and Management Plans for the Natura 2000 network sites",* funded by the Operational Programme "Transport Infrastructure, Environment And Sustainable Development" 2014-2020 (NSRF); project deliverables include the necessary Special Environmental Studies, the draft Presidential Decrees, and the Management Plans for all the Natura 2000 network sites in Greece (i.e., all 446 sites of the Natura 2000 network).

These projects will provide an institutional safeguard for Protected Areas in Greece and outline zones of designated use and activities; at the same time, many of Greece's obligations according to the EU Directives on nature will be met.

		Number of sites with:		
Sites of Community Importance (SCIs) under the EU Habitats Directive	**Number of sites**	**legal designation (SAC or equivalent)**	**specific site level conservation objectives**	**specific site level conservation measures**
Eastern Macedonia and Thrace	**22**	**20**	**0**	**0**
Attica	**11**	**8**	**0**	**1**
North Aegean	**12**	**11**	**0**	**0**
Western Greece	**27**	**26**	**0**	**0**
Western Macedonia	**14**	**12**	**0**	**0**
Epirus	**16**	**16**	**0**	**0**
Thessaly	**16**	**16**	**0**	**0**
Ionian Islands	**15**	**12**	**0**	**0**
Central Macedonia	**34**	**33**	**0**	**0**
Crete	**28**	**27**	**0**	**0**
South Aegean	**33**	**28**	**0**	**0**
Peloponnese	**25**	**22**	**0**	**0**
Central Greece	**20**	**15**	**0**	**0**
Total*	**239**	**215**	**0**	**1**

*There is a total of 239 SCIs in Greece. However, the sum of SCIs in all regions does not coincide with this number, as the boundaries of some SCIs extend over more than one region.

Special Protection Areas (SPAs) under the EU Birds Directive	Number of sites	Number of sites with: legal designation (SAC or equivalent)	specific site level conservation objectives	specific site level conservation measures
Eastern Macedonia and Thrace	17	17	0	17
Attica	10	10	0	10
North Aegean	17	17	0	17
Western Greece	12	12	0	12
Western Macedonia	8	8	0	8
Epirus	13	13	0	13
Thessaly	19	19	0	19
Ionian Islands	5	5	0	5
Central Macedonia	21	21	0	21
Crete	25	25	0	25
South Aegean	28	28	0	28
Peloponnese	8	8	0	8
Central Greece	16	16	0	16
Total*	181	181	0	181

*There is a total of 181 SPAs in Greece. However, the sum of SPAs in all regions does not coincide with this number, as the boundaries of some SPAs extend over more than one region.

Special Protection Areas and Sites of Community Importance (SPA/SCI)	Number of sites	Number of sites with: legal designation (SAC or equivalent)	specific site level conservation objectives	specific site level conservation measures
Eastern Macedonia and Thrace	2	2	0	2
Attica	1	1	0	1
North Aegean	0	0	0	0
Western Greece	3	3	0	3
Western Macedonia	4	4	0	4
Epirus	4	4	0	4
Thessaly	4	4	0	4
Ionian Islands	4	4	0	4
Central Macedonia	4	4	0	4
Crete	1	1	0	1
South Aegean	3	3	0	3
Peloponnese	1	1	0	1
Central Greece	1	1	0	1
Total	26	26	0	26

*There is a total of 26 SPA/SCI sites in Greece. However, the sum of SPA/SCI sites in all regions does not coincide with this number, as the boundaries of some SPA/SCI sites extend over more than one region.

Further measures needed

Further required measures with regard to designating and managing Natura 2000 network sites for the next financing period pertain to:

- Designating new Natura 2000 sites / extending existing Natura 2000 sites

- Mapping of habitats, species core areas and species sensitivity to damaging human activities and pollution, a critical coastal zone, ecological corridors to improve network coherence and halt the fragmentation of ecosystems, etc., including studies that will establish the need to implement actions/interventions/arrangements for the protection of species and habitat types of Community interest

- Updating Management Plans for Natura 2000 sites

- Establishing and passing legislation on spatial, seasonal, and other management measures to decrease the effects of human activities on species and habitat types of Community interest, including birds

Prioritization of measures to be implemented during the next MFF period

All the measures listed in the following table are prioritised by Greece for the period 2021-2027, to appropriately manage the Natura 2000 network.

List of prioritized measures to be carried out, and estimated costs for these measures

E.1.1

Name and short description of the measures	Type of measure	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source [12]
1. Designating new Natura 2000 sites / extending existing Natura 2000 sites, including SPAs and marine areas	One-off	€45,429	National level	CF, ERDF, EMFF, LIFE
2. Updating Management Plans for the entire Natura 2000 network (446 sites)	One-off	€171,429	National level	CF, ERDF, LIFE
3. Mapping habitats within the 181 Special Protection Areas (SPAs) of the Natura 2000 network	One-off	€85,714	National level	CF, ERDF
4. Mapping critical habitats and core areas of trigger species, as well as sensitivity zones (national mapping programme)	One-off	€171,429	National level	CF, ERDF
5. Mapping the ecological corridors that may contribute to the coherence of the Natura 2000 network (delimitation, potential inclusion of ecological corridors under special status, and effective management thereof)	One-off	€51,429	National level	CF, ERDF, LIFE, INTERREG
6. Phenology description for 31 huntable species (collection of information, direct surveillance/monitoring, ringing)	One-off	€171,429	National level	CF, ERDF
7. Mapping the sensitivity of wild bird species groups (large raptors, Ciconiiformes, Pelecaniformes, heron-like birds, Anseriformes, seabirds) and Chiroptera with regard to works and activities that may cause disturbance with severe consequences (electrocution on power lines, collisions with renewable energy sources, interactions with fish farms, the national road network, etc.)	One-off	€428,571	National level	CF, ERDF, EMFF, LIFE
8. Assessing the degree of habitat fragmentation by the road network, and proposing relevant measures	One-off	€25,714	National level	CF, ERDF, LIFE, INTERREG
9. Mapping seabird sensitivity to marine pollution and maritime traffic (working with fishers, creating a volunteer network, monitoring colonies and coasts, analysing stomach contents)	One-off	€17,143	National level	CF, ERDF, LIFE, INTERREG
10. Planning, establishing, and implementing spatial management measures (specifying exclusion zones, low speed limits in specific zones within the critical habitats of *Ziphius cavirostris* and *Physeter macrocephalus*) to minimise the effects of shipping (ship strikes) and human-induced marine underwater noise and noise pollution (shipping/ seismic surveys/ military exercises), with an emphasis on cetacean critical habitats	One-off	€102,857	National level	CF, ERDF, LIFE, INTERREG
11. Documenting and establishing institutional protection of habitat types 1120*, 1180, and deep subtypes 1110, 1140, 1160, and 1170 from destructive fishing practices	One-off	€17,143	National level	EMFF
12. Mapping critical coastal zone boundaries (over 15,147 km of coastline), and recording pressures and threats	One-off	€514,286	National level	CF, ERDF

Expected results

The PAF priority measures aim to ensure the appropriate management of Natura 2000 sites. Specifically, it is anticipated that updating the Management Plans for Natura 2000 sites and establishing both site- and national-level Conservation Objectives for all species/habitat types of Community interest will help define the necessary measures to be implemented in the Natura 2000 network sites.

Measures related to mapping will allow the competent authorities to plan conservation measures more accurately, issue opinions on construction works based on updated and accurate geospatial data, implement monitoring programmes, and issue regulatory provisions while taking new data into account.

With regard to the marine environment, the PAF measures will help mitigate the negative effects of human activity that significantly deteriorate marine ecosystems and habitat types of Community interest (human-induced marine underwater noise, oceanic shipping, marine pollution, etc.).

Additionally, the degree of habitat fragmentation by the road network will be assessed, and actions will be specified to improve the conservation status of the habitats of protected species; these actions will be implemented through other measures (tables of measures in section E.2).

Last, the PAF includes measures for designating and extending sites in the Natura 2000 network, with the network completion at national level as the anticipated result.

[12] CF: Cohesion Fund, ERDF: European Regional Development Fund, EARFD: European Agricultural Fund for Rural Development, EMFF: European Maritime and Fisheries Fund, ESF: European Social Fund, CLLD: Community-Led Local Development (LEADER)

E.1.2. Site administration and communication with stakeholders

Current status and progress made so far in terms of site administration and communication with stakeholders

(A) Management of the Natura 2000 network sites

Managing the Natura 2000 network sites is based on:

1. National laws protecting the natural environment of species and habitats of national and Community interest, as well as an administrative framework for Natura 2000 sites. National law is fully harmonised with EU Directives on nature protection, while more recent legislation (Law 3937/2011, Law 4519/2018, and Law 4658/2020) was issued as significant legal frameworks updating both the Protected Areas governance system and Greece's priorities concerning the protection of biodiversity.

2. The operation of the NECCA and PAMUs. The PAMUs are organic, decentralised units of the NECCA responsible for managing the Natura 2000 network sites. All the sites of the Natura 2000 network in Greece (99.78%, 445 out of 446 sites) are covered by the uniform PAMU system, as they fall within the territorial jurisdiction of its 24 Units and 12 Branches. The only site currently not assigned to a PAMU is the Mount Athos peninsula. The responsibilities of PAMUs include:
(a) Participating in the preparation, implementation, monitoring, evaluation and updating of Protected Areas Management Plans, as well as monitoring the status of species and habitat types of international, Community and national interest in the areas of their territorial jurisdiction;
(b) Compiling annual reports on the Protected Areas of their territorial jurisdiction;
(c) Preparing studies and conducting research, as well as contributing towards the implementation of technical works or other projects that are necessary for the protection, conservation, restoration, and promotion of Protected Areas, as set out in the relevant Management Plans;
(d) Consulting with local communities, the primary sector and any stakeholder involved within their areas, in order to facilitate integrated management, effective protection and promotion of the values of Protected Areas, as well as the inclusion of environmental parameters in local development standards and programmes;
(e) Informing and raising awareness among the public and primary sector organizations about issues relevant to the work and objectives of the NECCA. In this context, the PAMUs can establish and operate information centres and undertake relevant publishing activities in printed or digital format.
(f) Organising and participating in training and educational programmes, as well as conferences, workshops, seminars, and other informative events, with the aim of promoting and highlighting the objectives of protected area management;
(g) Assisting in the monitoring of environmental legislation implementation, as well as of the specific terms and regulations that are in place in each area;
(h) Participating in local fire prevention planning in collaboration with the MEEN and the Ministry of Citizen Protection;
(i) Preparing Local Priority Action Plans, which define the needs and funding priorities related to the management of protected areas and the maintenance of a good degree of conservation for habitats;
(j) Collecting scientific information and reliable statistical data derived from research and other programmes carried out in their areas of jurisdiction, and building an appropriate infrastructure of thematic and spatial databases of data relevant to the protected species and habitats within their jurisdictions;
(k) Proposing financial tools and revenues from ecotourism and other activities in order to showcase local products of the primary sector and implement projects and actions aimed at promoting regional and local development;
(l) Participating in the implementation of national, European or international programs and actions that are related to their jurisdictions and will promote the objectives of the PAMUs;
(m) Drafting Protection Plans for their areas of jurisdiction, working with the competent authorities through memoranda of cooperation, and monitoring their implementation;
(n) Concluding programme agreements and memoranda of cooperation with other public services and bodies;
(o) Promoting, supporting, organising, and implementing ecotourism actions, as well as approving guided tours in the Protected Areas within their jurisdictions.
3. The operation of the "Nature 2000" Committee. The Committee is the Government's central scientific advisory body responsible for coordinating, monitoring, and assessing the policies and measures for the protection of

biodiversity in Greece. Its members are representatives of the scientific community, the administration, and environmental Non-Governmental Organisations (NGOs), appointed for a term of 3 years. Its main responsibility is to oversee the compliance and effective implementation of the provisions of the Habitats Directive (92/43/EEC). It also acts as the National Protected Areas Committee with the aim of coordinating, monitoring and assessing the planning, organising and operating procedures of the National System for the Governance and Management of Protected Areas.

4. The established Management Plans for the Natura 2000 network sites. By 2021, Management Plans will have been drafted for the Natura 2000 sites of Greece through the projects titled *"Development of Special Environmental Studies and Management Plans for the Natura 2000 network sites" and "Technical and scientific coordination for the development of Special Environmental Studies, draft Presidential Decrees, and Management Plans for the Natura 2000 network sites"*; these Plans are expected to be established within the current financing period.

5. Management Plans in other fields, for instance, Grazing Management Plans, and Thematic Management Plans for the agricultural sector in Protected Areas, which are carried out in several sites of the Natura 2000 network within the current financing period.

It should be noted that Greece has in place a national system of insurance pay-outs to farmers and livestock breeders for damages caused exclusively by large carnivores, such as **Ursus arctos* and **Canis lupus*, both species of Community interest. Damages are estimated and payments are made by the Greek Agricultural Insurance Organisation (ELGA). Although the institutional framework also mentions other species of Community interest (e.g., marine mammals), these are not included in the wildlife category, therefore they are not considered insured risks.

B) Communication with stakeholders

As the competent authority for drafting new legislation on the management of Natura 2000 sites, the MEEN is obligated to take action for communicating and consulting with co-competent authorities, stakeholders and other involved parties, according to the applicable national and EU law. To this end, the following actions have been carried out:

1. To include new Natura 2000 sites and expand the boundaries of existing sites, the competent Ministry (the MEEN) organised a long consultation procedure with stakeholders, the public, and with co-competent authorities of the public administration. In the context of this procedure, opinions were issued by the "Nature 2000" Committee and all co-competent Ministries. Following the proposal submitted by the contractor of the project titled "*Monitoring and assessment of the conservation status of species and habitat types of Community interest in Greece"* and according to the proposals formed through the consultation, the MEEN proceeded to include the new sites and modify the boundaries of existing ones by Joint Ministerial Decision 50743 (Government Gazette B 4432/2017) in 2017.

2. Additionally, the necessary and stipulated procedure of consultation with all the stakeholders and involved parties had preceded the legislative acts (Ministerial Decisions, Government Gazette B 3760/25.10.17, B 3761/25.10.17, and B 3762/25.10.17) bringing into force the three Action Plans for *Falco naumanni*, *Anser erythropus*, and *Nephron percnopterus*.

3. Last, many seminars and training workshops are organised in the context of numerous LIFE, Interreg, or other projects funded by the Green Fund. Training stakeholders in the management of Natura 2000 sites, the relevant legal framework, and financing is among the main actions of LIFE-IP 4 Natura.

4. In an effort to improve the capabilities and operational capacity of the Protected Areas Management Bodies in implementing targeted actions for the conservation and protection of species and habitat types of Community interest in Natura 2000 sites, the MEEN has organised educational seminars and workshops to train the Bodies' employees, with participating experts and scientists from academic and research institutions, environmental organisations, etc.

Further measures needed

Measures needed for site administration and communication with stakeholders in the next financing period pertain to:

- Creating appropriate frameworks/infrastructure to connect the diverse management and thematic plans (grazing management plans, forest management plans, Natura 2000 sites management plans, etc.) as well as collect, store and process data relevant to the Natura 2000 sites, and improve the environmental licensing procedure;

- Supporting the operation of the "Nature 2000" Committee, the establishment of an administrative unit for the Natura 2000 terrestrial area of the Mount Athos peninsula, as well as the smooth operation of the NECCA and its PAMUs;

- Implementing measures to improve the protection of aquatic, coastal, agricultural, marine species and habitat types, and also the fish fauna of Community interest, through the collaboration of competent authorities and stakeholders in the sectors of fisheries, trade and movement, agricultural and livestock production, etc.;

- Developing studies to assess the damages sustained by the fisheries sector and propose measures for the management of conflict with marine mammals, reptiles and birds, as well as describe the necessary changes in subsidies for grazing and supporting livestock breeders;

- Training the employees of the authorities responsible for managing Natura 2000 sites, drawing up strategies and proposals for tourism and ecotourism, as well as creating a national certification system for products grown or manufactured within the Natura network.

Prioritization of measures to be implemented during the next MFF period

All the measures listed in the following table are prioritised by Greece for the period 2021-2027, to the end of appropriately managing the Natura 2000 network.

List of prioritized measures to be carried out, and estimated costs for these measures

E.1.2

Name and short description of the measures	Type of measure	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
1. Creating a framework to connect all the Management Plans implemented in Natura 2000 sites (grazing management plans, forest management plans, Natura 2000 sites management plans, etc.)	One-off	€3,429	National level	CF, ERDF
2. Organising and supporting a Management Body for the Protected Area of Mount Athos	Recurrent	€42,857	Central Macedonia	
3. Operating the "Natura 2000" Committee in the context of the Natura 2000 Network (member travels, meeting costs)	Recurrent	€17,143	National level	
4. Combating the trade of species of Community interest (monitoring e-commerce, providing legal support for legal action against the responsible parties, informing/training the competent investigating authorities and stakeholders)	Recurrent	€71,429	National level	CF, ERDF, ESF, LIFE, INTERREG, ERASMUS
5. Assessing and improving the environmental licensing procedure (according to Article 6.3) for Natura 2000 sites	One-off	€3,429	National level	CF, ERDF
6. Developing and initially operating a system for the integration of field data from special ecological assessments in the National Monitoring System for Natura 2000 sites, and designing a platform for assessing synergistic effects	One-off	€34,286	National level	CF, ERDF
7. Maintaining and importing new/updated biodiversity data (e.g., mapping marine habitat types) and human activity data (e.g., wind farms, quarries, aquaculture) into the Decision-making Support System for the management of Natura 2000 sites, developed in the context of LIFE IP 4 Natura	Recurrent	€12,000	National level	CF, ERDF, LIFE, INTERREG
8. Drafting standards for environmental monitoring during the construction and operation of projects requiring environmental licensing	One-off	€3,429	National level	CF, ERDF
9. Creating a National Certification System for agricultural, livestock, fishery, and fish farming products produced or manufactured within the NATURA 2000 network, and training Protected Areas Management Bodies employees to implement and promote the System	One-off	€24,286	National level	EARFD, EMFF, ESF
10. Training seminars on the management of Natura 2000 sites, the relevant legal framework, and financing (therefore continuing the implementation of LIFE IP 4 Natura actions after the programme has concluded). Creating information material and organising events for the education and awareness of stakeholders and people involved in the production process (e.g., workshops, dialogue events, e-learning, webinars)	Recurrent	€51,429	National level	ESF, INTERREG, ERASMUS
11. Implementing measures to limit the illegal fishing, trade, and consumption of marine invertebrates of Community interest (*Pinna nobilis* and *Lithophaga lithophaga*) by informing stakeholders (competent enforcement	One-off	€8,571	Western Greece	CF, ERDF, EMFF, LIFE, INTERREG
	One-off	€8,571	Epirus	
	One-off	€8,571	Ionian Islands	

Name and short description of the measures	Type of measure	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
authorities, fishers, fishmongers, catering businesses) and consumers				
12. Providing equipment for the implementation of monitoring, protection, and other actions for species of Community interest and Natura 2000 sites	One-off	€771,429	National level	CF, ERDF
13. Mapping the status of ecosystems and relevant agencies in the 181 Special Protection Areas (SPAs) of the Natura 2000 network	One-off	€85,714	National level	CF, ERDF, LIFE, INTERREG
14. Mapping aquatic and coastal ecosystems (including 1130, 1150*, 1310, 1410, 1420, 1440, 1510*, 2120, 2190, 3130, 3140, 3150, 3170*) outside the Natura 2000 network, to the end of conserving, protecting and managing these ecosystems to promote the coherence of the network	One-off	€342,857	National level	CF, ERDF, INTERREG
15. Accurately mapping Posidonia beds (at a scale of 1:1,000) to support protection and restoration actions in at least 3 SCIs-SACs under pressure	One-off	€1,714	Attica	CF, ERDF, EMFF, LIFE
	One-off	€1,714	South Aegean	
	One-off	€1,714	Ionian Islands	
16. Integrating the most up-to-date mapping of marine SCI/SPA/SCAs and habitat types into the maps of the Hellenic Navy Hydrographic Service	One-off	€1,714	National level	CF, ERDF
17. Drafting thematic management plans for the agricultural sector in Protected Areas, for sites not covered by such plans during the period 2014-2020	One-off	€21,429	National level	EAFRD
18. Developing a study to support grazing as a management practice in semi-natural habitat types, mainly 6110*, 6220*, 6230*	One-off	€25,714	National level	CF, ERDF, EAFRD, LIFE
19. Developing a study to make use of marginal agricultural land to produce feed materials with the use of wild flora and native varieties	One-off	€8,571	Crete	CF, ERDF, EAFRD, LIFE
20. Studying/proposing measures to change the method of providing Single Farm Payments to livestock breeders to halt the degradation of terrestrial ecosystems where grazing is allowed	One-off	€2,857	Crete	CF, ERDF, EAFRD
21. Supporting strategies to prevent forest fires in terrestrial habitats of Community interest by combining wildfire modelling and high-resolution satellite data at operational level in Greece	One-off	€44,571	National level	HORIZON
22. Drafting an Action Plan to prevent/address interactions between fisheries and marine mammals, reptiles, and birds	One-off	€77,143	National level	EMFF, LIFE, INTERREG
23. Developing a study to assess the financial damage sustained by the fishery/fish farming sectors due to marine mammals, reptiles, and birds, and also by other production activities (livestock farming, agriculture) due to species of Community interest, and inclusion of such damage in the "Wildlife" insurance risk category	One-off	€17,143	National level	CF, ERDF, EAFRD, EMFF, LIFE
24. Developing a study to define management measures for the conservation of fish species of Community interest in river segments with large dams within Natura 2000 sites	One-off	€49,714	National level	CF, ERDF
25. Developing plans to promote ecotourism in 20-30 Protected Areas with increased tourism activity	One-off	€64,286	National level	CF, ERDF
26. Developing a national strategic plan to organise and promote tourism in Natura 2000 sites	One-off	€14,286	National level	CF, ERDF

Expected results

The PAF priority measures aim to develop the right tools to ensure the appropriate management of Natura 2000 sites. Additionally, the system that will support decision making with regard to environmental licensing for projects and activities in Natura 2000 sites will offer an assistance to stakeholders, while accelerating and streamlining the relevant procedures.

What is more, the integrated strategy for the prevention of forest wildfires in Natura 2000 sites will mitigate the severe consequences of wildfires on forest ecosystems and species/habitat types of Community interest, while the development of studies and maps will contribute to a more appropriate management of the sites and to the implementation of horizontal management measures. With regard to the marine environment, the PAF measures will help decrease the anthropogenic mortality and bycatch of marine mammals, reptiles and birds related to fishing and other activities with significant effects on these species' populations (shipping, marine underwater noise and pollution, etc.).

With regard to subsidies from the National Fund for Rural Development, the measures are expected to provide the necessary guidance to support agricultural and livestock breeding farms during the forthcoming financing period 2021-2027, to improve the conservation status of species and habitats.

With regard to informing stakeholders, the training seminars based on the actions implemented in the context of LIFE-IP 4 Natura will continue and expand to other regions, increasing the potential and capacity of public administration and all the stakeholders in effectively managing the network and protecting species and habitat types of Community interest.

Last, there are provisions for implementing measures to promote mild and sustainable forms of tourism, as well as contribute to the joint and effective planning of development projects related to tourism and other stakeholders and competent authorities in the Natura 2000 network.

E.1.3. Monitoring and reporting

Current status and progress made so far in terms of monitoring and reporting

The competent national authority for the submission of national reports according to Article 17 of Directive 92/43/EEC and Article 12 of Directive 2009/147/EC is the MEEN, and the competent authority for monitoring the drafting of the report is the Directorate of Natural Environment Management and Biodiversity / Department of Protected Areas.

The report according to Article 17 of the Habitats Directive and Article 12 of the Birds Directive for the period 2007-2012 was drafted in the context of the project titled "*Monitoring and assessment of the conservation status of species and habitat types of Community interest in Greece"*, which was co-funded by the ERDF Operational Programme "Environment and sustainable growth" (NSRF 2007-2013) and delivered in 2015. In the context of this project, extensive field work was carried out and, for the first time, information on all the species and habitat types of Community interest (including birds) of Greece within the Natura 2000 network was collected in a coordinated, systematic manner, during the same period, and with shared defined protocols of data collection and analysis. For the first time thanks to the project results, a comprehensive overview at national level was obtained of the conservation status, trend, range, distribution, threats, and pressures for all the species and habitat types of Community interest (including birds).

The report according to Article 17 of the Habitats Directive and Article 12 of the Birds Directive for the period 2013-2018 was drafted and delivered in 2019. To draft these reports, the competent authorities contacted scientists from the academic and research community, as well as environmental NGOs, to collect information and record changes compared to the reports of the previous period. The reporting forms for all species and habitat types of Community interest (including birds) were also made available for public consultation, so that all research institutions would be able to contribute to the report.

For the next reporting period 2019-2024, the MEEN issued a call for tender on 30 November 2020 for the project titled "Monitoring and assessment of the conservation status of protected species and habitats in Greece". The project will focus on assessing the degree and status of conservation of protected species (including birds) and habitat types of national and Community interest, to define Favourable Reference Values, assess any protection measures that have been implemented, update the database for the Natura 2000 network (including references, primary data, and standardised data forms) for each item under protection, and organise an integrated monitoring system. The project budget is €11.1 million, to be provided by the Cohesion Fund through the Operational Programme "Transport Infrastructure, Environment and Sustainable Development" for a duration of 26 months.

Last, it should be noted that many stakeholders and involved parties (academic and research institutions, environmental organisations, Protected Areas Management Bodies, etc.) are carrying out monitoring actions for numerous species (including birds) and habitat types of Community interest, therefore collecting data on their conservation status, biology, and ecology. The data collected by these parties contribute in a supportive and supplementary manner, but at times also critically, to the knowledge on the conservation status of species and habitat types of Community interest at both national and site level.

Further measures needed

Measures needed for monitoring and reporting during the next financing period pertain to:

- Operating a permanent national system for monitoring species and habitat types, which will also contribute to the drafting of reports according to Directives 92/43 and 2009/147

- Developing a common monitoring framework for reporting according to EU Directives on the protection of natural environment (the Habitats Directive, the Birds Directive, the Water Directive, the Marine Strategy Framework Directive, etc.)

- Mapping marine habitat types and recording the loss and degradation of sand dune habitats through time

- Implementing specialised actions for monitoring bird fauna (migration phenology, sea birds, farmland birds, etc.), large carnivores (**Canis lupus*, **Ursus arctos*), mammals in forest ecosystems, sea reptiles and marine species at imminent risk of extinction (*Pinna nobilis*)

- Organising and operating actions for monitoring insects and reptiles through citizen science

Prioritization of measures to be implemented during the next MFF period

All the measures listed in the following table are prioritised by Greece for the period 2021-2027, to the end of appropriately managing the Natura 2000 network.

List of prioritized measures to be carried out, and estimated costs for these measures

E.1.3

Name and short description of the measures	Type of measure	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
1. Operating a permanent national system for monitoring species and habitat types, and drafting reports according to Article 12 of the Birds Directive and Article 17 of the Habitats Directive	Recurrent	€2,674,286	National level	CF, ERDF
2. Reviewing the main provisions of Directives 2000/60/EC, 2008/56/EC, 92/43/EEC, 79/409, and 2007/60/EC to develop a common monitoring framework. Organising seminars to train and inform the relevant public administration agencies.	One-off	€34,286	National level	CF, ERDF, INTERREG
3. Updating the maps of habitat types in the 63 expanded SCI/SACs	One-off	€34,286	National level	CF, ERDF
4. Mapping marine habitat types (1110, 1120*, 1130, 1140, 1150*, 1160, 1170, 1180, 8330) and creating a spatial data infrastructure that will accurately depict the marine habitat types within the marine areas of the Natura 2000 network	One-off	€2,142,857	National level	CF, ERDF, LIFE
5. Developing a pilot system to inspect and monitor changes, as well as record risks and pressures, using remote-sensing tools and long-distance remote-sensing data in 2 Natura 2000 sites in order to appropriately manage and monitor these sites	One-off	€51,429	Eastern Macedonia and Thrace	CF, ERDF, INTERREG, HORIZON
6. Recording the loss and degradation of sand dune habitat types through time (habitat types 2110, 2120, 2190, 2220, 2230, 2250* & 2260) in the Natura 2000 sites of Western Crete, assessing the causes and proposing management measures	One-off	€50,000	Crete	CF, ERDF, INTERREG
7. Developing a Geographic Information System to assess and monitor the population of terrestrial mammal species of Community interest in forest ecosystems (building a platform to forecast the maximum number of individuals of a species in a site, and automatically identify species; developing a system for implementation of measures towards conservation and improvement of species populations)	One-off	€49,714	National level	INTERREG, HORIZON
8. Updating the national bear registry (database) to assess the population and genetic status of the brown bear (*Ursus arctos*) in Greece (collecting and analysing genetic samples)	Recurrent	€42,000	National level	LIFE
9. Providing population estimates for wolves (**Canis lupus*) by using indications of wildlife presence and genetic analysis, and studying the species' feeding patterns in 17 national parks	Recurrent	€302,743	National level	LIFE
10. Implementing actions to monitor the migrations of bird fauna (monitoring 3 stopover points and 3 bottlenecks per migrating period for 3 years), identifying significant stopover points and bottlenecks at national level, describing migration phenology and population trends for priority species	One-off	€108,000	National level	LIFE, INTERREG
11. Monitoring the distribution, abundance and demographic characteristics of important sea bird populations (*Larus audouinii*, *Phalacrocorax aristotelis desmarestii*, *Calonectris diomedea*, *Puffinus yelkouan*, and *Hydrobates pelagicus*)	Recurrent	€159,429	National level	EMFF, LIFE
12. Implementing actions to monitor population trends for 55 farmland bird species in Natura 2000 sites	Recurrent	€68,571	National level	EAFRD
13. Identifying migration corridors and feeding areas of the reproductive population of the sea turtle **Caretta caretta*, using satellite transmitters and stable isotope analysis in 4 important breeding beaches	One-off	€42,857	Crete	CF, ERDF, LIFE
	One-off	€87,429	Peloponnese	
14. Monitoring the sea turtle **Caretta caretta* in 2 important breeding and foraging areas for the species: collecting breeding data, recording pressures/threats, permanently tagging turtles with PIT tags/electronic identification, monitoring nesting and hatching	Recurrent	€71,429	National level	CF, ERDF, LIFE
15. Population estimates for *Pinna nobilis* and monitoring every three (3) years in areas important for the species (60 sites uniformly distributed all over Greece: 40 inside and 20 outside Natura sites)	One-off	€24,000	National level	CF, ERDF, LIFE
16. Recording and monitoring diurnal lepidoptera using citizen science, with a focus on the 10 species mentioned in Directive 92/43 within the Natura 2000 network (data collection via mobile application; link to the MEEN and the monitoring project; provision of training to volunteers, Management Bodies and public forestry agencies for data collection; database inspection and management)	Recurrent	€44,914	National level	CF, ERDF, LIFE, INTERREG, ERASMUS

Name and short description of the measures	Type of measure	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
17. Implementing actions to update, record, monitor, assess and identify the abundance and distribution of terrestrial turtles of Community interest (*Testudo graeca*, *Testudo hermanni*, *Testudo marginata*) using citizen science	Recurrent	€34,286	National level	CF, ERDF, LIFE, INTERREG, ERASMUS

Expected results

The proposed measures will contribute to establishing, organising and operating a permanent national system for monitoring the conservation status of species and habitats. This system will allow the timely drafting of national reports according to Articles 12 and 17 of the two relevant Directives using consolidated and updated information. It is also going to be the first and only coordinated, permanent, and continuously operating system for monitoring species, habitats, and birds at national level.

The measures for mapping marine habitat types, along with all other habitat types in the extended SCI/SACs, will contribute to supplement the existing knowledge and depict/map these habitats as parts of the Natura 2000 sites. This action will fill existing gaps and overcome weaknesses in the network, completing it and allowing more accurate monitoring thereof.

The measures will also facilitate the continuation of monitoring actions for specific organism groups and habitat types, for which specialised actions are required on behalf of research institutions and environmental NGOs (including monitoring using citizen science), to the end of contributing data to monitoring reports.

Last, the Directives directly or indirectly associated with the protection of the natural environment (the Habitats Directive, the Birds Directive, the Marine Strategy Framework Directive, the Water Directive, etc.) will be addressed in a uniform manner, mainly in terms of the monitoring framework, to develop synergies and collect field data without wasting resources, in a consolidated, streamlined manner, generate results for reporting according to all relevant Directives, and achieve significant economy of scale.

E.1.4. Remaining knowledge gaps and research needs

Current status

An initial overview of the conservation status at national level for all the species and habitats of Community interest (including birds), but also of all the different elements related to the conservation status, such as range, distribution, pressures, threats, population size and trend, etc., was obtained in 2015, following the completion of the project titled "*Monitoring and assessment of the conservation status of species and habitat types of Community interest in Greece"*, which was co-funded by the ERDF through the Operational Programme "Environment and sustainable growth" (NSRF 2007-2013).

Additionally, a significant number of EU-funded (e.g., LIFE, INTERREG) and nationally funded projects have been carried out and contributed, along with the project mentioned above, in the knowledge of species and habitat types of Community interest found in Greece. Some of these projects have led to proposed measures that were eventually implemented.

However, there is significant knowledge yet to be gained about a large number of species and habitat types. The conservation status of a total of 37 species and habitat types of Community interest remains unknown. Additionally, the population trend remains unknown for 140 species of Community interest, even though their conservation status is known. With regard to birds, the short-term trend is unknown for 49 species, while the long-term trend is unknown for 130 species. Therefore, along with the overall monitoring programmes implemented by the MEEN that were detailed in the previous section, it is necessary to carry out research programmes to acquire the required knowledge for the species and habitat types mentioned above.

Last, apart from the obligations pursuant to the Birds Directive and the Habitats Directive with regard to monitoring reports, there is a knowledge gap when it comes to the threats/pressures faced by many species/habitat types, which results in an inability to take management measures and implement conservation/restoration actions.

Further measures needed

Measures needed with regard to the remaining knowledge gaps and research needs during the next financing period pertain to:

- Developing studies to assess and describe the conservation status of species and habitat types of Community interest with an unknown status (XX) and birds included in Annex I with unknown population trends

- Describing the abundance, distribution, critical habitats, human-induced pressure and threats (fishery, marine underwater noise, shipping, pollution, etc.) regarding cetaceans

- Assessing the impact of climate change on sea reptiles, priority habitat types, and fish fauna

- Estimating the effects of marine pollution on sea birds

- Investigating emergency wildlife killing incidents

- Mapping the distribution and habitats of species of Community interest, lagoons, and abandoned mines, building a satellite data repository, associating habitat types with syntaxonomical vegetation units

Prioritization of measures to be implemented during the next MFF period

All the measures listed in the following table are prioritised by Greece for the period 2021-2027, to the end of covering the remaining knowledge gaps and research needs.

List of prioritized measures to be carried out, and estimated costs for these measures

E.1.4

Name and short description of the measures	Type of measure	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
1. Building a satellite data repository (collection, processing, and storage of 20,000 satellite observations, production of outputs, such as vegetation maps, land cover maps, changes in natural environment, etc.)	One-off	€171,429	National level	HORIZON
2. Associating habitat types with syntaxonomical vegetation units (data collection and processing, field work)	One-off	€12,857	National level	CF, ERDF
3. Describing the abundance, distribution, and critical habitats for the cetaceans *Balaenoptera physalus*, *Delphinus delphis*, *Grampus griseus*, *Phocoena phocoena*, *Physeter macrocephalus, Stenella coeruleoalba*, *Tursiops truncatus*, and *Ziphius cavirostris* in all the marine and coastal Natura 2000 sites designated for these species or hosting them	One-off	€514,286	National level	CF, ERDF, EMFF, LIFE, INTERREG
4. Developing studies to assess the conservation status of mammal species of Community interest with a currently unknown conservation status (*Balaenoptera physalus*, *Eptesicus serotinus*, *Felis sylvestris*, *Lynx lynx*, *Martes martes*, *Mustela putorius*, *Myomimus roachi*, *Myotis alcathoe*, *Myotis aurascens*, *Myotis daubentonii*, *Plecotus austriacus*, *Plecotus kolombatovici*, *Plecotus macrobullaris*, *Rhinolophus mehelyi*, *Sciurus anomalus*, *Stenella coeruleoalba*, *Vormela peregusna*)	One-off	€221,429	National level	CF, ERDF
5. Developing biology and ecology studies for birds with currently unknown population trends: 11 breeding species (*Alcedo atthis, Alectoris graeca, Bonasa bonasia, Ficedula semitorquata, Glaucidium passerinum, Hydrobates pelagicus, Lanius minor, Milvus migrans, Picoides tridactylus, Picus canus, Tetrao urogallus*) and 14 wintering species (*Aquila heliaca, Aythya nyroca, Branta ruficollis, Circus cyaneus, Falco cherrug, Falco columbarius, Gavia arctica, Gavia stellata, Grus grus, Limosa lapponica, Numenius tenuirostris, Otis tarda, Podiceps auritus, Tetrax tetrax*)	One-off	€85,714	National level	CF, ERDF
6. Developing specialised studies to assess the conservation status of terrestrial habitat types with a currently unknown conservation status (6260, 62D0, 7220*)	One-off	€17,143	National level	CF, ERDF
7. Developing specialised studies related to the ecology-biology-habitat of plant species mentioned in Directive 92/43 with an unknown conservation status (*Botrychium simplex*, *Centaurea immanuelis-loewii*, *Colchicum cousturieri*, *Consolida samia*, *Gladiolus palustris*, *Lindernia procumbens*, *Ramonda serbica*, *Solenanthus albanicus*, *Tozzia carpathica*)	One-off	€14,286	National level	CF, ERDF
8. Developing specialised studies related to the ecology-biology-habitat of fish species mentioned in Directive 92/43 with an unknown conservation status (**Acipenser sturio*, *Aspius aspius*, *Eudontomyzon graecus*, *Pelasgus thesproticus*, *Petromyzon marinus*)	One-off	€120,000	National level	CF, ERDF
9. Developing specialised studies related to the ecology-biology-habitat of reptile species mentioned in Directive 92/43 with an unknown conservation status (*Ophiomorus punctatissimus*)	One-off	€1,714	National level	CF, ERDF
10. Providing a genetic analysis for the sea turtle**Chelonia mydas* in the marine area of the Laconian Gulf	One-off	€3,429	Peloponnese	CF, ERDF, LIFE
11. Developing a study on the regulation of wave energy dissipation in correlation to the shape/size of reefs affecting the breeding habitats of	One-off	€3,771	Ionian Islands	CF, ERDF, HORIZON

Name and short description of the measures	Type of measure	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
**Caretta caretta* in one Natura 2000 site				
12. Assessing the effects of climate change on the sea turtle **Caretta caretta* in 12 Natura 2000 sites	One-off	€10,286	Ionian Islands	CF, ERDF, LIFE
	One-off	€3,429	Epirus	
	One-off	€5,143	Western Greece	
	One-off	€13,714	Peloponnese	
	One-off	€10,286	Crete	
13. Assessing the vulnerability of priority forest habitat types to climate change	One-off	€85,714	National level	LIFE, HORIZON
14. Assessing the effects of climate change on habitat type 2270*	One-off	€85,714	Western Greece	CF, ERDF, LIFE
	One-off	€42,857	Attica	
15. Assessing the effects of climate change on habitat type 6420	One-off	€42,857	Central Greece	CF, ERDF, LIFE
16. Developing a study to estimate the effects of climate change on fish species of Community interest in Greek rivers - defining management and protection measures	One-off	€6,171	National level	CF, ERDF, LIFE
17. Estimating, assessing, and mapping human-induced pressures and threats specifically related to fishing faced by small cetaceans (with an emphasis on the species *Phocaena phocaena* and *Tursiops truncatus*)	One-off	€85,714	National level	EMFF, LIFE
18. Estimating, assessing, and mapping human-induced pressures and threats faced by cetaceans (marine underwater noise caused by shipping, seismic surveys, military sonars, collisions with oceanic shipping vessels, installation of underwater marine renewable energy cables, etc.), with an emphasis to the two species significantly affected by these threats, i.e., *Physeter macrocephalus* and *Ziphius cavirostris*	One-off	€342,857	National level	LIFE, INTERREG, HORIZON
19. Compiling an inventory of abandoned mining sites in Greece and assessing their significance for Chiroptera and other species of Community interest	One-off	€8,571	National level	CF, ERDF, INTERREG
20. Investigating emergency wildlife killing incidents that have severe consequences for the conservation status of species of Community interest, including birds	One-off	€68,571	National level	CF, ERDF
21. Assessing the effects of marine litter on sea bird populations (collaborating with fishers, monitoring colonies, etc.)	Recurrent	€25,714	National level	CF, ERDF, EMFF, LIFE
22. Mapping the distribution and potential habitats of species of Community interest	One-off	€428,571	National level	CF, ERDF
23. Digitally mapping lagoons and capturing their hydrological networks in one Natura 2000 site, to the end of conserving habitat type 1150*, freshwater fish species, and amphibians	One-off	€17,143	Epirus	CF, ERDF, EMFF

Expected results

The knowledge gaps in Greece with regard to species and habitat types of Community interest remain significant, despite the progress achieved over the past years. The lack of reliable data not only prevents an assessment of the conservation status of species and habitat types, but also makes it extremely difficult to take management measures and implement actions to protect them. Therefore, filling these remaining knowledge gaps is critical for the effective management of the Natura 2000 network and the design of management and protection measures for species and habitat types.

The priority measures included in this section will help to fill gaps concerning the reports according to Article 17 of the Habitat Directive and Article 12 of the Birds Directive, regarding the conservation status of species and habitat types of Community interest and bird population trend, and, last, in the monitoring of habitat types and species habitats. The vulnerability of species and habitats that are sensitive to climate change will also be assessed, so that adaptation measures can be taken.

Additionally, several studies will be developed in order to contribute to the more appropriate spatial planning of projects and activities in Natura 2000 sites; these studies will result in proposed management measures for the conservation of species and habitats, or for the improvement of their conservation status.

Specifically for marine areas, studies will focus on reducing human-induced pressures and threats to species caused by fishing, marine litter, and other activities (e.g., marine underwater noise caused by shipping, military sonars, seismic surveys), as well as on investigating the causes and reducing the occurrence of mortality incidents among species of Community interest.

E.1.5. Natura 2000-related communication and awareness raising measures, education and visitor access

Current status

A national-level survey was carried out in the context of the LIFE-IP 4 Natura project to estimate the degree of awareness and knowledge regarding the Natura 2000 network among the general population. The same action also recorded prevailing perceptions on biodiversity and other concepts related to the protection of nature. According to the survey findings, a mere 37.6% of the Greek population has heard of the Natura 2000 network and knows what it is, while only half of the respondents that were aware of Natura sites also knew that the network and the EU Habitats and Birds Directives aim to protect species and their habitats. An encouraging finding was that 93.4% of the respondents considered the existence of Natura 2000 sites positive for the local communities. This demonstrates not only the need but also the considerable room for raising further awareness among the Greek population on the Natura 2000 network, the Birds and Habitats Directives, and on the need to protect and conserve species and ecosystems.

The beneficiaries of the integrated LIFE-IP 4 Natura project (including the competent authority for nature protection in Greece - MEEN) have designed and are currently implementing a national communication campaign that will help to clarify the provisions of the Birds and Habitats Directives, and promote the Natura 2000 network in Greece. This campaign also supports actions to disseminate the deliverables of the LIFE-IP 4 Natura project, specifically the Action Plans for 17 species (including 3 bird species) and one habitat type of Community interest, the ecosystem services, and the implementation of actions related to the management plans for Natura 2000 sites. Two tools will also be developed during the implementation of the same project:
1. The “Natura 2000 Greece” platform for the dissemination of information related to Natura 2000 sites in Greece, and
2. An online Public Participation Geographic Information System for visualising and monitoring ecosystem services.

Last, the actions of the LIFE-IP 4 Natura project include organising numerous events to celebrate the European Natura 2000 Day.

Along with actions implemented in the context of EU programmes, the Protected Areas Management Bodies are also responsible for communicating with/raising awareness among the population residing within their areas of responsibility. In this context, they carry out numerous actions, such as organising/participating in communication events, environmental education, educational activities for children, etc. These actions are carried out jointly with numerous other organisations, including public institutions, such as primary and secondary schools, universities, and research institutes, as well as environmental NGOs.

In the context of implementing EU- and nationally funded projects (NSRF, LIFE, etc.) in Greece, campaigns are organised to inform/raise awareness about the Natura 2000 network. The Protected Areas Management Bodies organise numerous communication actions: school visits, workshops, events, distribution of printed material, operation of information centres, etc. The Green Fund’s financial tool “Innovative actions with the citizens” finances policy development and implementation actions, or actions to communicate, educate, and raise awareness among the general population and/or specific population groups in issues concerning the environment, climate change, and actions to protect, and rehabilitate wildlife species into the natural environment.

It is important to mention that environmental NGOs have an extremely significant role in communicating/raising awareness among the population and providing environmental education by organising numerous relevant actions at both national and local level, using communication tools and awareness campaigns (e.g., TV, radio, printed and online press, social media), direct communication actions (e.g., workshops, educational/informational seminars and events, operation of information centres and stands) in Protected Areas of natural interest, or environmental education actions in schools and Environmental Education Centres run by local governments.

Further measures needed

Necessary measures with regard to Natura 2000-related communication and awareness raising, education and visitor access during the next financing period pertain to:

- Designing and implementing environmental interpretation projects, upgrading and expanding existing structures and signs, implementing communication/awareness raising/environmental education programmes within the sites of the Natura 2000 network

- Implementing actions to communicate with and raise awareness among the population and stakeholders on the threats faced by marine mammals, sea reptiles, and sea birds, as well as on the need to conserve riparian forests, sand dune ecosystems, priority fish species, and Chiroptera, on invasive alien species, etc.

- Maintaining and updating the Natura 2000 Greece platform to disseminate accurate and reliable Natura 2000-related information at national level

- Maintaining/operating the online Public Participation Geographic Information System (ppGIS/webGIS) for visualising and monitoring ecosystem services

Prioritization of measures to be implemented during the next MFF period

All the measures listed in the following table are prioritised by Greece for the period 2021-2027, to the end of ensuring Natura 2000-related communication and awareness raising, education and visitor access.

List of prioritized measures to be carried out, and estimated costs for these measures

E.1.5

Name and short description of the measures	Type of measure	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
1. Organising seminars to educate and train interested parties and stakeholders in sea mammal and sea bird protection (15 seminars)	Recurrent	€10,286	Central Macedonia	CF, ERDF, EMFF, LIFE, INTERREG
2. Building, maintaining, and updating the "Natura 2000 Greece" platform for the dissemination of information related to Natura 2000 sites in Greece	Recurrent	€25,714	National level	
3. Maintaining and constantly updating the online Public Participation Geographic Information System (ppGIS/webGIS) for visualising and monitoring ecosystem services, created in the context of the LIFE IP 4 Natura project	Recurrent	€10,286	National level	CF, ERDF, LIFE, INTERREG
4. Implementing actions to inform and raise awareness among social partners and the general population on the need to protect and conserve Chiroptera and their habitats (caves) by producing printed, digital and audiovisual material, organising seminars to train the social partners, producing educational material, using social media, and organising events	Recurrent	€102,857	National level	CF, ERDF, LIFE, INTERREG
5. Implementing actions to inform and raise awareness among stakeholders and the general population on the importance of conserving the 9 species of marine mammals within the coastal and marine Natura 2000 sites (*Balaenoptera physalus*, *Delphinus delphis*, *Grampus griseus*, **Monachus monachus*, *Phocoena phocoena*, *Physeter macrocephalus*, *Stenella coeruleoalba*, *Tursiops truncatus*, *Ziphius cavirostris*)	Recurrent	€68,571	National level	EMFF, LIFE, INTERREG
6. Implementing actions to inform and raise awareness among the general population (tourists) and stakeholders (business owners) on the importance of conserving sea turtles	Recurrent	€17,143	Ionian Islands	CF, ERDF, EMFF, LIFE, INTERREG
	Recurrent	€17,143	Crete	
7. Implementing actions to inform and raise awareness among the general population and stakeholders on the importance of conserving marine mammals, and on the threats they face, with an emphasis on fisheries-related threats (*Delphinus delphis*, *Grampus griseus*, **Monachus monachus*, *Phocoena phocoena*, *Stenella coeruleoalba*, *Tursiops truncatus*)	Recurrent	€34,286	Eastern Macedonia and Thrace	CF, ERDF, EMFF, LIFE, INTERREG
8. Raising awareness among, communicating with, and training stakeholders with regard to the bycatch of marine mammals, reptiles, birds, and other important species	One-off	€51,429	National level	CF, ERDF, EMFF, LIFE, INTERREG, ERASMUS
9. Implementing actions to inform and raise awareness among the general population and stakeholders on the importance of conserving cetaceans (with an emphasis on the species *Balaenoptera physalus*, *Physeter macrocephalus, and Ziphius cavirostris*) and on the threats they face, with an emphasis on the effects of shipping, seismic surveys, and military exercises	Recurrent	€25,714	Epirus	CF, ERDF, LIFE, INTERREG
	Recurrent	€25,714	Ionian Islands	
	Recurrent	€25,714	Crete	
	Recurrent	€25,714	Peloponnese	
10. Implementing actions to inform and raise awareness among the general population and stakeholders on the importance of conserving riparian forests (using multimedia and online educational material, organising awareness raising events, communicating with the scientific community, organising 40 school presentations, supporting the action of local volunteer groups, etc.)	Recurrent	€25,714	National level	LIFE, INTERREG
11. Implementing actions to inform and raise awareness among the general population on the need to protect and conserve sand dune habitat types within the jurisdiction of 3 Protected Areas Management Bodies	Recurrent	€17,143	South Aegean	CF, ERDF, LIFE, INTERREG
	Recurrent	€17,143	Crete	
	Recurrent	€8,571	Eastern Macedonia and Thrace	
12. Implementing actions to inform and raise awareness among the general population and stakeholders on the need to protect and conserve marine habitat types (1110, 1120*, 1130, 1140, 1160, 1170, 1180, 8310)	Recurrent	€42,857	National level	CF, ERDF, EMFF, LIFE, INTERREG

Name and short description of the measures	Type of measure	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
13. Implementing actions to inform and raise awareness among the general population and stakeholders on **Acipenser sturio* (installing information signs, organising seminars, producing informative material), to reduce human-induced pressures/threats and locate individuals	Recurrent	€8,571	Eastern Macedonia and Thrace	CF, ERDF, LIFE, INTERREG
14. Building mobile applications for safe navigation and anchoring of vessels in marine Natura 2000 sites with Posidonia beds	One-off	€3,429	National level	CF, ERDF, EMFF, LIFE, INTERREG
15. Implementing actions to inform and raise awareness among citizens, stakeholders and competent authorities at national, regional, and local level, on invasive alien species	Recurrent	€257,143	National level	CF, ERDF, EMFF, LIFE, INTERREG, ERASMUS
16. Designing and implementing environmental interpretation projects, upgrading and expanding existing structures and signs of Protected Areas Management Bodies in the Natura 2000 network (annual cost per Protected Area Management Body: €30,857)	Recurrent	€61,714	Attica	CF, ERDF, LIFE, INTERREG, CLLD
	Recurrent	€123,429	Eastern Macedonia and Thrace	
	Recurrent	€92,571	Central Greece	
	Recurrent	€30,857	North Aegean	
	Recurrent	€92,571	Western Greece	
	Recurrent	€92,571	Western Macedonia	
	Recurrent	€61,714	Epirus	
	Recurrent	€92,571	Thessaly	
	Recurrent	€123,429	Ionian Islands	
	Recurrent	€185,143	Central Macedonia	
	Recurrent	€61,714	Crete	
	Recurrent	€61,714	South Aegean	
	Recurrent	€61,714	Peloponnese	
17. Implementing a communication/awareness raising/environmental education programme for the Protected Areas within the jurisdictions of Protected Areas Management Bodies (annual cost per Protected Area Management Body: €26,571)	Recurrent	€46,286	Eastern Macedonia and Thrace	CF, ERDF, LIFE, INTERREG
	Recurrent	€41,143	Attica	
	Recurrent	€26,571	North Aegean	
	Recurrent	€31,714	Western Greece	
	Recurrent	€43,714	Western Macedonia	
	Recurrent	€35,143	Epirus	
	Recurrent	€37,714	Thessaly	
	Recurrent	€52,286	Ionian Islands	
	Recurrent	€66,857	Central Macedonia	
	Recurrent	€53,143	Crete	
	Recurrent	€29,143	South Aegean	
	Recurrent	€29,143	Peloponnese	
	Recurrent	€37,714	Central Greece	

Expected results

Communication, awareness raising, and environmental education actions will be implemented to inform the general population and stakeholders on the value, functioning, necessity, results, and capabilities of the Natura 2000 network. The main objective is to increase the percentage of population and stakeholders who are aware of the Natura 2000 network and the Habitats and Birds Directives. Accurate and far-reaching communications will significantly contribute to decreasing any opposition and smoothly implementing measures and actions for the protection of areas, species, and habitats, as both the general population and the stakeholders are essentially the end users of the natural environment.

Priority measures will contribute to the continuing operation of the communication tools built in the context of the LIFE-IP 4 Natura project (i.e., the "Natura 2000 Greece" platform and the online Public Participation Geographic Information System).

The most important outcome of communication actions is the increased awareness among the population and stakeholders on specific issues: human-induced consequences on the protection of marine species and habitats (e.g., sea turtles, cetaceans and bycatch), awareness on organisms and systems (e.g., Chiroptera, riparian forests, sand dune habitat types, invasive alien species), etc. The communication of accurate information will significantly contribute to decreasing the negative impact of human activity on species and habitats.

Priority actions related to communication, awareness raising, and environmental education will be addressed to the following stakeholders and groups:

- Actions to be implemented by Protected Areas Management Bodies (environmental interpretation projects and communication/awareness raising/environmental education projects) will be addressed to the general population, visitors to Protected Areas, the educational community, residents within the jurisdictions of the Bodies, local competent authorities, as well as groups of the primary sector (farmers, livestock breeders, fishers, etc.).

- Actions to inform, raise awareness and provide training on marine species and habitat types of Community interest will be addressed to visitors to the Natura network sites (vessel users/owners, divers, swimmers, and tourists), professionals in the wider fisheries sector (fishers, fish farmers, wholesalers of fishery products), representatives and employees from the sectors of oceanic shipping and oil or other natural resource extraction, and also Navy officers.

- Actions related to bycatch and its effects on species and habitat types, and to fish species of Community interest, will be addressed to fishers, employees/stakeholders of fish auctions, fish wholesalers and fishmongers, competent national and regional authorities, as well as end consumers of fishery products.

- Actions concerning habitat types of Community interest (riparian and sand dune) will be addressed to visitors, competent authorities, and bodies responsible for conserving and managing these habitats, as well as to professional groups of the primary sector (farmers, livestock breeders, etc.) whose activities affect these habitats.

- Actions concerning caves and Chiroptera will be addressed to the general population, cave visitors (climbers, speleologists, etc.), and competent authorities responsible for managing caves.

E.1.6. References (for horizontal measures and administrative costs related to Natura 2000)

LAW 3937/2011 - Government Gazette A 60/31.03.2011 - Preservation of biodiversity and other provisions.

LAW 4519/2018 - Government Gazette A 25/20.02.2018 - Protected Areas Management Bodies and other provisions.

Joint Ministerial Decision 50743 (Government Gazette B 4432/2017) "*Revision of the national list of sites of the European Natura 2000 network*"

Government Gazette 415/2012 "Amending and supplementing Joint Ministerial Decision 37338/1807/2010 'Defining measures and procedures for the conservation of wild bird species and their habitats, in compliance with Directive 79/409/EEC....'"

Project "*Monitoring and assessment of the conservation status of species and habitat types of Community interest in Greece"* for the period 2006-2012, NSRF 2007-2013, MEEN

Project *"Developing large-scale (1:5,000) spatial data infrastructure for protected terrestrial areas of the Natura 2000 network"*, NSRF 2007-2013, MEEN

Report according to Article 17 of the Habitats Directive (Directive 92/43/EEC) for the period 2013-2018, project *"Processing, developing and making available to the public the MEEN data on protected species and habitats, and meeting obligations according to EU Directives"*, Green Fund, MEEN

Report according to Article 12 of the Birds Directive (Directive 2009/147/EC) for the period 2013-2018, project *"Processing, developing and making available to the public the MEEN data on protected species and habitats, and meeting obligations according to EU Directives"*, Green Fund, MEEN

Projects "*Development of Special Environmental Studies and Management Plans for the Natura 2000 network sites" and "Technical and scientific coordination for the development of Special Environmental Studies, draft Presidential Decrees, and Management Plans for the Natura 2000 network sites",* NSRF 2014-2020, MEEN

LIFE-IP 4 Natura Project - Integrated actions for the conservation and management of the Natura 2000 network sites, species, habitats, and ecosystems in Greece, https://edozoume.gr/

Joint Ministerial Decision 43236/1053/17.10.2017 (B 3760) National Action Plan for *Neophron percnopterus* in Greece.

Joint Ministerial Decision 43235/1053/17.10.2017 (B 3762) National Action Plan for *Anser erythropus* in Greece.

Joint Ministerial Decision 43231/1054/17.10.2017 (B 3761) Regional Action Plan for *Falco naumanni* in the Thessalian plain.

E.2 Site-related maintenance and restoration measures, within and beyond Natura 2000

E.2.1. Marine and coastal waters

Current status of habitats and species, conservation measures taken until now and their impact so far, remaining pressures and threats

Habitat types according to Annex I to Directive 92/43/EEC

Ten (10) habitat types associated with the "Marine and coastal waters" ecosystem category have been recorded in Greece:

No	Code	Name	Conservation status 2013-2018
1	1110	Sandbanks which are slightly covered by seawater all the time	U1(-)
2	1120*	**Posidonia* beds (Posidonion oceanicae)	U1(-)
3	1130	Estuaries	U1(=)
4	1140	Mudflats and sandflats not covered by seawater at low tide	U1(-)
5	1150*	*Coastal lagoons	U2(-)
6	1160	Large shallow inlets and bays	U1(=)
7	1170	Reefs	U2(=)
8	1180	Submarine structures made by leaking gases	XX
9	1310	*Salicornia* and other annuals colonizing mud and sand	U1(=)
10	8330	Submerged or partially submerged sea caves	U1(=)

As per the last report according to Article 17 of the Directive for the period 2013-2018, 7 of the habitat types mentioned above have a poor conservation status (1110, 1120, 1130, 1140, 1160, 1310, and 8330 – U1), 2 have a bad conservation status (1150 and 1170 – U2), and one has an unknown conservation status (1180 – XX).

Species according to Annexes II, IV, and V of Directive 92/43/EEC

Twenty-one (21) species of Community interest associated with the "Marine and coastal waters" ecosystem category have been recorded in Greece:

No	Species	Conservation status 2013-2018
Invertebrate species		
1	*Centrostephanus longispinus*	U1(=)
2	*Corallium rubrum*	U1(-)
3	*Lithophaga lithophaga*	U1(-)
4	*Pinna nobilis*	U2(-)
5	*Scyllarides latus*	U1(x)
Reptile species		
1	**Caretta caretta*	U2(-)
2	**Chelonia mydas*	U2(x)
3	*Dermochelys coriacea*	U2(x)
Mammal species		
1	*Balaenoptera physalus*	XX
2	*Delphinus delphis*	U2(-)
3	*Grampus griseus*	U1(x)
4	**Monachus monachus*	U1(+)
5	*Phocoena phocoena*	U2(-)
6	*Physeter macrocephalus*	U2(-)
7	*Stenella coeruleoalba*	XX
8	*Tursiops truncatus*	U1(x)
9	*Ziphius cavirostris*	U2(-)

No	Species	Conservation status 2013-2018
Fish species		
1	**Acipenser sturio*	MED:U2(x), MMED: XX
2	*Alosa fallax*	U2(-)
3	*Aphanius fasciatus*	U1(=)
4	*Petromyzon marinus*	XX

Of the species mentioned above and as per the last report according to Article 17 of the Directive for the period 2013-2018, 4 invertebrates have a poor conservation status (U1), and one has a bad conservation status (U2); the 3 sea turtles have a bad conservation status (U2); 3 marine mammals have a poor conservation status (U1), 4 have a bad conservation status (U2), and 2 have an unknown conservation status (XX); with regard to fish species, 1 has a poor conservation status (U1), 2 have a bad conservation status (U2), and 1 has an unknown

conservation status (XX). It should be noted that the invertebrate *Pinna nobilis* is considered to have a particularly bad status as, since 2016, populations have started to suffer mass mortality events starting from the Spanish coast of the Mediterranean; since 2018, such events have also occurred in the Greek seas. While recent studies are inconclusive as to the exact cause of the events, the first data show that it is a combination of contaminants. This phenomenon is particularly critical, as it could result in the mass extinction of *Pinna nobilis* in the Mediterranean.

Bird species under Article 12 of Directive 2009/147/EC

Thirteen (13) bird species of Community interest have been selected as priority for measures to be implemented over the period 2021-2027; these are wintering (W) and/or breeding (B) species in ecosystems relevant to the "Marine and coastal waters" category:

No	Species	Short-term population trend 2007-2018
1	*Anas acuta* (W)	=
2	*Aythya fuligula* (W)	x
3	*Calonectris diomedea* (B)	=
4	*Cygnus columbianus bewickii* (W)	+
5	*Cygnus cygnus* (W)	+
6	*Larus audouinii* (B)	-
7	*Larus melanocephalus (B)*	-
8	*Larus michahellis* (B)	+
9	*Numenius arquata arquata* (W)	x
10	*Phalacrocorax aristotelis desmarestii* (B)	=
11	*Phoenicopterus roseus* (P)	
12	*Puffinus yelkouan* (B)	=
13	*Recurvirostra avosetta* (B)	+

Of the species mentioned above and as per the last report according to Article 12 of the Directive for the period 2013-2018, 4 have a stable short-term population trend, 4 have an increasing short-term population trend, and 2 have a decreasing short-term population trend. It should be noted that *Larus audouinii*, *Calonectris diomedea, Puffinus yelkouan*, *Phalacrocorax aristotelis desmarestii*, and *Larus michahellis* have been added to the list, even though their wintering and breeding habitats are not considered "Marine and coastal waters" according to the MAES typology for ecosystem classification.

Conservation measures implemented for the habitat types and species of Community interest mentioned above, including birds

In the context of the extension of the Natura 2000 network that occurred in Greece in 2017 with Joint Ministerial Decision 50743 (Government Gazette B 4432/2017), titled "*Revision of the national list of sites of the European Natura 2000 network*", special emphasis was given to its marine component. The coverage of the country's marine territory by the network increased from 6.1% to 22%, as 29 new marine areas were included (20 proposed SCIs, 8 SPAs, 1 SPA-proposed SCI, some of them exclusively marine), and the marine boundaries of many existing areas were extended.

With regard to habitat type 1120*, protection measures have been implemented against fishing with trawling and seine gear (fishing with bottom trawls, purse seiners, and boat seines), as required by the Mediterranean Fishing Regulation 1967/2006 EC, special moorings have been installed to prevent uncontrolled anchoring, and communication and awareness actions have been carried out. With regard to habitat 1180, 2 new marine areas of the Natura 2000 network have been designated, and one more has been expanded to include the necessary marine ecosystems. With regard to habitats 1140, 1150*, and 1310, projects have been implemented at local level, with water management and vegetation restoration actions. With regard to habitat 1170, mapping actions have been implemented, though they have only covered a small area. Last, with regard to habitat 8330, conservation actions include mapping, clean-ups, and recording of the typical species.

With regard to measures already implemented for species of Community interest, it is worth mentioning that special emphasis was given to the seal **Monachus monachus* and to sea turtles, mainly *Caretta caretta*, through LIFE projects (e.g., conservation actions, spatial measures in Natura areas important for the species, development of an Action Plan), designation of new Natura 2000 marine areas, actions implemented by NGOs to rescue and rehabilitate, etc. Communication and environmental education actions have been carried out at national and local

level for marine mammals and reptiles, while the competent and enforcement/control authorities have been in contact with regard to invertebrate species that are at risk due to harvesting and/or illegal fishing.

For the bird species *Larus audouinii*, *Calonectris diomedea*, *Puffinus yelkouan*, and *Phalacrocorax aristotelis desmarestii*, actions were implemented in selected areas to:

- increase their populations' breeding success by reducing competition with other species (*Larus michahellis*),
- decrease the consequences of bycatch by collaborating with fishers,
- eliminate and control rat populations on islets,
- increase nesting sites by installing artificial nests.

At the same time, a number of research, conservation, protection, communication, and environmental education actions have been implemented by environmental NGOs at national level, targeting key areas for these species. The reflooding of the Drana lagoon at the delta of the river Evros was also beneficial for many bird species.

With regard to invasive species, several research institutes (HCMR), environmental organisations (iSea), and other bodies monitor the presence and distribution of invasive alien species in collaboration with European networks (EASIN, ESENIAS), along with their negative effects on marine ecosystems. At the same time, in the context of implementing Regulation 1143/2014 "*on the prevention and management of the introduction and spread of invasive alien species*", Greece is to draft the national list of invasive species of national interest, to the end of proceeding with a risk assessment for the species, and with actions to limit their impacts (the project is at the tendering stage). Over the past years, a small number of research projects was implemented, mainly to collect the existing knowledge on the species, distribution, impacts, and on ways to combat invasive alien species. Additionally, an invitation by the EMFF is underway to finance projects related to mapping invasive alien species, as well as actions or studies for preventing, controlling, and eliminating alien species.

Threats and pressures to habitat types of Community interest

As per the last report according to Article 17 of the Directive, the main remaining threats and pressures to the habitat types, and therefore the species, that are associated with the "Marine and coastal waters" category and will be managed through the PAF measures are:

- fisheries (professional/recreational) and fish farms;
- building activity in coastal areas and uncontrolled use of beaches by the tourism industry;
- mining and other natural resource extraction;
- land use change in coastal ecosystems;
- pollution derived from agricultural activities, mixed sources, or microplastics;
- drainage works;
- distribution and establishment of invasive alien species;
- effects of climate change on temperature, the sea level, habitat area and position, the distribution and status of vulnerable species;
- other damaging human activity;
- other natural disasters.

Measures needed to maintain or restore favourable conservation status

Conservation/protection actions within the Natura 2000 Network

- Installing special moorings to protect habitat type 1120* and the habitat of *Pinna nobilis* from anchoring

- Implementing actions to inform and raise awareness among the general population on the need to implement measures to protect marine habitat types, and limit the consequences of damaging human activity

- Combatting marine invasive alien species (targeted fisheries, developing confined spaces, implementing networking and communication actions, examining suitable habitats and effective fishing gear)

Restoration actions within the Natura 2000 Network

- Restoring habitats in habitat types 1140, 1150*, 1170, 1310, 8330: Restoring hydrological conditions, limiting access, informing the general population and stakeholders (fishers), implementing measures against erosion and

the effects of climate change, installing bivalve spawn and larvae collectors, installing artificial islands in wetlands, replanting aquatic macrophytes, reducing aquatic pollution, stabilising and cleaning sand dunes, collaborating with interested parties/stakeholders, developing restoration studies and implementing restoration actions by planting halophytes, installing logs and floating dams, limiting access to intertidal zones, restoring the habitat of the Mediterranean monk seal

- Combatting marine invasive alien species

Conservation/protection actions beyond the Natura 2000 Network

- Installing special moorings to protect habitat type 1120* from anchoring, and implementing communication actions

Restoration actions beyond the Natura 2000 Network

- Restoring habitat types 1130, 1170, 1310, and 1410: installing fences and planting hedges, connecting with seasonally flooded land, removing abandoned fishing gear and other waste, informing the general population and stakeholders

Prioritization of measures to be implemented during the next MFF period

All the measures listed in the following tables are prioritised by Greece for the period 2021-2027.

List of prioritized measures to be carried out, and estimated costs for these measures

E.2.1

- within Natura 2000 sites designated for the targeted habitats and species

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
1. Implementing actions to protect habitat type 1120* from vessel anchoring: developing a study and constructing special moorings	One-off	585 moorings at 30 islands	€306,257	South Aegean	CF, ERDF, LIFE
2. Implementing actions to protect habitat type 1120* from vessel anchoring: developing a study and constructing special moorings, awareness	One-off	1 Natura 2000 site	€14,286	Eastern Macedonia and Thrace	CF, ERDF, LIFE
	One-off	1 Natura 2000 site	€14,286	Central Macedonia	
	One-off	2 Natura 2000 sites	€28,571	Western Greece	
3. Implementing actions to restore habitat type 1130: restoring hydrological conditions, informing stakeholders, combatting alien species, etc.	One-off	1 Natura 2000 site	€42,857	Epirus	CF, ERDF, EMFF, LIFE, INTERREG
	One-off	2 Natura 2000 sites	€85,714	Western Greece	
	One-off	1 Natura 2000 site	€42,857	Central Greece	
4. Implementing actions to restore habitat type 1140: limiting access, informing the general population and stakeholders (fishers), taking protection measures against erosion	One-off	2 Natura 2000 sites	€142,857	Western Greece	CF, ERDF, EMFF, LIFE, INTERREG
	One-off	2 Natura 2000 sites	€142,857	Eastern Macedonia and Thrace	
5. Implementing actions to restore habitat type 1150*: installing bivalve spawn and larvae collectors, installing artificial islands in wetlands, replanting aquatic macrophytes	One-off	7,500 ha	€51,429	Epirus	CF, ERDF, EMFF, LIFE
	One-off	800 ha	€13,714	Ionian Islands	
	One-off	200 ha	€8,571	Western Greece	
6. Restoring habitat type 1150*: developing a study, removing non-functional irrigation channels made with cement, reshaping	One-off	2	€37,714	Epirus	CF, ERDF, LIFE

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
existing dikes		Natura 2000 sites			
7. Implementing actions to improve the conservation status of habitat type 1150*: reducing aquatic pollution, stabilising and cleaning sand dunes, collaborating with interested parties/stakeholders, implementing adaptive management, communicating/raising awareness, developing restoration studies and implementing restoration actions by planting halophytes, installing logs and floating dams, etc.	Recurrent	1 Natura 2000 site	€357,143	Eastern Macedonia and Thrace	CF, ERDF, LIFE, INTERREG
	Recurrent	1 Natura 2000 site	€71,429	Central Macedonia	
	Recurrent	4 Natura 2000 sites	€285,714	Ionian Islands	
	Recurrent	1 Natura 2000 site	€357,143	Western Greece	
	Recurrent	3 Natura 2000 sites	€107,143	South Aegean	
	Recurrent	1 Natura 2000 site	€71,429	Crete	
	Recurrent	1 Natura 2000 site	€50,000	Peloponnese	
8. Implementing actions to restore habitat type 1170: limiting access to intertidal zones, implementing measures against erosion and the impacts of climate change, combatting alien species, informing the general population and stakeholders, etc.	One-off	1 Natura 2000 site	€21,429	Western Greece	CF, ERDF, EMFF, LIFE, INTERREG
	One-off	3 Natura 2000 sites	€64,286	Ionian Islands	
	One-off	5 Natura 2000 sites	€107,143	South Aegean	
	One-off	4 Natura 2000 sites	€85,714	Crete	
	One-off	1 Natura 2000 site	€21,429	Central Macedonia	
9. Implementing actions to restore habitat type 1310: limiting access, combatting alien species, installing signs and informing the general population, etc.	One-off	1 Natura 2000 site	€21,429	Eastern Macedonia and Thrace	CF, ERDF, LIFE, INTERREG
	One-off	1 Natura 2000 site	€21,429	Epirus	
	One-off	1 Natura 2000 site	€21,429	Ionian Islands	
	One-off	1 Natura 2000 site	€21,429	South Aegean	
	One-off	2 Natura 2000 sites	€42,857	Crete	
10. Restoring the habitat of **Monachus monachus*, habitat type 8330: increasing and conserving the dry areas of caves, removing waste and other materials, monitoring the breeding of **Monachus*	One-off	1 Natura 2000 site	€25,714	South Aegean	CF, ERDF, LIFE

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
monachus	One-off	1 Natura 2000 site	€25,714	Thessaly	
	One-off	1 Natura 2000 site	€25,714	Ionian Islands	
	One-off	1 Natura 2000 site	€25,714	North Aegean	
11. Improving the nesting habitat of **Caretta caretta*: construction of reefs and/or breakwaters to protect coastal cliffs	One-off	1 project[13]	€51,429	Ionian Islands	CF, ERDF, LIFE
12. Implementing actions to protect and restore the marine habitats of *Pinna nobilis*: installing special collectors for *Pinna nobilis* pelagic larvae, transferring healthy *Pinna nobilis* individuals to appropriate habitats in the study areas, installing special moorings to protect sensitive marine habitats, producing specific informative material	One-off	1 Natura 2000 site	€2,857	Epirus	CF, ERDF, EMFF, LIFE
	One-off	8 Natura 2000 sites	€13,714	Ionian Islands	
13. Combatting and limiting the effects of marine invasive species: targeted fisheries, developing confined spaces, implementing networking and communication actions, exploring suitable habitats and effective fishing gear	Recurrent	7,500 ha	€34,286	Epirus	CF, ERDF, EMFF, LIFE, INTERREG
	Recurrent	800 ha	€17,143	Ionian Islands	
	Recurrent	200 ha	€13,714	Western Greece	
14. Implementing pilot restoration actions within the critical coastal zone (depolluting, restoring estuaries, etc.)	One-off	1 project	€214,286	National level	CF, ERDF, LIFE
15. Implementing actions to combat the expansion of marine invasive alien species	One-off	1 project	€342,857	National level	CF, ERDF, LIFE

- additional measures beyond Natura 2000 (wider green infrastructure measures)

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
16. Implementing actions to restore habitat types 1130, 1310, and 1410 in aquatic ecosystems: removing aggregates, installing fences and planting hedges, connecting with seasonally flooded land	One-off	1 project	€102,857	Crete	CF, ERDF, LIFE
17. Implementing actions to protect habitat type 1120* from vessel anchoring: developing a study and constructing special moorings, information	One-off	2 sites	€28, 571	Ionian Islands	CF, ERDF, LIFE, INTERREG
	One-off	1 site	€14,286	Western Greece	
	One-off	1 site	€14,286	Peloponnese	
	One-off	4 sites	€57,144	South Aegean	
18. Implementing actions to restore habitat type 1170: removing abandoned fishing gear and other waste, informing the general population and stakeholders, etc.	Recurrent	2 sites	€20,000	Thessaly	CF, ERDF, EMFF, LIFE, INTERREG
	Recurrent	1 site	€10,000	Central Greece	
	Recurrent	1 site	€10,000	Ionian Islands	

Expected results for targeted species and habitat types

- Improving the conservation status of habitat types 1120*, 1130, 1140, 1150*, 1170, 1310, and 8330, which have a poor or bad conservation status. The actions will also improve the habitats of species of Community interest that have a poor/bad conservation status: *Corallium rubrum, Lithophaga lithophaga, Pinna nobilis*, as well as those of marine mammals and reptiles.

- Improving the conservation status of the species *Caretta caretta*, **Monachus monachus*, and *Pinna nobilis*, as well as that of birds found in marine and coastal ecosystems, by improving and restoring their habitats and breeding/foraging sites

- Limiting the consequences of human activity on marine and coastal ecosystems, by implementing actions to communicate with/raise awareness among the general population and stakeholders

[13] An action to be financed by EU, national, or other, private resources, and implemented at regional or national level by one body or a consortium of bodies.

- Limiting the consequences of tourism activity on marine and coastal habitat types

- Adapting to climate change by implementing protection measures against erosion and other pressures caused by climate change

- Limiting the effects of marine invasive alien species (reducing the competition with native species, limiting grazing on algae, etc.)

- Reducing aquatic pollution derived from rural waste, agricultural waste, and plastic

- Protecting *Pinna nobilis* from extinction

- Conserving/restoring habitat types 1120*, 1130, 1170, 1310, and 1410 beyond the Natura 2000 network

Expected results: other benefits

- Improving the services provided to tourist or other visiting vessels by using special moorings that protect Posidonia beds (habitat type 1120*) from anchoring

- Promoting compatible activities (tourism, recreation, sports, etc.) in marine and coastal sites of the Natura 2000 network

- Improving the resilience of marine and coastal ecosystems to the effects of climate change

- Communicating with and raising awareness among the general population and stakeholders on the need to protect marine and coastal ecosystems, and the value of marine and coastal habitat types

- Increasing fishery resources and fish stocks by protecting marine habitats and combatting invasive species

- Enhancing water quality through actions to depollute and restore habitats

- Using the fees paid for the use of special *Posidonia oceanica* buoys as a source of financing

E.2.2. Heathland and shrub

Current status of habitats and species, conservation measures taken until now and their impact so far, remaining pressures and threats

Habitat types according to Annex I to Directive 92/43/EEC

Eleven (11) habitat types associated with the "Heathland and shrub" ecosystem category have been recorded in Greece:

No	Code	Name	Conservation status 2013-2018
1	2250*	*Coastal dunes with *Juniperus* spp.	U1(=)
2	2260	*Cisto-Lavenduletalia* dune sclerophyllous scrubs	U1(=)
3	4060	Alpine and Boreal heaths	U1(+)
4	4090	Endemic oro-Mediterranean heaths with gorse	FV(=)
5	5110	Stable xerothermophilous formations with *Buxus sempervirens* on rock slopes (*Berberidion* p.p.)	U2(+)
6	5210	Arborescent matorral with *Juniperus* spp.	FV(=)
7	5230*	*Arborescent matorral with *Laurus nobilis*	FV(=)
8	5310	*Laurus nobilis* thickets	FV(=)
9	5330	Thermo-Mediterranean and pre-desert scrub	FV(+)
10	5420	*Sarcopoterium spinosum* phryganas	FV(+)
11	5430	Endemic phryganas of the *Euphorbio-Verbascion*	FV(=)

Of the habitats listed above and as per the last report according to Article 17 of the Directive for the period 2013-2018, 3 have a poor conservation status (2250*, 2260, and 4060 – U1), 1 has a bad conservation status (5110 – U2), and 7 have a favourable conservation status (4090, 5210, 5230*, 5310, 5330, 5420, and 5430 – FV).

Species according to Annexes II, IV, and V of Directive 92/43/EEC

Fifty-four (54) species of Community interest associated with the "Heathland and shrub" ecosystem category have been recorded in Greece:

No	Species	Conservation status 2013-2018
Amphibian species		
1	*Lyciasalamandra helverseni*	U1(-)
2	*Mertensiella luschani*	FV(=)
3	*Pelobates syriacus*	FV(x)
Reptile species		
1	*Algyroides moreoticus*	FV(=)
2	*Algyroides nigropunctatus*	FV(=)
3	*Chalcides ocellatus*	FV(=)
4	*Coronella austriaca*	FV(=)
5	*Dolichophis caspius*	FV(=)
6	*Elaphe quatuorlineata*	FV(=)
7	*Elaphe sauromates*	FV(=)
8	*Hemorrhois nummifer*	FV(=)
9	*Hierophis gemonensis*	FV(=)
10	*Hierophis viridiflavus*	FV(=)
11	*Lacerta trilineata*	FV(=)
12	*Ophisaurus apodus*	FV(=)
13	*Podarcis cretensis*	FV(=)
14	*Podarcis erhardii*	FV(=)
15	*Podarcis levendis*	FV(=)
16	*Podarcis peloponnesiaca*	FV(=)
17	*Podarcis taurica*	FV(=)
18	*Telescopus fallax*	FV(=)
19	*Testudo graeca*	U1(-)
20	*Testudo marginata*	U1(-)
21	*Vipera xanthina*	FV(=)
22	*Zamenis situla*	FV(=)

No	Species	Conservation status 2013-2018
Invertebrate species		
1	*Apatura metis*	U1(-)
2	*Bolbelasmus unicornis*	U1(x)
3	**Euplagia quadripunctaria*	U1(x)
4	*Eriogaster catax*	U1(x)
5	*Hyles hippophaes*	U1(x)
6	*Maculinea arion*	U1(=)
7	*Papilio alexanor*	FV(=)
8	*Proserpinus proserpina*	U1(x)
9	*Pseudophilotes bavius*	FV(x)
10	*Zerynthia polyxena*	FV(=)
Mammal species		
1	*Canis aureus*	U1(=)
2	**Canis lupus*	U1(+)
3	*Capra aegagrus*	FV(x)
4	*Dryomys nitedula*	FV(=)
5	*Eptesicus anatolicus*	U1(x)
6	*Felis silvestris*	XX
7	*Lynx lynx*	XX
8	*Muscardinus avellanarius*	FV(=)
9	*Myomimus roachi*	XX
10	*Myotis aurascens*	XX
11	*Plecotus kolombatovici*	XX
12	*Plecotus macrobullaris*	XX
13	*Rhinolophus blasii*	U1(x)
Plant species		
1	**Androcymbium rechingeri*	U1(-)
2	*Fritillaria obliqua*	U2(x)
3	*Fritillaria rhodocanakis*	FV(=)
4	*Himantoglossum jankae*	FV(=)
5	*Ruscus aculeatus*	FV(=)
6	**Silene holzmanii*	U1(x)
7	*Tozzia carpathica*	XX

Of the species mentioned above and as per the last report according to Article 17 of the Directive for the period 2013-2018, 7 invertebrates have a poor conservation status (U1), and 3 have a favourable conservation status (FV); 2 amphibians have a favourable conservation status (FV), and 1 has a poor conservation status (U1); 1 reptile has a poor conservation status (U1), and 20 have a favourable conservation status (FV); 2 plants have a poor conservation status (U1), 1 has a bad conservation status (U2), 3 have a favourable conservation status (FV), and 1 has an unknown conservation status (XX); with regard to mammals, 4 have a poor conservation status (U1), 3 have a favourable conservation status (FV), and 6 have an unknown conservation status (XX).

Bird species under Article 12 of Directive 2009/147/EC

Eight (8) bird species of Community interest have been selected as priority for measures to be implemented over the period 2021-2027; these are wintering (W) and/or breeding (B) species in ecosystems relevant to the "Heathland and shrub" category:

No	Species	Short-term population trend 2007-2018
1	*Alectoris graeca* (B)	x
2	*Circus cyaneus* (W)	x
3	*Circus pygargus* (B)	-
4	*Emberiza calandra* (B)	=
5	*Emberiza hortulana* (B)	=
6	*Falco biarmicus* (B)	+
7	*Melanocorypha calandra* (B)	=
8	*Monticola saxatilis* (B)	=

Of the species mentioned above and as per the last report according to Article 12 of the Directive for the period 2013-2018, 4 have a stable short-term population trend, 2 have an unknown short-term population trend, and 1 has a decreasing short-term population trend.

Conservation measures implemented for the habitat types and species of Community interest mentioned above, including birds

Conservation actions have been implemented for habitat type 2250*: managing accessibility and informing visitors, removing waste, reinforcing typical species and regeneration with planting actions, halting the succession by *Pinus brutia*, eliminating alien species, and conserving ex-situ important species of the habitat.

With regard to habitat type 5210, actions aimed to improve the habitat connectivity of carnivore mammals **Ursus arctos* and **Canis lupus*. In habitat types 5330 and 5420, actions had a local character and included, respectively, fencing to prevent grazing, and anti-erosion works, actions to improve soil conditions, planting.

With regard to the plant species **Androcymbium rechingeri*, a micro-reserve in the largest subpopulation has been established, and actions have been implemented for visitor management, ex-situ conservation, population reinforcement, recording of biotic and abiotic parameters, communication. With regard to the lepidopteran **Euplagia quadripunctaria*, the conservation actions implemented aim to increase the species' population. Last, in the context of LIFE-IP 4 Natura, an action plan is being prepared for **Silene holzmanii*, to be implemented in the near future.

With regard to the carnivore mammal **Canis lupus*, conservation and protection actions have been implemented for the species as well as its habitats (limiting fragmentation, etc.). At the same time, environmental NGOs implement communication, awareness, and environmental education programmes, organise research activities related to the species biology and ecology, and implement actions to rescue and rehabilitate injured or distressed individuals.

With regard to cave dwelling Chiroptera, actions are implemented to promote, restore, and protect their habitat, communicate and raise awareness, encourage citizen science, and boost their protection by preparing action plans and establishing micro-reserves.

Threats and pressures to habitat types of Community interest

As per the last report according to Article 17 of the Directive, the main remaining threats and pressures to the habitat types, and therefore the species, that are associated with the "Heathland and shrub" category and will be managed through the PAF measures are:

- invasive alien species,
- burning for forestry activities,
- land use change, afforestation, and natural succession,
- intensive grazing or overgrazing,
- fragmentation due to the construction of roads, paths, and relevant infrastructure,
- sports, tourism, and recreational activities.

Measures needed to maintain or restore favourable conservation status

Conservation/protection actions within the Natura 2000 Network

- Implementing actions to protect and conserve the habitats of *Fritillaria obliqua* and **Androcymbium rechingeri* (improving and protecting shrubs, controlling and spatial planning of activities, building paths to manage visitors, installing signs, establishing a plant micro-reserve, promoting environmental education, etc.)

- Implementing actions to limit/restrict access, using permanent or special barriers (piling, filling, installing access control barriers, etc.), to heathland and shrub fragmented by illegal roads, installing signs, promoting environmental education

Restoration actions within the Natura 2000 Network

- Restoring habitat types 2250*, 2260, 4060, 5110: Controlling/limiting grazing, removing alien species, organising planting of typical species, main structural elements (woody species), and the herbaceous layer

Conservation/protection actions beyond the Natura 2000 Network

- Implementing actions to protect and conserve the habitats of *Fritillaria obliqua* (improving and protecting shrubs, fencing, monitoring) and *Emberiza cineracea* (fencing, studying the species' ecological requirements)

- Implementing actions to limit/restrict access, using permanent or special barriers (piling, filling, installing access control barriers, etc.), to heathland and shrub fragmented by illegal roads, installing signs, promoting environmental education

Restoration actions beyond the Natura 2000 Network

- Restoring ecological corridors in habitat type 2250* to facilitate the movement of species of Community interest

Prioritization of measures to be implemented during the next MFF period

All the measures listed in the following tables are prioritised by Greece for the period 2021-2027.

List of prioritized measures to be carried out, and estimated costs for these measures

E.2.2

- within Natura 2000 sites designated for the targeted habitats and species

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
1. Implementing actions to protect habitat type 2250* from degradation: limiting access by creating protected routes	One-off	1 Natura 2000 site	€7,143	Thessaly	CF, ERDF, LIFE
2. Implementing actions to restore habitat type 2260: limiting/restricting access, controlling grazing, installing signs, removing alien species, etc.	One-off	2 Natura 2000 site	€28,571	South Aegean	CF, ERDF, EAFRD, LIFE, INTERREG
	One-off	1 Natura 2000 site	€14,286	Crete	
	One-off	1 Natura 2000 site	€14,286	North Aegean	
3. Implementing actions to restore habitat type 4060: restricting grazing, planting typical species, installing signs, organising communication activities, etc.	One-off	1 Natura 2000 site	€14,286	Central Greece	CF, ERDF, EAFRD, LIFE, INTERREG
	One-off	1 Natura 2000 site	€14,286	Eastern Macedonia and Thrace	
	One-off	1 Natura 2000 site	€14,286	Central Macedonia	
	One-off	1 Natura 2000 site	€14,286	Western Macedonia	
4. Implementing actions to restore habitat type 5110: organising planting of the main structural elements (woody species) and the herbaceous layer, monitoring pressures and threats	Recurrent	1 project	€15,429	Epirus	CF, ERDF, LIFE
	Recurrent	1 project	€15,429	Western Macedonia	
	Recurrent	1 Natura 2000 site	€12,857	Central Macedonia	
5. Improving the shrubs that form the habitat of *Fritillaria obliqua*: fencing, monitoring, etc.	Recurrent	1 Natura 2000 site	€14,286	South Aegean	CF, ERDF, LIFE
6. Improving and protecting the habitat of **Androcymbium rechingeri*: controlling and spatial planning of activities (e.g., building paths to manage visitors), installing signs, establishing a plant micro-reserve, promoting environmental education, etc.	One-off	2 Natura 2000 sites	€28,571	Crete	CF, ERDF, LIFE, INTERREG
7. Implementing actions to restore heathland and shrub within the Natura 2000 network that are fragmented by illegal roads: installing permanent or special barriers (piling, filling, installing access control barriers, etc.)	One-off	1 project	€18,857	Central Greece	CF, ERDF, LIFE
	One-off	1 project	€18,857	North Aegean	
	One-off	1 project	€18,857	Attica	

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
	One-off	1 project	€18,857	Eastern Macedonia and Thrace	
	One-off	1 project	€18,857	Western Greece	
	One-off	1 project	€18,857	Epirus	
	One-off	1 project	€18,857	Western Macedonia	
	One-off	1 project	€18,857	Thessaly	
	One-off	1 project	€18,857	Ionian Islands	
	One-off	1 project	€18,857	Crete	
	One-off	1 project	€18,857	Central Macedonia	
	One-off	1 project	€18,857	South Aegean	
	One-off	1 project	€18,857	Peloponnese	
8. Implementing a pilot installation of fences to improve the status of the species *Emberiza cineracea*, and developing a study of the species' distribution, population, trend, and ecological characteristics and requirements.	One-off	4 Natura 2000 sites	€37,143	North Aegean	CF, ERDF, LIFE

- additional measures beyond Natura 2000 (wider green infrastructure measures)

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
9. Improving and protecting the habitat of *Fritillaria obliqua*: fencing individuals, monitoring	One-off	1 project	€4,286	Central Greece	CF, ERDF, LIFE
10. Conserving and restoring ecological corridors in habitat type 2250* to improve the coherence of the Natura 2000 network, to the end of facilitating the movement of species of Community interest (*Parnassius apollo*, *Testudo graeca*, *Testudo hermanni*, *Testudo marginata*, etc.), preserving biodiversity, and adjusting to climate change	One-off	1 project	€29,143	National level	CF, ERDF, LIFE
11. Implementing actions to restore heathland and shrub beyond the Natura 2000 network that are fragmented by illegal roads: installing permanent or special barriers (piling, filling, installing access control barriers, etc.)	One-off	1 project	€18,857	Central Greece	CF, ERDF, LIFE
	One-off	1 project	€18,857	North Aegean	
	One-off	1 project	€18,857	Attica	
	One-off	1 project	€18,857	Eastern Macedonia and Thrace	
	One-off	1 project	€18,857	Western Greece	
	One-off	1 project	€18,857	Epirus	
	One-off	1 project	€18,857	Western Macedonia	
	One-off	1 project	€18,857	Thessaly	
	One-off	1 project	€18,857	Ionian Islands	
	One-off	1 project	€18,857	Crete	
	One-off	1 project	€18,857	Central Macedonia	
	One-off	1 project	€18,857	South Aegean	
	One-off	1 project	€18,857	Peloponnese	

Expected results for targeted species and habitat types

- Improving the conservation status of habitat types 2250*, 2260, 4060, and 5110, which have a poor or bad conservation status (improving structures and functions)

- Conserving/restoring the habitats of species of Community interest **Androcymbium rechingeri* and *Fritillaria obliqua*, which have a poor or bad conservation status, along with that of species *Emberiza cineracea*, as well as of other birds found in heathland and shrub within and beyond the Natura 2000 network

- Appropriately managing livestock farming activities to reduce their impact on habitat types and species of Community interest

- Limiting the impact of invasive alien species on habitat type 2260

- Limiting the fragmentation of aquatic ecosystems by implementing actions to unify and restrict access with permanent or special barriers, within and beyond the Natura 2000 network

- Facilitating the mobility of species of Community interest **Euplagia quadripunctaria, Parnassius apollo*, *Testudo graeca*, *Testudo hermanni*, and *Testudo marginata* by conserving and restoring ecological corridors

Expected results: other benefits

- Improving the services provided to tourists visiting heathland and shrub, and promoting compatible activities (tourism, recreation, sports, etc.) within those areas

- Improving the resilience of heathland and shrub to climate change

- Promoting good practices for livestock farming that have milder effects on the biodiversity of heathland and shrub

- Communicating with and raising awareness among the general population and stakeholders on the need to protect heathland and shrub, and the value of the relevant habitat types

- Protecting the land from erosion by implementing actions in habitat type 5110

- Preserving/creating green infrastructure to reduce the fragmentation of species' habitats

E.2.3. Bogs, fens and other wetlands

Current status of habitats and species, conservation measures taken until now and their impact so far, remaining pressures and threats

Habitat types according to Annex I to Directive 92/43/EEC

Seven (7) habitat types associated with the "Bogs, fens and other wetlands" ecosystem category have been recorded in Greece:

No	Code	Name	Conservation status 2013-2018
1	1420	Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)	U1(=)
2	1430	Halo-nitrophilous scrubs (*Pegano-Salsoletea*)	U1(=)
3	2190	Humid dune slacks	U1(=)
4	7140	Transition mires and quaking bogs	FV(=)
5	7210*	Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*	U1(=)
6	7220*	*Petrifying springs with tufa formation (*Cratoneurion*)	XX
7	7230	Alkaline fens	U1(=)

Of the habitats listed above and as per the last report according to Article 17 of the Directive for the period 2013-2018, 5 have a poor conservation status (1420, 1430, 2190, 7210*, and 7230 – U1), 1 has an unknown conservation status (7220* – XX), and 1 has a favourable conservation status (7140 – FV).

Species according to Annexes II, IV, and V of Directive 92/43/EEC

Thirty-seven (37) species of Community interest associated with the "Bogs, fens and other wetlands" ecosystem category have been recorded in Greece:

No	Species	Conservation status 2013-2018
Amphibian species		
1	*Bombina bombina*	U1(x)
2	*Bombina variegata*	FV(=)
3	*Bufotes viridis*	FV(=)
4	*Hyla arborea*	FV(=)
5	*Pelobates syriacus*	FV(=)
6	*Pelophylax bedriagae*	FV(=)
7	*Pelophylax cerigensis*	U1(x)
8	*Pelophylax cretensis*	U1(x)
9	*Pelophylax kurtmuelleri*	FV(=)
10	*Pelophylax ridibundus*	FV(=)
11	*Rana dalmatina*	FV(=)
12	*Rana graeca*	FV(=)
13	*Rana temporaria*	FV(=)
14	*Triturus karelinii*	FV(=)
15	*Triturus macedonicus*	FV(=)
Invertebrate species		
1	*Coenagrion ornatum*	U1(-)
2	*Cordulegaster heros*	U1(-)
3	*Euphydryas aurinia*	U1(=)
4	*Lindenia tetraphylla*	U1(-)
5	*Lycaena dispar*	U2(-)
6	*Ophiogomphus cecilia*	U1(-)
7	*Stylurus flavipes*	U1(-)
8	*Vertigo angustior*	U1(-)
9	*Vertigo moulinsiana*	U1(-)

No	Species	Conservation status 2013-2018
Reptile species		
1	*Emys orbicularis*	U1(-)
2	*Natrix tessellata*	FV(=)
Mammal species		
1	*Lutra lutra*	FV(=)
2	*Mustela putorius*	XX
3	*Myotis brandtii*	U1(x)
4	*Myotis capaccinii*	U1(x)
5	*Pipistrellus pygmaeus*	U1(x)
Plant species		
1	*Dactylorhiza kalopissii* subsp. *kalopissii*	U2(-)
2	*Gladiolus palustris*	XX
3	*Phoenix theophrasti*	U1(=)
4	*Polygonum praelongum*	U1(x)
5	*Rhododendron luteum*	FV(=)
6	*Tozzia carpathica*	XX
7	**Veronica oetaea*	FV(=)
8	*Woodwardia radicans*	U2(x)

Of the species mentioned above and as per the last report according to Article 17 of the Directive for the period 2013-2018, 8 invertebrates have a poor conservation status (U1), and 1 has a bad conservation status (U2); 3 amphibians have a poor conservation status (U1), and 12 have a favourable conservation status (FV); 1 reptile has a poor conservation status (U1), and 1 has a favourable conservation status (FV); 2 plants have a poor conservation status (U1), 2 have a bad conservation status (U2), 2 have a favourable conservation status (FV), and 2 have an unknown conservation status (XX); with regard to mammals, 3 have a poor conservation status (U1), 1 has a favourable conservation status (FV), and 1 has an unknown conservation status (XX).

Bird species under Article 12 of Directive 2009/147/EC

Twenty (20) bird species of Community interest have been selected as priority for measures to be implemented over the period 2021-2027; these are wintering (W) and/or breeding (B) species in ecosystems relevant to the "Bogs, fens and other wetlands" category:

No	Species	Short-term population trend 2007-2018
1	*Ardeola ralloides* (B)	+
2	*Aythya ferina* (B)	=
3	*Aythya nyroca* (B)	=
4	*Branta ruficollis* (W)	x
5	*Chlidonias hybrida* (B)	-
6	*Chlidonias niger* (B)	-
7	*Clanga clanga* (W)	=
8	*Fulica atra atra* (B)	=
9	*Gelochelidon nilotica* (B)	=
10	*Glareola pratincola* (B)	-
11	*Ixobrychus minutus* (B)	-
12	*Numenius arquata arquata* (W)	x
13	*Nycticorax nycticorax* (B)	+
14	*Pelecanus crispus* (B)	+
15	*Plegadis falcinellus* (B)	=
16	*Podiceps nigricollis* (B)	+
17	*Recurvirostra avosetta* (B)	+
18	*Spatula querquedula* (B)	=
19	*Tadorna ferruginea* (B)	+
20	*Vanellus vanellus* (B)	=

Of the species mentioned above and as per the last report according to Article 12 of the Directive for the period 2013-2018, 8 have a stable short-term population trend, 2 have an unknown short-term population trend, 4 have a decreasing short-term population trend, and 6 have an increasing short-term population trend.

Conservation measures implemented for the habitat types and species of Community interest mentioned above, including birds

Actions have been implemented to manage and restore habitat type 1420 as a breeding habitat for sea birds, habitat type 7140 as a foraging habitat for *Anser erythropus*, and habitat type 7210*, including keeping water levels high, removing waste, and planting typical species.

With regard to plant species *Phoenix theophrasti* and **Veronica oetaea*, projects have been implemented to protect/restore their habitats, restore hydrological conditions, and reinforce the population. With regard to the pond turtle **Emys orbicularis*, the conservation actions implemented aim to increase the species' population. With regard to cave dwelling Chiroptera, actions are implemented to communicate and raise awareness, encourage citizen science, and reinforce their protection by preparing action plans.

With regard to the bird species *Ardeola ralloides, Aythya nyroca, Nycticorax nycticorax nycticorax, Pelecanus crispus, Ixobrychus minutus*, and *Plegadis falcinellus*, actions have been implemented to restore their breeding habitats within wetlands, build artificial islands, safeguard, protect, and reinforce the breeding populations and breeding success of these species, mitigate the negative consequences of wildfires, and improve the hydrological conditions and vegetation in bird habitats. At the same time, actions have been implemented to communicate with and raise awareness among local communities on the need to protect the birds and eliminate illegal activities that have a significant impact on their populations (poaching, trapping, etc.). Last, artificial islands have been built also for the benefit of *Gelochelidon nilotica*.

Threats and pressures to habitat types of Community interest

As per the last report according to Article 17 of the Directive, the main remaining threats and pressures to the habitat types, and therefore the species, that are associated with the "Bogs, fens and other wetlands" category and will be managed through the PAF measures are:

- abandonment of pasture lands,
- extensive grazing,
- tourism activity,
- pollution derived from farming activities,
- land use change,
- water resources management,

- expansion and establishment of invasive alien species;
- roadworks.

Measures needed to maintain or restore favourable conservation status

Conservation/protection actions within the Natura 2000 Network

- Implementing actions to conserve the aquatic habitats of species *Lycaena dispar, Coenagrion ornatum, Cordulegaster heros*, of the plant *Woodwardia radicans*, and aquatic reptiles, including interventions such as low-impact technical works for water resource management, planting, actions to inform and raise awareness among local bodies, pond construction, recording of breeding habitats, biomonitoring, removal of alien species

- Implementing actions to limit/restrict access, using permanent or special barriers (piling, filling, installing access control barriers, etc.), to bogs, fens and other wetlands fragmented by illegal road building, installing signs, promoting environmental education

- Purchasing land, or renting long-term, to protect and restore lakeside, riverside, and aquatic habitats

Restoration actions within the Natura 2000 Network

- Implementing restoration actions in habitat types 1420, 1430, 2190, 7210*, 7230, including controlling and removing alien species, cleaning, planting main structural elements (woody species) and the herbaceous layer, unifying the aquatic habitats of bird species to improve their conservation status, restoring hydrological conditions, planting typical species, restoring mountain wetlands (incl. repairing stream dikes), building small dams, restoring small island wetlands (incl. removing aggregates), installing fences and planting hedges, connecting with seasonally flooded land, managing water resources for agricultural irrigation, regulating grazing.

Conservation/protection actions beyond the Natura 2000 Network

- Implementing actions to conserve the habitat of *Woodwardia radicans* with low-impact interventions including technical works, planting, communication with and awareness-raising among local bodies

- Implementing actions to limit/restrict access, using permanent or special barriers (piling, filling, installing access control barriers, etc.), to bogs, fens and other wetlands fragmented by illegal road building, installing signs, promoting environmental education

Restoration actions beyond the Natura 2000 Network

- Implementing actions to restore aquatic ecosystems: removing aggregates, installing fences and planting hedges, connecting with seasonally flooded land

Prioritization of measures to be implemented during the next MFF period

All the measures listed in the following tables are prioritised by Greece for the period 2021-2027.

List of prioritized measures to be carried out, and estimated costs for these measures

E.2.3

- within Natura 2000 sites designated for the targeted habitats and species

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
1. Implementing actions to restore habitat type 1420: installing signs, removing alien species, cleaning, limiting access, etc.	One-off	1 Natura 2000 site	€7,143	Eastern Macedonia and Thrace	CF, ERDF, LIFE
	One-off	1 Natura 2000 site	€7,143	Central Macedonia	
	One-off	1 Natura 2000 site	€7,143	Epirus	
	One-off	1 Natura 2000 site	€7,143	Attica	

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
	One-off	2 Natura 2000 sites	€14,286	North Aegean	
	One-off	1 Natura 2000 site	€7,143	South Aegean	
2. Implementing actions to restore and improve the structures in habitat type 1430: controlling and removing alien/invasive species, organising planting of main structural elements (woody species) and the herbaceous layer	Recurrent	4 Natura 2000 sites	€85,714	South Aegean	CF, ERDF, LIFE
	Recurrent	2 Natura 2000 sites	€42,857	Crete	
3. Implementing actions to restore habitat type 2190: restricting /denying access, installing signs, promoting environmental awareness, removing alien species, restoring hydrological conditions, planting typical species, etc.	One-off	1 Natura 2000 site	€28,571	Eastern Macedonia and Thrace	CF, ERDF, LIFE, INTERREG
	One-off	1 Natura 2000 site	€28,571	South Aegean	
4. Implementing actions to restore habitat type 7210*: monitoring surface water and groundwater, building a management model for surface water and groundwater	Recurrent	3 Natura 2000 sites	€42,857	Western Greece	CF, ERDF, LIFE
	Recurrent	1 Natura 2000 site	€7,143	Central Macedonia	
	Recurrent	1 Natura 2000 site	€7,143	Ionian Islands	
	Recurrent	3 Natura 2000 sites	€14,286	Crete	
5. Implementing actions to restore habitat type 7230: managing water resources for agricultural irrigation	Recurrent	1 Natura 2000 site	€17,143	Epirus	CF, ERDF, LIFE
	Recurrent	2 Natura 2000 sites	€28,571	Western Macedonia	
6. Implementing measures to conserve and restore the aquatic habitat of the lepidopteran species *Lycaena dispar*: planting and monitoring seedlings of the host plant *Rumex hydrolapathum*, etc.	One-off	1 Natura 2000 site	€7,143	Eastern Macedonia and Thrace	CF, ERDF, LIFE
7. Implementing measures to conserve and restore *Woodwardia radicans* found at aquatic sites: carrying out low-impact technical works for water resource management, planting, communicating with and raising awareness among local bodies	One-off	1 Natura 2000 site	€68,571	Crete	CF, ERDF, LIFE
8. Implementing measures to conserve and restore the aquatic habitat of *odontostominae* species that have a poor conservation status (*Coenagrion ornatum, Cordulegaster heros*): building ponds, recording breeding habitats, implementing biomonitoring	Recurrent	1 Natura 2000 site	€15,429	Thessaly	CF, ERDF, LIFE
	Recurrent	1 Natura 2000 site	€24,514	Epirus	
9. Implementing actions to improve the habitats of pond turtles *Mauremys rivulata* and *Emys orbicularis*, which have a poor conservation status: removing alien species (*Trachemys scripta*), intervening in wetlands (removing aggregates, carrying out technical works for water resource management, etc.)	One-off	8 wetlands	€34,286	North Aegean	CF, ERDF, LIFE
10. Implementing actions to restore small island wetlands: removing illegal dikes and appropriately managing the relevant materials, decontaminating after uncontrolled waste disposal, removing alien plant species, eliminating water pollution sources, protecting restored areas to help the recovery of natural vegetation, maintaining and restoring natural pathways, if any, etc.	One-off	1 project	€34,286	Crete	CF, ERDF, LIFE
11. Implementing actions to restore bogs, fens and other wetlands within the Natura 2000 network that are fragmented by illegal roads: installing permanent or special barriers (piling, filling, installing access control barriers, etc.)	One-off	1 project	€18,857	Epirus	CF, ERDF, LIFE
	One-off	1 project	€18,857	Thessaly	
	One-off	1 project	€18,857	Ionian Islands	
	One-off	1 project	€18,857	Central Macedonia	
	One-off	1 project	€18,857	Crete	
	One-off	1 project	€18,857	South Aegean	
	One-off	1 project	€18,857	Peloponnese	
	One-off	1 project	€18,857	Attica	

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
	One-off	1 project	€18,857	Eastern Macedonia and Thrace	
	One-off	1 project	€18,857	Central Greece	
	One-off	1 project	€18,857	North Aegean	
	One-off	1 project	€18,857	Western Macedonia	
	One-off	1 project	€18,857	Western Greece	
12. Acquiring land, or renting long-term, to protect and restore lakeside, riverside, and aquatic habitats	One-off	1000 ha	€714,286	National level	CF, ERDF, LIFE

- additional measures beyond Natura 2000 (wider green infrastructure measures)

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
13. Improving and restoring the habitat of *Woodwardia radicans:* carrying out low-impact technical works, planting, communicating with and raising awareness among local bodies	One-off	1 project	€102,857	Crete	CF, ERDF, LIFE, INTERREG
14. Implementing actions to restore bogs, fens and other wetlands beyond the Natura 2000 network that are fragmented by illegal roads: installing permanent or special barriers (piling, filling, installing access control barriers, etc.)	One-off	1 project	€18,857	Epirus	CF, ERDF, LIFE
	One-off	1 project	€18,857	Thessaly	
	One-off	1 project	€18,857	Ionian Islands	
	One-off	1 project	€18,857	Central Macedonia	
	One-off	1 project	€18,857	Crete	
	One-off	1 project	€18,857	South Aegean	
	One-off	1 project	€18,857	Peloponnese	
	One-off	1 project	€18,857	Attica	
	One-off	1 project	€18,857	Eastern Macedonia and Thrace	
	One-off	1 project	€18,857	Central Greece	
	One-off	1 project	€18,857	North Aegean	
	One-off	1 project	€18,857	Western Macedonia	
	One-off	1 project	€18,857	Western Greece	

Expected results for targeted species and habitat types

- Improving the conservation status of habitat types 1420, 1430, 2190, 7210*, and 7230, which have a poor conservation status (improving structures and functions)

- Increasing the surface area of habitat type 1420

- Conserving/restoring the habitats of species of Community interest that have a poor or bad conservation status, including *Mauremys rivulata*, *Emys orbicularis*, *Lycaena dispar*, *Woodwardia radicans* (within and beyond the Natura 2000 network), *Coenagrion ornatum*, *Cordulegaster heros*, as well as of birds found in aquatic ecosystems

- Appropriately managing agricultural and livestock farming activities to reduce their effects on habitat types and species

- Combatting and limiting the distribution of *Trachemys scripta* and other invasive alien species in habitat types 1430 and 2190

- Restoring hydrological conditions in wetlands

- Boosting protection by purchasing land or renting long-term

- Limiting the fragmentation of aquatic ecosystems by implementing actions to unify and restrict access with permanent or special barriers

Expected results: other benefits

- Improving the resilience of bogs, fens and other wetlands to the effects of climate change

- Promoting ecotourism activities in aquatic habitats of birds and species of Community interest

- Communicating with and raising awareness among the general population and stakeholders on the need to protect bogs, fens and other wetlands, and the value of the relevant habitat types

- Improving water quality

- Optimising the use of water resources for irrigation purposes

E.2.4. Grassland

Current status of habitats and species, conservation measures taken until now and their impact so far, remaining pressures and threats

Habitat types according to Annex I to Directive 92/43/EEC

Eleven (11) habitat types associated with the "Grassland" ecosystem category have been recorded in Greece:

No	Code	Name	Conservation status 2013-2018
1	1510*	*Mediterranean salt steppes (*Limonietalia*)	U1(+)
2	6110*	Rupicolous calcareous or basophilic grasslands of the *Alysso-Sedion albi*	U1(+)
3	6170	Alpine and subalpine calcareous grasslands	FV(=)
4	6220*	Pseudo-steppe with grasses and annuals of the *Thero-Brachypodietea*	FV(=)
5	6230*	Species-rich *Nardus* grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	FV(=)
6	6260	Pannonic sand steppes	XX
7	62A0	Eastern sub-Mediterranean dry grasslands (*Scorzoneratalia villosae*)	U1(=)
8	62D0	Oro-Moesian acidophilous grasslands	XX
9	6420	Mediterranean tall humid grasslands of the *Molinio-Holoschoenion*	U1(=)
10	6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	U1(+)
11	6510	Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*)	FV(=)

Of the habitat types listed above and as per the last report according to Article 17 of the Directive for the period 2013-2018, 5 have a poor conservation status (1510*, 6110*, 62A0, 6420, and 6430 – U1), 2 have an unknown conservation status (6260 and 62D0 –XX), and 4 have a favourable conservation status (6170, 6220*, 6230*, and 6510 – FV).

Species according to Annexes II, IV, and V of Directive 92/43/EEC

Fifty-four (54) species of Community interest associated with the "Grassland" ecosystem category have been recorded in Greece:

No	Species	Conservation status 2013-2018
Invertebrate species		
1	*Bolbelasmus unicornis*	U1(x)
2	*Catopta thrips*	U1(x)
3	*Euphydryas aurinia*	U1(=)
4	*Hyles hippophaes*	U1(x)
5	*Lycaena dispar*	U2(-)
6	*Maculinea arion*	U1(=)
7	*Paracaloptenus caloptenoides*	U1(=)
8	*Parnassius apollo*	U1(-)
9	*Parnassius mnemosyne*	FV(=)
10	*Polyommatus eroides*	U1(=)
11	*Probaticus subrugosus*	U1(x)
12	*Proserpinus proserpina*	U1(x)
13	*Pseudophilotes bavius*	FV(x)
14	*Stenobothrus eurasius*	U1(x)
15	*Vertigo moulinsiana*	U1(-)
Reptile species		
1	*Ablepharus kitaibelii*	FV(=)
2	*Chamaeleo chamaeleon*	U1(-)
3	*Dolichophis jugularis*	FV(=)
4	*Elaphe quatuorlineata*	FV(=)
5	*Elaphe sauromates*	FV(x)
6	*Eryx jaculus*	FV(x)
7	*Lacerta agilis*	FV(x)
8	*Lacerta viridis*	FV(=)
9	**Macrovipera schweizeri*	U1(-)
10	*Ophisops elegans*	FV(=)
11	*Platyceps najadum*	FV(=)
12	*Podarcis muralis*	FV(=)
13	*Testudo hermanni*	U1(-)
14	*Vipera ursinii*	U1(=)
15	*Vipera xanthina*	FV(x)
16	*Zamenis longissimus*	FV(=)
17	*Zamenis situla*	FV(=)

No	Species	Conservation status 2013-2018
Mammal species		
1	*Myotis alcathoe*	XX
2	*Myotis blythii*	U1(x)
3	*Plecotus kolombatovici*	XX
4	*Plecotus macrobullaris*	XX
5	*Rhinolophus ferrumequinum*	U1(x)
6	*Rupicapra rupicapra balcanica*	U2(+)
7	*Spermophilus citellus*	U1(-)
8	*Vormela peregusna*	XX
Plant species		
1	*Artemisia eriantha*	U2(x)
2	*Botrychium simplex*	XX
3	**Centaurea lactiflora*	FV(=)
4	*Colchicum cousturieri*	XX
5	*Crepis pusilla*	U1(x)
6	*Dactylorhiza kalopissii* subsp. *kalopissii*	U2(-)
7	*Fritillaria drenovskii*	FV(x)
8	*Galanthus nivalis*	U1(x)
9	*Gentiana lutea*	U1(x)
10	*Gladiolus palustris*	XX
11	*Himantoglossum jankae*	FV(=)
12	*Ophrys argolica* subsp. *argolica*	FV(=)
13	*Paeonia parnassica*	FV(x)
14	*Viola athois*	U1(-)

Of the species mentioned above and as per the last report according to Article 17 of the Directive for the period 2013-2018, 12 invertebrates have a poor conservation status (U1), 2 have a bad conservation status (U2), and 1 has a favourable conservation status (FV); 3 reptiles have a poor conservation status (U1), and 14 have a favourable conservation status (FV); 4 plants have a poor conservation status (U1), 2 have a bad conservation status (U2), 5 have a favourable conservation status (FV), and 3 have an unknown conservation status (XX); with regard to mammals, 3 have a poor conservation status (U1), 1 has a bad conservation status (U2), and 4 have an unknown conservation status (XX).

Bird species under Article 12 of Directive 2009/147/EC

Bird species of Community interest that have been selected as priority for measures to be implemented over the period 2021-2027 and winter (W) and/or breed (B) in ecosystems relevant to the "Grassland" category are the following:

No	Species	Short-term population trend 2007-2018
1	*Aquila heliaca* (B)	=
2	*Branta ruficollis* (W)	x
3	*Ciconia ciconia* (B)	-
4	*Cygnus columbianus bewickii* (W)	+
5	*Glareola pratincola* (B)	-
6	*Perdix perdix* (B)	=
7	*Sylvia nisoria* (B)	-

Of the species mentioned above and as per the last report according to Article 12 of the Directive for the period 2013-2018, 2 have a stable short-term population trend, 1 has an unknown short-term population trend, 3 have a decreasing short-term population trend, and 1 have an increasing short-term population trend.

Conservation measures implemented for the habitat types and species of Community interest mentioned above, including birds

With regard to habitat types 1510* and 6420, interventions have been or are being implemented to increase the surface area, increase bird foraging and breeding grounds, manage vegetation, install fencing, and take action towards managing hydrological conditions that also contribute to increasing the ecosystem's resilience to climate change. With regard to habitat types 6170 and 6230*, restoration actions mainly focused on combatting issues deriving from human-induced disturbances and from crop abandonment.

In the context of LIFE-IP 4 Natura, an action plan is being prepared for the lepidopteran *Parnassius apollo* and the artiodactyl mammal *Rupicapra rupicapra balcanica*, to be implemented shortly. With regard to **Macrovipera schweizeri*, passageways have been built, and stakeholders have been contacted to the end of reducing roadkill incidents. With regard to cave dwelling Chiroptera, actions are implemented to communicate and raise awareness, encourage citizen science, and reinforce their protection by preparing action plans.

With regard to the white stork *Ciconia ciconia*, actions have been implemented to help population recovery.

Threats and pressures to habitat types of Community interest

As per the last report according to Article 17 of the Directive, the main remaining threats and pressures to the habitat types, and therefore the species, that are associated with the "Grassland" category and will be managed through the PAF measures are:

- the physical deterioration of wetlands,
- the effects of climate change on habitat surface area and location,
- pollution derived from agricultural activity,
- intensive grazing or overgrazing by animals, and livestock farming,
- development of sports, tourism, and recreational infrastructure and activities,
- mining activities,
- abandonment of pasture lands (e.g., termination of grazing or hay mowing),
- extraction of groundwater, surface water, or mixed water,
- abiotic natural processes,
- natural disasters.

Measures needed to maintain or restore favourable conservation status

Conservation/protection actions within the Natura 2000 Network

- Implementing actions to limit/restrict access, using permanent or special barriers (piling, filling, installing access control barriers, etc.), to Natura 2000 grassland fragmented by illegal roads, installing signs, promoting environmental education

Restoration actions within the Natura 2000 Network

- Implementing actions to restore and improve the habitat of the orchid *Dactylorhiza kalopissii* subsp. *kalopissii* (regulating grazing, restoring hydrological conditions), the feeding habitat of the bird *Anser erythropus*, the habitat of the reptile *Vipera ursinii* (planting, building and maintaining rock piles, communicating with stakeholders (climbers and skiers), eradicating alien species)

- Improving and restoring wet meadows grazed by meadow birds (fencing breeding locations, restoring vegetation, maintaining waterways of minimum ecological flow)

- Reinforcing extensive grazing by favouring livestock farmer mobility, to improve the degree of conservation of habitats 6420 and 6430, as well as to reach less accessible and mountainous areas and restore grassland

- Restoring habitat types 1510*, 2230, 6110*, 62A0, 6420, 6430: regulating grazing intensity, restoring hydrological conditions, removing alien species, planting typical species, building fences for alternating vegetation periods,

managing the distribution of grazing animals, removing shrubby vegetation, promoting management to halt succession

Conservation/protection actions beyond the Natura 2000 Network

- Implementing actions to limit/restrict access, using permanent or special barriers (piling, filling, installing access control barriers, etc.), to Natura 2000 grasslands fragmented by illegal roads, installing signs, promoting environmental education

Restoration actions beyond the Natura 2000 Network

- Implementing actions to restore and improve the habitat of the orchid *Dactylorhiza kalopissii* subsp. *kalopissii* (regulating grazing, restoring hydrological conditions)

Prioritization of measures to be implemented during the next MFF period

All the measures listed in the following tables are prioritised by Greece for the period 2021-2027.

List of prioritized measures to be carried out, and estimated costs for these measures

E.2.4

- within Natura 2000 sites designated for the targeted habitats and species

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
1. Implementing actions to restore habitat type 1510*: regulating grazing, restoring hydrological conditions	Recurrent	1 Natura 2000 site	€12,857	Central Macedonia	CF, ERDF, EAFRD, LIFE
	Recurrent	1 Natura 2000 site	€12,857	Eastern Macedonia and Thrace	
2. Implementing actions to restore habitat type 2230: limiting/restricting access, installing signs, promoting environmental awareness, removing alien species, planting typical species	One-off	2 Natura 2000 site	€14,286	South Aegean	CF, ERDF, LIFE
	One-off	1 Natura 2000 site	€7,143	Crete	
3. Implementing actions to restore habitat type 6110*: restricting grazing, planting typical species, installing signs, organising communication activities, etc.	One-off	1 Natura 2000 site	€14,286	Thessaly	CF, ERDF, EAFRD, LIFE, INTERREG
4. Implementing actions to restore habitat type 62A0: constructing fences for seasonal changes in vegetation, managing the distribution of grazing animals, regulating grazing intensity	Recurrent	4,000 ha	€25,714	Eastern Macedonia and Thrace	CF, ERDF, EAFRD, LIFE
	Recurrent	4,000 ha	€25,714	Central Macedonia	
5. Implementing actions to restore habitat type 6420: communicating with and training stakeholders (farmers and livestock breeders), planting typical species, removing shrubby vegetation, combatting alien species, restoring hydrological conditions, maintaining barrier gates, removing debris, etc.	One-off	3 Natura 2000 sites	€28,571	Western Greece	CF, ERDF, EAFRD, LIFE
	One-off	2 Natura 2000 sites	€14,286	Peloponnese	
	One-off	2 Natura 2000 sites	€14,286	South Aegean	
	One-off	5 Natura 2000 sites	€35,714	Crete	
	Recurrent	120 ha	€30,000	Western Macedonia	
6. Implementing actions to restore habitat type 6430: promoting management to halt succession, restoring hydrological conditions, etc.	Recurrent	3 Natura 2000 sites	€50,000	Western Macedonia	CF, ERDF, LIFE
	Recurrent	2 Natura 2000 sites	€22,857	Eastern Macedonia and Thrace	
	Recurrent	1 Natura 2000 site	€7,143	Central Macedonia	
	Recurrent	1 Natura 2000 site	€21,429	Central Greece	
7. Improving the habitat of *Vipera ursinii*: planting, building and maintaining rock piles, communicating with stakeholders (climbers and skiers), combatting alien species	One-off	1 Natura 2000 site	€14,286	Central Greece	CF, ERDF, EAFRD, LIFE

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
8. Implementing actions to restore the wet meadow habitat of *Dactylorhiza kalopissii* subsp. *kalopissii*: regulating grazing, restoring hydrological conditions, etc.	Recurrent	22 ha	€28,571	Eastern Macedonia and Thrace	CF, ERDF, EAFRD, LIFE
9. Improving and restoring wet meadows grazed by meadow birds: fencing breeding sites, restoring vegetation, maintaining waterways of minimum ecological flow (*Glareola pratincola, Anas platyrhynchos, Recurvirostra avosetta, Burhinus oedicnemus, Calandrella brachydactyla, Motacilla flava, Plegadis falcinellus*)	One-off	1 Natura 2000 site	€85,714	Thessaly	CF, ERDF, LIFE
10. Implementing actions to restore grassland within the Natura 2000 network that is fragmented by illegal roads: installing permanent or special barriers (piling, filling, installing access control barriers, etc.)	One-off	1 project	€18,857	Peloponnese	CF, ERDF, LIFE
	One-off	1 project	€18,857	Central Macedonia	
	One-off	1 project	€18,857	Eastern Macedonia and Thrace	
	One-off	1 project	€18,857	Western Greece	
	One-off	1 project	€18,857	Ionian Islands	
	One-off	1 project	€18,857	Crete	
	One-off	1 project	€18,857	Epirus	
	One-off	1 project	€18,857	Thessaly	
	One-off	1 project	€18,857	Attica	
	One-off	1 project	€18,857	North Aegean	
	One-off	1 project	€18,857	Central Greece	
	One-off	1 project	€18,857	South Aegean	
	One-off	1 project	€18,857	Western Macedonia	
11. Reinforcing extensive sheep and goat grazing by favouring livestock farmer mobility, to restore grassland and improve the habitat of bird species (e.g., habitat types 6420 and 6430) (€120/hectare/year)	Recurrent	10,000 ha	€1,200,000	National level	CF, ERDF, EAFRD, LIFE

- additional measures beyond Natura 2000 (wider green infrastructure measures)

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
12. Implementing actions to restore the habitat of the orchid *Dactylorhiza kalopissii* subsp. *kalopissii*: regulating grazing, restoring hydrological conditions	Recurrent	12 ha	€13,714	Eastern Macedonia and Thrace	CF, ERDF, EAFRD, LIFE
13. Implementing actions to restore grasslands beyond the Natura 2000 network that are fragmented by illegal roads: installing permanent or special barriers (piling, filling, installing access control barriers, etc.)	One-off	1 project	€18,857	Peloponnese	CF, ERDF, LIFE
	One-off	1 project	€18,857	Central Macedonia	
	One-off	1 project	€18,857	Eastern Macedonia and Thrace	
	One-off	1 project	€18,857	Western Greece	
	One-off	1 project	€18,857	Ionian Islands	
	One-off	1 project	€18,857	Crete	
	One-off	1 project	€18,857	Epirus	
	One-off	1 project	€18,857	Thessaly	
	One-off	1 project	€18,857	Attica	
	One-off	1 project	€18,857	North Aegean	
	One-off	1 project	€18,857	Central Greece	

	One-off	1 project	€18,857	South Aegean	
	One-off	1 project	€18,857	Western Macedonia	

Expected results for targeted species and habitat types

- Improving the conservation status of habitat types 1510*, 2230, 6110*, 62A0, 6420, and 6430, which have a poor conservation status (improving structures and functions)

- Conserving/restoring the habitats of the species of Community interest *Dactylorhiza kalopissii* subsp. *kalopissii* (within and beyond the Natura 2000 network) and *Vipera ursinii*, which have a poor or bad conservation status, and of the bird species *Alectoris graeca, Aquila chrysaetos, Circus pygargus, Emberiza hortulana, Falco biarmicus, Falco naumanni, Glareola pratincola, Gypaetus barbatus, Lanius collurio, Monticola saxatilis, Neophron percnopterus, Plegadis falcinellus, Pyrrhocorax pyrrhocorax, Recurvirostra avosetta*, which have been prioritised in the PAF

- Conserving/restoring the habitats of the bird species of Community interest *Anas platyrhynchos, Burhinus oedicnemus, Calandrella brachydactyla, Motacilla flava*, as well as of other birds found in meadow ecosystems

- Reinforcing livestock farming as a necessary management practice for the restoration of mountainous/less accessible meadow habitats

- Appropriately managing agricultural activities to reduce their effects on habitat type 6420 and the relevant species

- Combatting and limiting the spread of invasive alien species in habitat types 2230, 6420, and in the habitat of *Vipera ursinii*

- Restoring hydrological conditions in wet meadows

- Limiting the fragmentation of aquatic ecosystems by implementing actions to unify and restrict access with permanent or special barriers, within and beyond the Natura 2000 network

Expected results: other benefits

- Improving the resilience of grasslands to the effects of climate change

- Appropriately managing and promoting sustainable livestock farming activities to reduce their impact on habitat types and species of Community interest

- Promoting ecotourism activities in meadow habitats of birds and species of Community interest

- Communicating with and raising awareness among the general population and stakeholders on the need to protect grassland, and the value of the relevant habitat types

- Providing financial support to livestock breeders who use areas within the Natura 2000 network

E.2.5. Other agricultural ecosystems (incl. arable lands)

Current status of habitats and species, conservation measures taken until now and their impact so far, remaining pressures and threats

Species according to Annexes II, IV, and V of Directive 92/43/EEC

Four (4) species of Community interest associated with the "Other agricultural ecosystems (incl. arable lands)" ecosystem category have been recorded in Greece:

No	Species	Conservation status 2013-2018
Reptile species		
1	*Podarcis milensis*	FV(=)
Mammal species		
1	*Mustela putorius*	XX
2	*Myotis myotis*	U1(x)
3	*Rhinolophus mehelyi*	XX

Of the species listed above and as per the last report according to Article 17 of the Directive for the period 2013-2018, 1 reptile has a favourable conservation status (FV), 1 mammal has a poor conservation status (U1), and 2 mammals have an unknown conservation status (XX).

Along with the species mentioned above, for which "Other agricultural ecosystems (incl. arable lands)" are the preferred habitat, another 6 amphibians, 28 mammals, 15 invertebrates, 28 reptiles, and 2 plants have been recorded, for which agricultural ecosystems are an occasional or potential habitat.

Bird species under Article 12 of Directive 2009/147/EC

Thirteen (13) bird species of Community interest have been selected as priority for measures to be implemented over the period 2021-2027; these are wintering (W) and/or breeding (B) species in ecosystems relevant to the "Other agricultural ecosystems (incl. arable lands)" ecosystem category:

No	Species	Short-term population trend 2007-2018
1	*Circus pygargus* (B)	-
2	*Coracias garrulus* (B)	+
3	*Emberiza calandra* (B)	=
4	*Emberiza hortulana* (B)	=
5	*Emberiza melanocephala* (B)	-
6	*Hippolais olivetorum* (B)	=
7	*Lanius collurio* (B)	-
8	*Lanius nubicus* (B)	=
9	*Lanius minor* (B)	x
10	*Melanocorypha calandra* (B)	=
11	*Otis tarda* (W)	x
12	*Perdix perdix* (B)	=
13	*Streptopelia turtur* (B)	+

Of the species mentioned above and as per the last report according to Article 12 of the Directive for the period 2013-2018, 6 have a stable short-term population trend, 2 have an unknown short-term population trend, 3 have a decreasing short-term population trend, and 2 have an increasing short-term population trend.

However, it should be noted that, even though a very small number of species according to Directives 92/43/EEC and 2009/147/EC is mentioned in this category, agriculture is the key pressure/threat faced by habitats and species of Community interest. As per the last report according to Article 17 of the Habitats Directive, and Article 12 of the Birds Directive. A large number of habitat types and species mentioned in the Habitats and Birds Directives are facing pressures and threats associated with agricultural activities: 58 habitat types (65% of the habitat types according to Annex I found in Greece), 142 species (47% of the species according to Annexes II, IV, and V), 108 birds (28% of the birds according to Article 12 found in Greece). Additionally, it should be noted that agriculture has also been acknowledged as a high pressure/threat for 31 habitat types (of which 20 have been prioritised in the context of the Greek PAF 2021-2027), 73 species according to Directive 92/43/EEC (of which 43 have been prioritised in the context of the Greek PAF 2021-2027), and 59 birds according to Directive 2009/147/EC (of which 29 have been prioritised in the context of the Greek PAF 2021-2027); therefore, emergency conservation measures are required to mitigate the relevant effects.

In the context of the Rural Development Programme, the project titled "*Development of thematic management plans (TMPs) for the agriculture sector in protected areas*" is being implemented, which pertains to the development of studies in order to specify environmental management on agriculture (including livestock farming) and agricultural ecosystems in protected areas of Greece by designing relevant measures. In the context of TMP development, the effects of agricultural activity on biodiversity will be studied at local level, and specialised environmentally-friendly agricultural actions will be planned, with an eye to fulfilling the relevant (compulsory or voluntary) commitments, along with small-scale, non-productive investments, accompanied by an

implementation/application cost analysis and relevant documentation. Additionally, funding is provided to farmers in the context of the measure "Protection of wild bird species". The action aims to conserve and protect wild bird species whose habitats are closely connected with agricultural land. In the context of the measure "Organic farming", the provision of funding to farmland within the Natura 2000 network was prioritised. Actions to inform farmers and livestock breeders on the effects of pollution on biodiversity and habitat types associated with agricultural ecosystems have also been implemented.

With regard to *Falco naumanni*, actions have been implemented in the region of Thessaly to improve its foraging habitat in agricultural ecosystems, the conservation status of its populations, and its breeding success, and to implement sustainable agricultural practices (planting a local barley variety for which less agrochemicals are required, using crop rotation, maintaining and repairing hedges and natural vegetation between crops, preserving non-harvest zones within fields, reducing residue burning, extending harvesting periods to prolong the duration of foraging habitats for the benefit of hatchlings).

Pressures/threats due to agricultural activities pertain to all habitat types, but aquatic ecosystems in particular, and are associated with:

- pollution derived from farming activities,
- land use change and natural succession,
- extraction of groundwater, surface water, or mixed water.

Measures needed to maintain or restore favourable conservation status

Conservation/protection actions within the Natura 2000 Network

- Implementing actions to increase agricultural biodiversity and therefore improve/conserve bird species

- Constructing new hedges along arable lands in the plains of the Natura 2000 network to improve the habitats of rural fauna species

- Applying organic farming and agro-environmental measures in Natura 2000 areas with rivers and lakes to reduce the negative impact on habitat types and species

- Installing agroforestry systems to increase agricultural biodiversity and reduce fragmentation in habitats of species of Community interest

Restoration actions within the Natura 2000 Network

- Implementing actions to improve the habitats of soil fauna of Community interest in arable fields and between them: restoring/building rock piles, rock walls, terraces, and keeping non-shaded clearings available for such structures

Conservation/protection actions beyond the Natura 2000 Network

- Implementing actions to increase agricultural biodiversity and therefore improve/conserve bird species

- Developing ecological corridors in agricultural ecosystems to improve their cohesion and facilitate the movement of species

- Applying agro-environmental measures in crops beyond the Natura 2000 network that are adjacent to rivers and lakes

Prioritization of measures to be implemented during the next MFF period

All the measures listed in the following tables are prioritised by Greece for the period 2021-2027.

List of prioritized measures to be carried out, and estimated costs for these measures

E.2.5

- within Natura 2000 sites designated for the targeted habitats and species

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
1. Implementing actions to increase agricultural biodiversity and therefore improve/conserve bird species (e.g., non-harvested crops,	Recurrent	1 project	€714,286	National level	EAFRD

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
special crops)					
2. Implementing actions to improve the habitats of fauna of Community interest in arable fields and between them: restoring/building rock piles, rock walls, terraces, and keeping non-shaded clearings available for such structures	One-off	50 Natura 2000 sites	€428,571	National level	EAFRD
3. Organic farming in Natura 2000 areas with rivers and lakes (€400/ha/year)	Recurrent	140,503 ha	€40,143,714	National level	EAFRD
4. Applying agro-environmental measures in crops within Natura 2000 areas with rivers and lakes (€400/ha/year)	Recurrent	118,673 ha	€33,906,571	National level	EAFRD
5. Installing and maintaining agroforestry systems (€10,000/ha)	Recurrent	2,000 ha	€2,857,143	National level	EAFRD
6. Installing and maintaining silvo-pastoral systems (€1,500/ha)	Recurrent	5,000 ha	€1,071,429	National level	EAFRD
7. Improving the feeding habitat of *Anser anser* (renting land parcels and planting grains)	Recurrent	10 ha	€18,000	Western Macedonia	EARFD, LIFE

- additional measures beyond Natura 2000 (wider green infrastructure measures)

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
8. Developing ecological corridors in agricultural ecosystems to improve the cohesion of the Natura 2000 network and facilitate the movement of species	One-off	1 project	€257,143	Thessaly	CF, ERDF, EAFRD
9. Implementing actions to increase agricultural biodiversity and therefore improve/conserve bird species (e.g., non-harvested crops, special crops)	Recurrent	1 project	€142,857	National level	EAFRD
10. Applying organic farming and agro-environmental measures in crops adjacent to rivers and lakes beyond the Natura 2000 network (€400/ha/year)	Recurrent	58,050 ha	€16,585,714	National level	EAFRD

Expected results for targeted species and habitat types

- Reducing the negative impact of agricultural activity on habitat types and species of Community interest (such as **Linaria hellenica*), including birds (e.g., reducing pollution and the use of pesticides and fertilisers) in more than 300,000 hectares within and beyond the Natura 2000 network

- Improving the connectivity between areas of the Natura 2000 network by creating ecological corridors in rural areas beyond the network

- Contributing to the integrity of fauna habitats by creating hedges in 50 areas of the Natura 2000 network

- Improving and increasing the available habitats for soil fauna of Community interest in 50 areas of the Natura 2000 network

- Improving the conservation status of species of Community interest, as well as that of rural birds using agricultural ecosystems as their habitats

- Increasing agricultural biodiversity by using organic farming methods

- Improving/preserving the status of 29 habitat types, 6 plants, 16 invertebrates, 1 amphibian, 17 reptiles, 11 mammals, 48 fish, and 98 birds.

Expected results: other benefits

- Improving the resilience of agricultural ecosystems (including arable lands) to the effects and consequences of climate change

- Appropriately managing agricultural activities and promoting low-impact agricultural practices (reducing the use of pesticides and fertilisers, applying organic farming, etc.) to reduce the impact of agriculture on habitat types, species of Community interest, and rural birds

- Communicating with and raising awareness among the general public and stakeholders on biodiversity in agricultural ecosystems, and on the negative and positive impact of farming on species and habitats of Community interest

- Reinforcing entrepreneurship and primary production, and promoting local products

- Improving water and soil quality

- Reinforcing/creating green infrastructure to reduce fragmentation in habitats of species of Community interest

- Reducing the impact of agriculture on pollinators due to insecticides, pesticides, and other plant protection products

E.2.6. Woodland and forest

Current status of habitats and species, conservation measures taken until now and their impact so far, remaining pressures and threats

Habitat types according to Annex I to Directive 92/43/EEC

Twenty-nine (29) habitat types associated with the "Woodland and forest" ecosystem category have been recorded in Greece:

No	Code	Name	Conservation status 2013-2018
1	2270*	*Wooded dunes with *Pinus pinea* and/or *Pinus pinaster*	U1(+)
2	9110	*Luzulo-Fagetum* beech forests	FV(=)
3	9130	*Asperulo-Fagetum* beech forests	FV(=)
4	9140	Medio-European subalpine beech woods with *Acer* and *Rumex arifolius*	U1(+)
5	9150	Medio-European limestone beech forests of the *Cephalanthero-Fagion*	U1(+)
6	9180*	**Tilio-Acerion* forests of slopes, screes and ravines	FV(=)
7	91BA	Moesian silver fir (*Abies amabilis*) forests	FV(=)
8	91CA	Rhodopide and Balkan Range Scots pine (*Pinus sylvestris*) forests	U1(=)
9	91E0*	*Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)	U1(=)
10	91F0	Riparian mixed forests of *Quercus robur*, *Ulmus laevis*, *Ulmus minor*, *Fraxinus excelsior* or *Fraxinus angustifolia*, along the great rivers (*Ulmenion minoris*)	U2(=)
11	91M0	Pannonian-Balkanic turkey oak — sessile oak forests	FV(=)
12	9250	*Quercus trojana* woods	FV(=)
13	9260	*Castanea sativa* woods	FV(=)
14	9270	Hellenic beech forests with *Abies borisii-regis*	FV(=)
15	9280	*Quercus frainetto* woods	FV(=)
16	9290	*Cupressus* forests (*Acero-Cupression*)	FV(+)
17	92A0	*Salix alba* and *Populus alba* galleries	U1(=)
18	92C0	*Platanus orientalis* and *Liquidambar orientalis* woods (*Platanion orientalis*)	FV(=)
19	92D0	Southern riparian galleries and thickets (*Nerio-Tamaricetea* and *Securinegion tinctoriae*)	FV(=)
20	9310	Aegean *Quercus brachyphylla* woods	U1(+)
21	9320	*Olea* and *Ceratonia* forests	FV(=)
22	9340	*Quercus ilex* and *Quercus rotundifolia* forests	FV(=)
23	9350	*Quercus macrolepis* forests	FV(=)
24	9370*	*Palm groves of *Phoenix*	U1(+)
25	9410	Acidophilous *Picea* forests of the montane to alpine levels (*Vaccinio-Piceetea*)	FV(=)
26	9530*	(Sub-) Mediterranean pine forests with endemic black pines	FV(=)
27	9540	Mediterranean pine forests with endemic Mesogean pines	FV(+)
28	9560*	*Endemic forests with *Juniperus* spp.	U1(+)
29	95A0	High oro-Mediterranean pine forests	U2(+)

Of the habitat types listed above and as per the last report according to Article 17 of the Directive for the period 2013-2018, 9 have a poor conservation status (2270*, 9140, 9150, 91CA, 91E0*, 92A0, 9310, 9370*, and 9560* - U1), 2 have a bad conservation status (91F0 and 95A0 –U2), and 18 have a favourable conservation status (9110, 9130, 9180*, 91BA, 91M0, 9250, 9260, 9270, 9280, 9290, 92C0, 92D0, 9320, 9340, 9350, 9410, 9530*, and 9540 – FV).

Species according to Annexes II, IV, and V of Directive 92/43/EEC

Sixty-six (66) species of Community interest associated with the "Woodland and forest" ecosystem category have been recorded in Greece:

No	Species	Conservation status 2013-2018
Amphibian species		
1	*Bombina bombina*	U1(x)
2	*Bombina variegata*	FV(=)
3	*Lyciasalamandra helverseni*	U1(-)
4	*Mertensiella luschani*	FV(=)
5	*Rana dalmatina*	FV(=)
6	*Rana temporaria*	FV(x)
7	*Triturus karelinii*	FV(x)
8	*Triturus macedonicus*	FV(x)
Invertebrate species		
1	*Apatura metis*	U1(-)
2	*Buprestis splendens*	U1(x)
3	*Cerambyx cerdo*	U1(x)
4	*Dioszeghyana schmidtii*	U1(x)
5	**Euplagia quadripunctaria*	U1(x)
6	*Lucanus cervus*	U1(x)
7	*Morimus asper funereus*	U1(x)
8	*Osmoderma eremita* Complex	U1(x)
9	*Rhysodes sulcatus*	U1(x)
10	**Rosalia alpina*	U1(x)
Reptile species		
1	*Algyroides moreoticus*	FV(=)
2	*Algyroides nigropunctatus*	FV(=)
3	*Anatololacerta anatolica*	U1(-)
4	*Anatololacerta oertzeni*	FV(=)
5	*Testudo hermanni*	U1(-)
6	*Zamenis longissimus*	FV(=)

No	Species	Conservation status 2013-2018
Mammal species		
1	*Barbastella barbastellus*	U1(x)
2	**Canis lupus*	U1(+)
3	*Dryomys nitedula*	FV(=)
4	*Felis silvestris*	XX
5	*Lynx lynx*	XX
6	*Martes martes*	XX
7	*Muscardinus avellanarius*	FV(=)
8	*Myotis alcathoe*	XX
9	*Myotis aurascens*	XX
10	*Myotis bechsteinii*	U1(x)
11	*Myotis brandtii*	U1(x)
12	*Myotis daubentonii*	XX
13	*Myotis emarginatus*	U1(x)
14	*Myotis myotis*	U1(x)
15	*Myotis nattereri*	U1(x)
16	*Nyctalus lasiopterus*	U1(x)
17	*Nyctalus leisleri*	U1(x)
18	*Nyctalus noctula*	U1(x)
19	*Pipistrellus nathusii*	U1(x)
20	*Pipistrellus pipistrellus*	FV(x)
21	*Pipistrellus pygmaeus*	U1(x)
22	*Plecotus auritus*	U1(x)
23	*Rhinolophus blasii*	U1(x)
24	*Rhinolophus euryale*	U1(x)
25	*Rhinolophus ferrumequinum*	U1(x)
26	*Rhinolophus hipposideros*	FV(x)
27	*Sciurus anomalus*	XX
28	*Tadarida teniotis*	FV(=)
29	**Ursus arctos*	U1(+)
30	*Vespertilio murinus*	U1(x)
Plant species		
1	*Buxbaumia viridis*	U2(x)
2	**Centaurea attica* ssp. *megarensis*	FV(=)
3	**Cephalanthera cucullata*	U1(x)
4	*Fritillaria gussichiae*	U1(x)
5	*Himantoglossum jankae*	FV(=)
6	*Paeonia clusii* ssp. *rhodia*	U1(x)
7	*Phoenix theophrasti*	U1(=)
8	*Polygonum praelongum*	U1(x)
9	*Rhododendron luteum*	FV(=)
10	*Ruscus aculeatus*	FV(=)
11	*Tozzia carpathica*	XX
12	*Woodwardia radicans*	U2(x)
13	*Zelkova abelicea*	U1(x)

Of the species mentioned above and as per the last report according to Article 17 of the Directive for the period 2013-2018, all 10 invertebrates have a poor conservation status (U1), 2 amphibians have a poor conservation status (U1) and 6 have a favourable conservation status (FV), 2 reptiles have a poor conservation status (U1) and 4 have a favourable conservation status (FV), 6 plants have a poor conservation status (U1), 2 have a bad conservation status (U2), 4 have a favourable conservation status (FV), and 1 has an unknown conservation status (XX); with regard to mammals, 18 have a poor conservation status (U1), 5 have a favourable conservation status (FV), and 7 have an unknown conservation status (XX).

Bird species under Article 12 of Directive 2009/147/EC

Fourteen (14) bird species of Community interest have been selected as priority for measures to be implemented over the period 2021-2027; these are wintering (W) and/or breeding (B) species in ecosystems relevant to the "Woodland and forest" category:

No	Species	Short-term population trend 2007-2018
1	*Accipiter brevipes* (B)	=
2	*Aegypius monachus* (B)	+
3	*Aquila chrysaetos* (B)	-
4	*Aquila fasciata* (B)	=
5	*Aquila heliaca* (B)	=
6	*Clanga clanga* (W)	=
7	*Dendrocopos leucotos* (B)	=
8	*Ficedula semitorquata* (B)	x
9	*Lanius collurio* (B)	-
10	*Poecile lugubris* (B)	uncertain
11	*Scolopax rusticola* (B)	=
12	*Sitta krueperi* (B)	+
13	*Streptopelia turtur* (B)	-
14	*Turdus iliacus* (W)	=

Of the species mentioned above and as per the last report according to Article 12 of the Directive for the period 2013-2018, 6 have a stable short-term population trend, 2 have an unknown short-term population trend, 3 have a decreasing short-term population trend, and 2 have an increasing short-term population trend.

Conservation measures implemented for the habitat types and species of Community interest mentioned above, including birds

For several woodland habitat types, restoration actions have been implemented, such as: a) fencing for protection from grazing and from access for human activities in general, to the end of reinforcing regeneration (2270*, 91E0*, 9370*); b) planting to restore the structure and function of habitat types (2270*, 9280, 9290, 92A0, 9340, 9370*, 9540); c) implementing measures against erosion and floods, and towards restoring hydrological conditions (2270*, 91E0*, 9290, 9540); d) combatting invasive alien species (91E0*); e) establishing a micro-reserve and expanding the area (9370*); f) using traditional management practices, such as selective removal of broadleaves and controlled grazing (9560*). Additionally, actions have been implemented to prevent wildfires and restore woodland following wildfires, along with actions to restore forest habitat types that form the habitat of the carnivore mammals **Ursus arctos* and **Canis lupus*.

With regard to the plant species *Zelkova abelicea* and **Cephalanthera cucullata*, conservation projects have been implemented, including the construction of fences to protect them from grazing, and measures to reinforce natural regeneration. Additionally, with regard to these species and also *Phoenix theophrasti*, actions are being implemented towards *ex-situ* conservation in gene banks. With regard to the lepidopteran **Euplagia quadripunctaria*, the conservation measures implemented aim to increase the species' population. With regard to cave dwelling Chiroptera, actions are implemented to communicate and raise awareness, encourage citizen science, and reinforce their protection by preparing action plans.

With regard to the raptor species *Aegypius monachus*, implemented actions include operating feeding stations, operating a detection team for poisoned baits, maintaining/creating clearings to improve foraging grounds, and building stakeholder capacity. In the context of LIFE-IP 4 Natura, an action plan is being prepared for Aegypius monachus, to be implemented in the near future. Actions for the raptor species *Aquila fasciata* are being implemented in the context of a LIFE project, and include improving the habitat (by cultivating abandoned fields), insulating electricity pylons, reducing disturbances from tourism, and building capacity. With regard to the bird species *Streptopelia turtur*, actions have been implemented to reduce killing due to illegal human activities.

Threats and pressures to habitat types of Community interest

As per the last report according to Article 17 of the Directive, the main remaining threats and pressures to the habitat types, and therefore the species, that are associated with the "Woodland and forest" category and will be managed through the PAF measures are:

- natural succession, which results to changes in species composition,
- conversion to farmland,
- abstraction from groundwater, surface water, or mixed water,

- relationships between species (competition, predation, parasitism, pathogens),
- disposal of liquid waste and sewage,
- logging and removal of trees,
- sports, tourism, and recreational activities,
- intensive grazing or overgrazing by animals,
- abandonment of traditional forest management methods,
- natural wildfires,
- roadworks.

Measures needed to maintain or restore favourable conservation status

Conservation/protection actions within the Natura 2000 Network

- Implementing actions to protect riparian forests (91E0*, 91F0, 92A0, 92D0, 92C0) and habitat types 9140, 91CA, 9530*: planting typical local species, removing alien species, reinforcing natural regeneration, removing waste, managing water sources, implementing selective logging, converting coppice to high forest, studying the causes of drought, installing a microorganism and abiotic agent monitoring system, cutting and removing infected trees, implementing silvicultural treatment, etc.

- Implementing actions to protect habitat types 9260 and 92C0 from plant pathogens (*Cryphonectria parasitica*, chestnut gall wasp, canker stain): carrying out immunisations, awareness, scientifically and financially supporting the implementation of measures, preventing the expansion

- Implementing conservation actions for the plant *Juniperus drupacea* to enrich habitat type 9560*: collecting/curating/germinating seeds, collecting cuttings, producing seedlings in nurseries, creating appropriate stands, etc.

- Implementation of *ex-situ* conservation actions to enrich/restore habitat type 95A0: collecting/curating/germinating seeds, producing seedlings in nurseries

- Implementing management actions in forests that form the habitats of invertebrate, plant, and bird species occurring in deadwood and old trees: studying, recording and conserving over-mature trees, increasing/conserving lying deadwood, changing management practices for commercial forests, training forest authority personnel, installing artificial nests

- Protecting the habitat of the plant species **Cephalanthera cucullata* from grazing in forest areas: fencing individuals (small-scale), monitoring

- Implementing actions to restrict/deny access to illegal roads using permanent or special barriers (piling, filling, installing access control barriers, etc.) in fragmented woodland and forests, installing signs, promoting environmental education

Restoration actions within the Natura 2000 Network

- Implementing actions to restore habitat types 2270*, 9370*, 9560*, and 95A0: restricting/denying access, installing signs, promoting environmental education, removing alien species, implementing actions to prevent infection from *Rhynchophorus ferrugineus*, using *ex-situ* conservation of seeds, producing seedlings in nurseries, implementing actions to restore structural elements and functions, implementing promotion actions, developing and applying silvicultural treatment by removing broadleaves, planting main structural elements (woody species) and the herbaceous layer, monitoring pressures and threats

- Implementing measures to rehabilitate coppice forests through thinning operations (habitat types 9110/ 9130/ 9140/ 9150/ 91M0/ 9250/ 9280/ 9340)

- Restoring degraded forest habitat types: designing and implementing afforestation in areas affected by wildfires

Conservation/protection actions beyond the Natura 2000 Network

- Preserving ecological corridors in habitat types 2270* and 91E0* to improve the cohesion of the Natura 2000 network, to the end of facilitating the movement of species of Community interest, preserving biodiversity, and promoting the adaptation to climate change

- Implementing actions to protect habitat type 92C0 from plant pathogens (canker stain): communicating, scientifically and financially supporting the implementation of measures, preventing the expansion

- Implementing actions to restrict/deny access to illegal roads using permanent or special barriers (piling, filling, installing access control barriers, etc.) in fragmented woodland and forests, installing signs, promoting environmental education

Prioritization of measures to be implemented during the next MFF period

All the measures listed in the following tables are prioritised by Greece for the period 2021-2027.

List of prioritized measures to be carried out, and estimated costs for these measures

E.2.6

- within Natura 2000 sites designated for the targeted habitats and species

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
1. Implementing actions to restore habitat type 2270*: limiting/restricting access, installing signs, promoting environmental awareness, removing alien species	One-off	1 Natura 2000 site	€14,286	Ionian Islands	CF, ERDF, LIFE, INTERREG
	One-off	1 Natura 2000 site	€14,286	Peloponnese	
	One-off	2 Natura 2000 site	€28,571	Western Greece	
2. Implementing actions to protect riparian forests (habitat types 91E0*, 91F0, 92A0, 92D0, 92C0): planting typical local species, removing alien species, reinforcing natural regeneration, removing waste, managing water sources, etc.	One-off	1 Natura 2000 site	€28,571	Eastern Macedonia and Thrace	CF, ERDF, LIFE
	One-off	4 Natura 2000 sites	€114,286	South Aegean	
	One-off	5 Natura 2000 sites	€142,857	Crete	
	One-off	4 Natura 2000 sites	€114,286	Central Macedonia	
	One-off	1 Natura 2000 site	€28,571	Western Macedonia	
	One-off	1 Natura 2000 site	€42,857	Thessaly	
	One-off	1 Natura 2000 site	€28,571	Epirus	
	One-off	1 Natura 2000 site	€28,571	Ionian Islands	
	One-off	5 Natura 2000 sites	€142,857	Western Greece	
	One-off	2 Natura 2000 sites	€57,143	Peloponnese	
3. Implementing measures to rehabilitate coppice forests through thinning operations (habitat types 9110/ 9130/ 9140/ 9150/ 91M0/ 9250/ 9280/ 9340)	One-off	4000 ha	€685,714	National level	CF, ERDF, EAFRD, LIFE
4. Implementing actions to conserve habitat type 9140: using selective logging, promoting natural reproduction with regeneration logging, reinforcing natural regeneration, converting coppice to high forest	One-off	1 Natura 2000 site	€7,143	Western Macedonia	CF, ERDF, LIFE
5. Implementing actions to conserve and restore habitat type	Recurrent	1 project	€11,143	Central Macedonia	CF, ERDF, LIFE

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
91CA: studying the causes of drought, installing a microorganism and abiotic agent monitoring system, cutting and removing infected trees, implementing silvicultural treatment, etc.	Recurrent	1 project	€11,143	Eastern Macedonia and Thrace	
6. Implementing actions to protect habitat type 9260 from the fungus *Cryphonectria parasitica*: carrying out immunisations	One-off	1 project/year	€240,000	National level	CF, ERDF, LIFE
7. Implementing actions to protect habitat type 9260: communicating, scientifically and financially supporting the implementation of measures against the chestnut gall wasp	One-off	1 project	€17,143	National level	CF, ERDF, LIFE
8. Implementing actions to protect habitat type 92C0: providing information on and preventing the expansion of canker stain of plane trees within the Natura 2000 network	Recurrent	100 Natura 2000 sites	€214,286	National level	CF, ERDF, LIFE
9. Implementing actions to restore habitat type 9310 and adapt it to climate change: selecting resistant clones, implementing artificial planting, adopting alternative management practices, etc.	One-off	1 Natura 2000 site	€7,143	Thessaly	CF, ERDF, LIFE
	One-off	4 Natura 2000 sites	€28,571	Crete	
10. Implementing actions to restore habitat type 9370*: implementing actions to prevent infection from *Rhynchophorus ferrugineus*, using *ex-situ* conservation of seeds, producing seedlings in nurseries, implementing actions to restore structural elements and functions, implementing promotion actions, etc.	One-off	6 Natura 2000 sites	€114,286	Crete	CF, ERDF, LIFE
11. Implementing actions to manage habitat type 9530*: using planting and silvicultural treatment (€2,500/hectare)	Recurrent	500 ha	€178,571	Central Macedonia	CF, ERDF, LIFE
	Recurrent	100 ha	€35,714	Eastern Macedonia and Thrace	
	Recurrent	500 ha	€178,571	Peloponnese	
	Recurrent	500 ha	€178,571	Western Macedonia	
	Recurrent	1,000 ha	€357,143	Epirus	
	Recurrent	500 ha	€178,571	North Aegean	
12. Implementing conservation actions for *Juniperus drupacea* to enrich/restore habitat type 9560*: collecting/curating/germinating seeds, collecting cuttings, producing seedlings in nurseries, creating appropriate stands, etc.	One-off	3,200 ha	€51,429	Peloponnese	CF, ERDF, LIFE
13. Implementing actions to restore habitat type 9560*: developing and applying silvicultural treatments by removing broadleaves	Recurrent	1 Natura 2000 site	€42,857	Western Macedonia	CF, ERDF, LIFE
	Recurrent	1 Natura 2000 site	€42,857	Epirus	
	Recurrent	1 Natura 2000 site	€42,857	Central Greece	
	Recurrent	1 Natura 2000 site	€42,857	Peloponnese	
14. Implementation of *ex-situ* conservation actions to enrich/restore habitat type 95A0: collecting/curating/germinating seeds, producing seedlings in nurseries	One-off	1 Natura 2000 site	€8,571	Epirus	CF, ERDF, LIFE
	One-off	1 Natura 2000 site	€8,571	Thessaly	
15. Implementing actions to restore habitat type 95A0: organising planting of the main structural elements (woody species) and the herbaceous layer, monitoring pressures and threats	One-off	2 Natura 2000 sites	€28,571	Central Macedonia	CF, ERDF, LIFE
16. Implementing actions to manage forest habitats of invertebrate, plant, and bird species (*Osmoderma eremita, *Rosalia alpina, Cerambyx cerdo, Buxbaumia viridis, Dendrocopos leucotos, Ficedula semitorquata*) occurring in deadwood and old trees: studying, recording and conserving over-mature trees, increasing/conserving lying deadwood, changing commercial forest management practices, training forest authority personnel, installing artificial nests	Recurrent	1 project	€20,571	Western Macedonia	CF, ERDF, LIFE
	Recurrent	1 project	€20,571	Central Macedonia	
	Recurrent	1 project	€20,571	Eastern Macedonia and Thrace	
	Recurrent	1 project	€20,571	Epirus	
	Recurrent	1 project	€20,571	Central Greece	
	Recurrent	1 project	€20,571	Thessaly	
17. Improving and protecting the habitat of the species *Cephalanthera cucullata* from grazing in forest areas: fencing individuals (small-scale), monitoring	Recurrent	1 Natura 2000 site	€7,143	Crete	CF, ERDF, LIFE
18. Restoring degraded forest habitat types (9540): designing and implementing afforestation in areas affected by wildfires	One-off	1 Natura 2000 site	€85,714	Attica	CF, ERDF, LIFE

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
19. Implementing actions to restore forest habitat types within the Natura 2000 network that are fragmented by illegal roads: installing permanent or special barriers (piling, filling, installing access control barriers, etc.)	One-off	1 project	€18,857	Thessaly	CF, ERDF, LIFE
	One-off	1 project	€18,857	South Aegean	
	One-off	1 project	€18,857	Ionian Islands	
	One-off	1 project	€18,857	Epirus	
	One-off	1 project	€18,857	Western Macedonia	
	One-off	1 project	€18,857	Western Greece	
	One-off	1 project	€18,857	North Aegean	
	One-off	1 project	€18,857	Central Macedonia	
	One-off	1 project	€18,857	Central Greece	
	One-off	1 project	€18,857	Eastern Macedonia and Thrace	
	One-off	1 project	€18,857	Peloponnese	
	One-off	1 project	€18,857	Attica	
	One-off	1 project	€18,857	Crete	
20. Implementing actions to restore habitat type 91E0* in montane wetlands: repairing stream dikes, constructing a small dam	One-off	2 Natura 2000 sites	€4,286	Central Macedonia	CF, ERDF, LIFE

- additional measures beyond Natura 2000 (wider green infrastructure measures)

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
21. Preserving and restoring ecological corridors in habitat types 2270* and 91E0* to improve the cohesion of the Natura 2000 network, to the end of facilitating the movement of species of Community interest, preserving biodiversity, and promoting the adjustment to climate change	One-off	1 project	€29,143	National level	CF, ERDF, LIFE
22. Implementing actions to protect habitat type 92C0: providing information on and preventing the expansion of canker stain of plane trees beyond the Natura 2000 network	Recurrent	1 project	€34,286	National level	CF, ERDF, LIFE
23. Implementing actions to restore woodland and forests beyond the Natura 2000 network that are fragmented by illegal roads: installing permanent or special barriers (piling, filling, installing access control barriers, etc.)	One-off	1 project	€18,857	Thessaly	CF, ERDF, LIFE
	One-off	1 project	€18,857	South Aegean	
	One-off	1 project	€18,857	Ionian Islands	
	One-off	1 project	€18,857	Epirus	
	One-off	1 project	€18,857	Western Macedonia	
	One-off	1 project	€18,857	Western Greece	
	One-off	1 project	€18,857	North Aegean	
	One-off	1 project	€18,857	Central Macedonia	
	One-off	1 project	€18,857	Central Greece	
	One-off	1 project	€18,857	Eastern Macedonia and Thrace	
	One-off	1 project	€18,857	Peloponnese	
	One-off	1 project	€18,857	Attica	

	One-off	1 project	€18,857	Crete	

Expected results for targeted species and habitat types

- Improving the conservation status of habitat types 2270*, 9140, 9150, 91CA, 91F0, 91E0*, 92A0, 9310, 9370*, 9560*, 95A0, which have a poor conservation status (improving structures and functions)

- Conserving/restoring the habitats of the species of Community interest *Osmoderma eremita, *Rosalia alpina, Cerambyx cerdo, Dendrocopos leucotos, Ficedula semitorquata, Buxbaumia viridis*, and **Cephalanthera cucullata*, which have a poor or bad conservation status, as well as of other birds found in forest ecosystems

- Protecting forests (through prevention, protection, and control measures) from plant pathogens (*Cryphonectria parasitica*, *Dryocosmus kuriphilus*, *Ceratocystis platani*) and conserving healthy stands in habitat types 9260 and 92C0

- Promoting the adaptation of habitat types 9110, 9130, 9140, 9150, 91M0, 9250, 9280, 9340 to climate change

- Encouraging appropriate management of forest habitat types by stakeholders

- Combatting and limiting the spread of invasive alien species in habitat types 2270*, 91E0*, 91F0, 92A0, 92D0, 92C0

- Conserving the genetic material of important forest species (*Juniperus drupacea*, *Phoenix theophrasti*, *Pinus heldreichii*) for restoration actions

- Restoring forest habitat types following wildfires

- Limiting the fragmentation of forest ecosystems by implementing actions to construct/restore ecological corridors and restrict access with permanent or special barriers, within and beyond the Natura 2000 network

Expected results: other benefits

- Improving the resilience of woodland and forests to the effects of climate change and wildfires

- Promoting ecotourism activities in forest habitats of birds and species of Community interest

- Appropriately managing human activities in woodland and forests to reduce their impact on habitat types and species of Community interest

- Communicating with and raising awareness among the general population and stakeholders on the need to protect woodland and forests, and the importance of the relevant habitat types

- Protecting farmers from income loss due to diseases caused by plant pathogens

- Creating/reinforcing green infrastructure to improve the connectivity between fauna habitats

E.2.7. Rocky habitats, dunes and sparsely vegetated land

Current status of habitats and species, conservation measures taken until now and their impact so far, remaining pressures and threats

Habitat types according to Annex I to Directive 92/43/EEC

Twelve (12) habitat types associated with the "Rocky habitats, dunes and sparsely vegetated land" ecosystem category have been recorded in Greece:

No	Code	Name	Conservation status 2013-2018
1	1210	Annual vegetation of drift lines	U1(=)
2	1240	Vegetated sea cliffs of the Mediterranean coasts with endemic *Limonium* spp.	FV(=)
3	1410	Mediterranean salt meadows (*Juncetalia maritimi*)	U1(+)
4	2110	Embryonic shifting dunes	U1(=)
5	2120	Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes")	U1(=)
6	2220	Dunes with *Euphorbia terracina*	FV(=)
7	2230	*Malcolmietalia* dune grasslands	U1(=)
8	8140	Eastern Mediterranean screes	FV(=)
9	8210	Calcareous rocky slopes with chasmophytic vegetation	FV(=)
10	8220	Siliceous rocky slopes with chasmophytic vegetation	FV(=)
11	8310	Caves not open to the public	FV(=)
12	8320	Fields of lava and natural excavations	FV(=)

Of the habitats listed above and as per the last report according to Article 17 of the Directive for the period 2013-2018, 5 have a poor conservation status (1210, 1410, 2110, 2120, and 2230 – U1) and 7 have a favourable conservation status (1240, 2220, 8140, 8210, 8220, 8310, and 8320 – FV).

Species according to Annexes II, IV, and V of Directive 92/43/EEC

Seventy-one (71) habitat types associated with the "Rocky habitats, dunes and sparsely vegetated land" ecosystem category have been recorded in Greece:

No	Species	Conservation status 2013-2018
Invertebrate species		
1	*Papilio alexanor*	FV(=)
2	*Parnassius apollo*	U1(-)
3	*Stenobothrus eurasius*	U1(x)
Reptile species		
1	*Anatololacerta anatolica*	U1(-)
2	*Anatololacerta oertzeni*	FV(=)
3	**Caretta caretta*	U2(-)
4	*Coronella austriaca*	FV(=)
5	*Mediodactylus kotschyi*	FV(=)
6	*Dolichophis caspius*	FV(=)
7	*Dolichophis jugularis*	FV(=)
8	*Eirenis modesta*	FV(x)
9	*Hellenolacerta graeca*	FV(=)
10	*Hierophis gemonensis*	FV(=)
11	*Hemorrhois nummifer*	FV(=)
12	*Hierophis viridiflavus*	FV(=)
13	*Lacerta agilis*	FV(x)
14	*Laudakia stellio*	FV(=)
15	**Macrovipera schweizeri*	U1(-)
16	*Ophiomorus punctatissimus*	XX
17	*Ophisops elegans*	FV(=)
18	*Platyceps najadum*	FV(=)
19	*Podarcis cretensis*	FV(=)
20	*Podarcis erhardii*	FV(=)
21	*Podarcis gaigeae*	FV(=)
22	*Podarcis levendis*	FV(=)
23	*Podarcis milensis*	FV(=)
24	*Podarcis muralis*	FV(=)
25	*Podarcis peloponnesiaca*	FV(=)
26	*Telescopus falax*	FV(=)
27	*Testudo graeca*	U1(-)
28	*Vipera ammodytes*	FV(=)
Mammal species		
1	*Capra aegagrus*	FV(x)
2	*Eptesicus anatolicus*	U1(x)
3	*Eptesicus serotinus*	XX
4	*Hypsugo savii*	FV(=)
5	*Pipistrellus hanaki*	U1(x)
6	*Plecotus austriacus*	XX
7	*Rupicapra rupicapra balcanica*	U2(+)
8	*Vespertilio murinus*	U1(x)

No	Species	Conservation status 2013-2018
Plant species		
1	**Androcymbium rechingeri*	U1(-)
2	**Anthemis glaberrima*	FV(=)
3	*Artemisia eriantha*	U2(x)
4	*Asyneuma giganteum*	U1(-)
5	**Bupleurum capillare*	U1(+)
6	**Bupleurum kakiskalae*	U1(=)
7	**Centaurea heldreichii*	FV(=)
8	*Centaurea immanuelis-loewii*	XX
9	**Centaurea kalambakensis*	U1(x)
10	*Centaurea lancifolia*	U1(=)
11	**Centaurea niederi*	FV(=)
12	**Centaurea peucedanifolia*	U1(=)
13	**Centaurea princeps*	U1(=)
14	**Clinopodium taygeteum*	FV(=)
15	**Consolida samia*	XX
16	**Convolvulus argyrothamnus*	U2(x)
17	**Crepis crocifolia*	U1(-)
18	*Fritillaria conica*	U1(x)
19	*Fritillaria gussichiae*	U1(x)
20	**Globularia stygia*	FV(+)
21	*Helichrysum sibthorpii*	FV(=)
22	**Hypericum aciferum*	FV(=)
23	**Iberis runemarkii*	U2(x)
24	*Jankaea heldreichii*	FV(=)
25	**Linaria hellenica*	U1(-)
26	*Nepeta argolica* ssp. *dirphya*	FV(=)
27	**Nepeta sphaciotica*	U1(=)
28	*Origanum dictamnus*	FV(x)
29	*Polygonum praelongum*	U1(x)
30	*Ramonda serbica*	XX
31	**Silene holzmannii*	U1(x)
32	**Silene orphanidis*	FV(=)
33	*Solenanthus albanicus*	XX
34	**Symphytum cycladense*	FV(x)
35	*Viola athois*	U1(-)
36	*Viola delphinantha*	U1(x)

Of the species mentioned above and as per the last report according to Article 17 of the Directive for the period 2013-2018, 2 invertebrates have a poor conservation status (U1) and 1 has a favourable conservation status (FV); 3 reptiles have a poor conservation status (U1), 1 has an unknown conservation status (XX), and 24 have a favourable conservation status (FV); 17 plants have a poor conservation status (U1), 3 have a bad conservation status (U2), 4 have an unknown conservation status (XX), and 12 have a favourable conservation status (FV); with regard to mammals, 3 have a poor conservation status (U1), 1 has a bad conservation status (U2), 2 have a favourable conservation status, and 2 have an unknown conservation status (XX).

Bird species under Article 12 of Directive 2009/147/EC

Twenty (27) bird species of Community interest have been selected as priority for measures to be implemented over the period 2021-2027; these are wintering (W) and/or breeding (B) species in ecosystems relevant to the "Rocky habitats, dunes and sparsely vegetated land" category:

No	Species	Short-term population trend 2007-2018
1	*Alectoris graeca* (B)	x
2	*Aquila chrysaetos* (B)	-
3	*Aquila fasciata* (B)	=
4	*Calidris alpina* (W)	x
5	*Calonectris diomedea* (B)	=
6	*Charadrius alexandrinus* (B)	=
7	*Emberiza caesia* (B)	=
8	*Emberiza cineracea* (B)	-
9	*Emberiza melanocephala* (B)	-
10	*Falco biarmicus* (B)	+
11	*Falco eleonorae* (B)	+
12	*Falco naumanni* (B)	+
13	*Gypaetus barbatus* (B)	+
14	*Haematopus ostralegus* (B)	+
15	*Larus audouinii* (B)	-
16	*Larus genei* (B)	+
17	*Monticola saxatilis* (B)	=
18	*Neophron percnopterus* (B)	-
19	*Phalacrocorax aristotelis desmarestii* (B)	=
20	*Puffinus yelkouan* (B)	=
21	*Pyrrhocorax pyrrhocorax* (B)	-
22	*Recurvirostra avosetta* (B)	+
23	*Sitta neumayer* (B)	=
24	*Sternula albifrons* (B)	=
25	*Vanellus spinosus* (B)	=
26	*Vanellus vanellus* (B)	=
27	*Mergus merganser* (B)	=

Of the species mentioned above and as per the last report according to Article 12 of the Directive for the period 2013-2018, 12 have a stable short-term population trend, 2 have an unknown short-term population trend, 6 have a decreasing short-term population trend, and 7 have an increasing short-term population trend.

Conservation measures implemented for the habitat types and species of Community interest mentioned above, including birds

With regard to habitat type 1240, actions have been implemented to manage grazing and combat alien species, while with regard to habitat type 1410, actions have been implemented to restore hydrological conditions. With regard to habitat types 2110, 2120, and 2220, which also form the habitat of *Caretta caretta,* measures have been taken mainly to restrict access.

With regard to the species **Androcymbium rechingeri*, **Anthemis glaberrima, *Hypericum aciferum*, and **Nepeta sphaciotica*, plant micro-reserves have been established, and actions have been implemented towards *ex-situ* conservation. *Ex-situ* conservation is also carried out for the species *Asyneuma giganteum and *Convolvulus argyrothamnus*. With regard to the species **Androcymbium rechingeri*, additional actions have been implemented to manage visitors, reinforce the population, record biotic and abiotic parameters, and inform the public. In the context of LIFE-IP 4 Natura, an action plan is being prepared for the plant **Silene holzmanii* and the lepidopteran *Parnassius apollo*; both action plans will be implemented over the current and next financing period.

With regard to the species *Neophron percnopterus* and *Gypaetus barbatus*, actions include the operation of feeding stations and detection teams for poisoned baits, and capacity building to stakeholders. With regard to *Neophron percnopterus*, an action plan has been established, while an action plan is being prepared for *Gypaetus barbatus* in the context of LIFE-IP 4 Natura. Both action plans will be implemented in the near future. Actions have also been implemented for *Falco eleonorae*, including constructing artificial nests, improving the foraging habitat, and eliminating rats on islets. With regard to the species *Calonectris diomedea, Larus audouinii, Phalacrocorax aristotelis desmarestii* and *Puffinus yelkouan*, the measures implemented to date are detailed in section E.2.1. With regard to the species *Falco naumanni*, artificial nests have been built, and measures relevant to the agricultural sector have been described in section E.2.5.

Threats and pressures to habitat types of Community interest

As per the last report according to Article 17 of the Directive, the main threats and pressures to the habitat types, and therefore the species, that are associated with the "Rocky habitats, dunes and sparsely vegetated land" category and will be managed through the PAF measures are:

- intensive grazing or overgrazing by animals,
- sports, tourism, and recreational activities,
- land use change,
- afforestation and conversion to farmland,
- use of plant protection chemicals in agriculture,
- construction or modification, e.g. of housing and settlements in existing urban or recreational areas / of industrial infrastructure in existing commercial or industrial areas,
- abstraction from groundwater, surface water, or mixed water, for irrigation,
- mining,
- mixed sources of pollution in surface water and groundwater,
- activities in the land, sea, and air transport sector.

Measures needed to maintain or restore favourable conservation status

Conservation/protection actions within the Natura 2000 Network

- Implementing actions to protect habitat type 2110 from degradation: limiting access by creating protected routes

- Protecting the nesting habitats of sea birds, Eleonora's falcon, and *Alectoris graeca*: combatting and controlling rat populations, developing a study to select intervention sites, creating clearings, controlling grazing

- Implementing actions to protect the habitat of **Iberis runemarkii*, **Crepis crocifolia, *Linaria hellenica, *Centaurea peucedanifolia*: building fences, installing signs, informing the local population, monitoring, using spatial planning for activities, removing alien species, establishing micro-reserves, promoting environmental education, controlling grazing, etc.

- Implementing actions to protect the habitat of Chiroptera in habitat type 8310: installing new or replacing existing fences in important caves, implementing actions to limit light pollution, restoring cave chambers, communicating, etc.

- Implementing actions to limit/restrict access, using permanent or special barriers (piling, filling, installing access control barriers, etc.), to rocky habitats, dunes and sparsely vegetated land fragmented by illegal roads, installing signs, promoting environmental education

Restoration actions within the Natura 2000 Network

- Implementing actions to restore habitat types 1210, 2110, and 2120: restricting/denying access, installing signs, promoting environmental awareness, preserving functional and structural integrity, combatting alien species

- Implementing actions to conserve and restore the breeding habitats of **Caretta caretta* against the effects of climate change, erosion, land use change, coastal and tourism development, visitor access, vehicles, and light pollution

- Implementing measures to improve and restore the habitat of **Macrovipera schweizeri*, and decrease its fragmentation: maintaining and constructing passages, planting native species, communicating with interested parties, monitoring, removing alien species

- Reinforcing extensive grazing by favouring livestock farmer mobility to expand the raptors' foraging habitat

Conservation/protection actions beyond the Natura 2000 Network

- Implementing actions to protect the habitat of Chiroptera in habitat type 8310: installing new or replacing existing fences in important caves, implementing actions to limit light pollution, etc.

- Implementing actions to limit/restrict access, using permanent or special barriers (piling, filling, installing access control barriers, etc.), to rocky habitats, dunes and sparsely vegetated land fragmented by illegal roads, installing signs, promoting environmental education

Restoration actions beyond the Natura 2000 Network

- Implementing actions to restore habitat type 1410: removing aggregates, restoring vegetation, building fences

Prioritization of measures to be implemented during the next MFF period

All the measures listed in the following tables are prioritised by Greece for the period 2021-2027.

List of prioritized measures to be carried out, and estimated costs for these measures

E.2.7

- within Natura 2000 sites designated for the targeted habitats and species

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
1. Implementing actions to restore habitat type 1410: managing water resources, communicating with and training stakeholders (farmers, livestock breeders), installing signs, restoring structure and function, etc.	One-off	1 Natura 2000 site	€14,286	Eastern Macedonia and Thrace	CF, ERDF, LIFE
	One-off	1 Natura 2000 site	€14,286	Attica	
	One-off	3 Natura 2000 sites	€42,857	Western Greece	
	One-off	1 Natura 2000 site	€14,286	Central Macedonia	
	One-off	7 Natura 2000 sites	€100,000	South Aegean	
	One-off	1 Natura 2000 site	€14,286	Peloponnese	
	One-off	2 Natura 2000 sites	€28,571	Central Greece	
	One-off	5 Natura 2000 sites	€71,429	North Aegean	
2. Implementing actions to unify wetlands and therefore improve the conservation status of aquatic habitats (habitat type 1410) and bird species' habitats	One-off	1 project	€214,286	Attica	CF, ERDF, LIFE
3. Implementing actions to restore habitat type 1210: restricting/denying access, installing signs, promoting environmental awareness	One-off	2 Natura 2000 sites	€14,286	Attica	CF, ERDF, LIFE, INTERREG
	One-off	1 Natura 2000 site	€7,143	Central Macedonia	
	One-off	1 Natura 2000	€7,143	Ionian Islands	

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
		site			
	One-off	1 Natura 2000 site	€7,143	North Aegean	
	One-off	6 Natura 2000 sites	€42,857	South Aegean	
	One-off	1 Natura 2000 site	€7,143	Crete	
	One-off	3 Natura 2000 sites	€21,429	Eastern Macedonia and Thrace	
4. Implementing actions to protect habitat type 2110 from degradation: limiting access by creating protected routes	One-off	1 Natura 2000 site	€7,143	Thessaly	CF, ERDF, LIFE
5. Implementing actions to restore habitat types 2110 and 2120: restricting access, creating protected routes, installing signs around sites, preserving functional and structural integrity, combatting alien species	One-off	1 Natura 2000 site	€14,286	Eastern Macedonia and Thrace	CF, ERDF, LIFE
	One-off	2 Natura 2000 sites	€28,571	Attica	
	One-off	2 Natura 2000 sites	€28,571	Western Greece	
	One-off	1 Natura 2000 site	€14,286	Ionian Islands	
	One-off	2 Natura 2000 sites	€28,571	Epirus	
	One-off	5 Natura 2000 sites	€71,429	Central Macedonia	
	One-off	4 Natura 2000 sites	€114,286	Crete	
	One-off	6 Natura 2000 sites	€171,429	South Aegean	
1. Implementing actions to restore habitat type 2230: limiting/restricting access, installing signs, promoting environmental awareness, removing alien species, planting typical species	One-off	2 Natura 2000 site	€14,286	South Aegean	CF, ERDF, LIFE, INTERREG
	One-off	1 Natura 2000 site	€7,143	Crete	
2. Protecting the nesting habitats of sea birds (*Larus audouinii, Phalacrocorax aristotelis desmarestii, Calonectris diomedea, Puffinus yelkouan, Hydrobates pelagicus*) and of *Falco eleonorae*: combatting and controlling rat populations	Recurrent	215 ha	€12,900	South Aegean	CF, ERDF, LIFE
	Recurrent	280 ha	€16,800	Crete	
	Recurrent	70 ha	€4,200	Eastern Macedonia and Thrace	
	Recurrent	130 ha	€7,800	Attica	
	Recurrent	200 ha	€12,000	North Aegean	
	Recurrent	80 ha	€4,800	Thessaly	
	Recurrent	200 ha	€12,000	Ionian Islands	
	Recurrent	120 ha	€7,200	Central Greece	
8. Taking conservation measures for the habitat of the species *Alectoris graeca*: developing a study to select intervention sites, creating clearings, controlling grazing	Recurrent	1 Natura 2000 site	€17,143	Eastern Macedonia and Thrace	CF, ERDF, EAFRD, LIFE
	Recurrent	1 Natura 2000 site	€17,143	Central Macedonia	
9. Improving and protecting the habitat of chasmophytic species (**Iberis runemarkii)*: building fences, informing the local population, monitoring, spatial planning for activities, removing	Recurrent	1 Natura 2000 site	€14,286	North Aegean	CF, ERDF, LIFE, INTERREG

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
alien species, etc.					
10. Improving and protecting the habitat of chasmophytic species (**Centaurea princeps*): building fences, informing the local population, monitoring, using spatial planning for activities, removing alien species, etc.	One-off	1 Natura 2000 site	€34,286	Central Greece	CF, ERDF, LIFE, INTERREG
11. Improving and protecting the rocky habitats of plant species (**Crepis crocifolia*): controlling grazing, informing local communities, promoting sustainable practices, etc.	Recurrent	1 Natura 2000 site	€28,571	Peloponnese	CF, ERDF, EAFRD, LIFE, INTERREG
12. Improving and protecting the dune habitats of plant species (**Linaria hellenica*): controlling and spatial planning of activities (e.g., building paths to manage visitors), installing signs, establishing a plant micro-reserve, promoting environmental education, etc.	One-off	1 Natura 2000 site	€14,286	Peloponnese	CF, ERDF, LIFE, INTERREG
13. Improving and protecting the sparsely vegetated habitats of species (**Bupleurum capillare*): removing shrubs, etc.	Recurrent	1 Natura 2000 site	€14,286	Central Greece	CF, ERDF, LIFE
14. Improving and protecting the habitat of chasmophytic species (**Centaurea peucedanifolia*, *Viola athois*): building fences, informing the local population, monitoring, spatial planning for activities, removing alien species, etc.	One-off	1 Natura 2000 site	€7,143	Central Macedonia	CF, ERDF, LIFE, INTERREG
15. Improving and protecting the habitat of *Asyneuma giganteum*: controlling grazing, informing stakeholders on preventing disasters due to construction work	Recurrent	3 Natura 2000 sites	€21,429	South Aegean	CF, ERDF, EAFRD, LIFE, INTERREG
16. Implementing actions to conserve and restore the breeding habitats of **Caretta caretta* against the effects of climate change, erosion, land use change, coastal and tourism development, visitor access, vehicles, and light pollution	Recurrent	2 Natura 2000 sites	€51,429	Peloponnese	CF, ERDF, LIFE, INTERREG
	Recurrent	1 Natura 2000 site	€51,429	Ionian Islands	
	Recurrent	3 Natura 2000 sites	€51,429	Crete	
17. Implementing measures to improve and restore the habitat of **Macrovipera schweizeri*, and decrease its fragmentation: maintaining and constructing passages, planting native species, communicating with interested parties, monitoring, removing alien species	Recurrent	3 Natura 2000 sites	€25,714	South Aegean	CF, ERDF, LIFE, INTERREG
18. Implementing actions to restore coastal dunes (2220, 2250, 2260): restoring natural vegetation, maintaining and restoring natural paths	One-off	1 project	€34,286	Crete	CF, ERDF, LIFE
19. Implementing actions to restore rocky habitats, dunes and sparsely vegetated land within the Natura 2000 network that are fragmented by illegal roads: installing permanent or special barriers (piling, filling, installing access control barriers, etc.)	One-off	1 project	€18,857	Eastern Macedonia and Thrace	CF, ERDF, LIFE
	One-off	1 project	€18,857	Central Greece	
	One-off	1 project	€18,857	Ionian Islands	
	One-off	1 project	€18,857	North Aegean	
	One-off	1 project	€18,857	South Aegean	
	One-off	1 project	€18,857	Peloponnese	
	One-off	1 project	€18,857	Thessaly	
	One-off	1 project	€18,857	Central Macedonia	
	One-off	1 project	€18,857	Western Macedonia	
	One-off	1 project	€18,857	Crete	
	One-off	1 project	€18,857	Western Greece	
	One-off	1 project	€18,857	Epirus	
	One-off	1 project	€18,857	Attica	
20. Implementing pilot restoration actions within the critical coastal zone (restoring the breeding habitat of *Caretta caretta*, restoring the structure of seafront dunes, etc.)	One-off	2 projects	€428,571	National level	CF, ERDF, LIFE
21. Implementing actions to protect the habitat of Chiroptera (habitat type 8310): installing new or replacing existing fences in important caves, implementing actions to limit light pollution, restoring cave chambers, communicating, etc.	One-off	32 caves within the Natura 2000 network	€114,286	National level	CF, ERDF, LIFE

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
22. Reinforcing extensive grazing by favouring livestock farmer small-scale mobility, to expand the foraging habitat of raptors (*Aegipius monachus, Clanga pomarina, Gyps fulvus, Neophron percnopterus*)	Recurrent	1 Natura 2000 site	€240,000	Eastern Macedonia and Thrace	CF, ERDF, EAFRD, LIFE

- additional measures beyond Natura 2000 (wider green infrastructure measures)

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
23. Implementing actions to restore rocky habitats, dunes and sparsely vegetated land beyond the Natura 2000 network that are fragmented by illegal roads: installing permanent or special barriers (piling, filling, installing access control barriers, etc.)	One-off	1 project	€18,857	Epirus	CF, ERDF, LIFE
	One-off	1 project	€18,857	Attica	
	One-off	1 project	€18,857	Eastern Macedonia and Thrace	
	One-off	1 project	€18,857	Central Greece	
	One-off	1 project	€18,857	Ionian Islands	
	One-off	1 project	€18,857	North Aegean	
	One-off	1 project	€18,857	South Aegean	
	One-off	1 project	€18,857	Peloponnese	
	One-off	1 project	€18,857	Thessaly	
	One-off	1 project	€18,857	Central Macedonia	
	One-off	1 project	€18,857	Western Macedonia	
	One-off	1 project	€18,857	Crete	
	One-off	1 project	€18,857	Western Greece	
24. Implementing actions to restore habitat type 1410: removing aggregates, restoring vegetation, building fences	One-off	1 project	€34,286	South Aegean	CF, ERDF, LIFE
25. Implementing actions to protect the habitat of Chiroptera (habitat type 8310): installing new or replacing existing fences in important caves, implementing measures to limit light pollution	One-off	70 caves	€124,286	National level	CF, ERDF, LIFE

Expected results for targeted species and habitat types

- Improving the conservation status of habitat types 1210, 1410, 2110, 2120, 2230, 2250*, and 2260, which have a poor conservation status (improving structures and functions)

- Maintaining the favourable conservation status of habitat types of Community interest 1240, 2220, 8140, 8210, 8220, 8310, 8320

- Conserving/restoring the habitats of the species of Community interest *Asyneuma giganteum, *Bupleurum capillare, *Centaurea peucedanifolia, *Centaurea princeps, *Crepis crocifolia, *Iberis runemarkii*, *Linaria hellenica, Viola athois, *Macrovipera schweizeri*, and *Caretta*, which have a poor or bad conservation status, and of the bird species *Aegypius monachus, Alectoris graeca, Calonectris diomedea, Falco eleonorae, Hydrobates pelagicus, Larus audouinii, Neophron percnopterus, Phalacrocorax aristotelis desmarestii, Puffinus yelkouan*, which have been prioritised in the PAF

- Conserving/restoring the habitats of the bird species of Community interest *Clanga pomarina, Gyps fulvus*, as well as of other species found in rocky habitats, dunes and sparsely vegetated habitats

- Conserving/restoring the habitats of the species of Community interest *Dactylorhiza kalopissii* subsp. *kalopissii* (within and beyond the Natura 2000 network) and *Vipera ursinii*, which have a poor or bad conservation status

- Spatial planning for activities

- Combatting and limiting the distribution of invasive alien species in habitat types 2110, 2120, 2230, as well as in the habitats of the species **Iberis runemarkii*, **Centaurea peucedanifolia*, *Viola athois*, and **Macrovipera schweizeri*

- Decreasing the effects of tourism activity on species (**Caretta caretta*, **Linaria hellenica*) and on dune habitat types 1210, 2110, 2120, and 8310

- Mitigating the negative effects of climate change on the breeding habitat of **Caretta caretta*

- Protecting the nesting habitats of the sea birds *Larus audouinii, Phalacrocorax aristotelis desmarestii, Calonectris diomedea, Puffinus yelkouan, Hydrobates pelagicus*, and of Eleonora's falcon (*Falco eleonorae*) from competing species

- Limiting the fragmentation of ecosystems by implementing actions to construct/restore ecological corridors and restrict access with permanent or special barriers

- Reinforcing livestock breeding as a necessary management practice for the improvement of the raptors' foraging habitat

Expected results: other benefits

- Improving the resilience of rocky habitats, dunes and sparsely vegetated land to the effects of climate change

- Appropriately managing livestock farming and other human activities to reduce their impact on habitat types and species of Community interest

- Promoting ecotourism activities and creating new jobs within the Natura 2000 network

- Communicating with and raising awareness among the general population and stakeholders on the need to protect rocky habitats, dunes and sparsely vegetated land, and the value of the relevant habitat types and species

- Improving the services provided to tourists by protecting coastal dunes, especially in areas with high tourist traffic

- Decreasing the effects of visits to caves that are open to the public, and enhancing their presentation with a focus on protecting bats and the fauna inhabiting them

E.2.8. Fresh water habitats (rivers and lakes)

Current status of habitats and species, conservation measures taken until now and their impact so far, remaining pressures and threats

Habitat types according to Annex I to Directive 92/43/EEC

Nine (9) habitat types associated with the "Fresh water habitats (rivers and lakes)" ecosystem category have been recorded in Greece:

No	Code	Name	Conservation status 2013-2018
1	3130	Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*	U1(=)
2	3140	Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.	U1(=)
3	3150	Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation	FV(=)
4	3170*	Mediterranean temporary ponds	FV(=)
5	3240	Alpine rivers and their ligneous vegetation with *Salix elaeagnos*	FV(=)
6	3250	Constantly flowing Mediterranean rivers with *Glaucium flavum*	FV(=)
7	3260	Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation	FV(=)
8	3280	Constantly flowing Mediterranean rivers with *Paspalo-Agrostidion* species and hanging curtains of *Salix* and *Populus alba*	FV(=)
9	3290	Intermittently flowing Mediterranean rivers of the *Paspalo-Agrostidion*	U1(=)

Of the habitats listed above and as per the last report according to Article 17 of the Directive for the period 2013-2018, 3 have a poor conservation status (3130, 3140, and 3290 – U1) and 6 have a favourable conservation status (3150, 3240, 3250, 3260, 3280, and 3170* – FV).

Species according to Annexes II, IV, and V of Directive 92/43/EEC

Ninety-three (93) species of Community interest associated with the "Fresh water habitats (rivers and lakes)" ecosystem category have been recorded in Greece:

No	Species	Conservation status 2013-2018
Amphibian species		
1	*Hyla arborea*	FV(=)
2	*Pelophylax bedriagae*	FV(x)
3	*Pelophylax cerigensis*	U1(x)
4	*Pelophylax cretensis*	U1(x)
5	*Rana graeca*	FV(=)
6	*Pelophylax kurtmuelleri*	FV(=)
7	*Pelophylax ridibundus*	FV(x)
Invertebrate species		
1	*Astacus astacus*	U1(-)
2	**Austropotamobius torrentium*	U1(-)
3	*Coenagrion ornatum*	U1(-)
4	*Cordulegaster heros*	U1(-)
5	*Hirudo medicinalis*	XX
6	*Lindenia tetraphylla*	U1(-)
7	*Ophiogomphus cecilia*	U1(-)
8	*Stylurus flavipes*	U1(-)
9	*Unio crassus*	U1(-)
10	*Unio elongatulus*	U1(-)
Reptile species		
1	*Emys orbicularis*	U1(-)
2	*Mauremys rivulata*	U1(-)
3	*Natrix tessellata*	FV(=)
Mammal species		
1	*Lutra lutra*	FV(=)
2	*Miniopterus schreibersii*	U1(x)
3	*Myotis capaccinii*	U1(x)
4	*Myotis daubentonii*	XX
5	*Nyctalus noctula*	U1(x)
6	*Pipistrellus kuhlii*	FV(=)
7	*Rhinolophus hipposideros*	FV(x)
8	*Rhinolophus mehelyi*	XX

No	Species	Conservation status 2013-2018
Plant species		
1	*Lindernia procumbens*	XX
2	*Marsilea quadrifolia*	U1(x)
Fish species		
1	*Acipenser stellatus*	U2(x)
2	**Acipenser sturio*	U2(x)
3	*Alburnus vistonicus*	U2(-)
4	*Alburnus volviticus*	U1(-)
5	*Alosa fallax*	U2(-)
6	*Alosa macedonica*	FV(=)
7	*Alosa vistonica*	U2(-)
8	*Aphanius almiriensis*	U2(-)
9	*Aphanius fasciatus*	U1(=)
10	*Aspius aspius*	XX
11	*Barbus albanicus*	FV(x)
12	*Barbus cyclolepis*	FV(=)
13	*Barbus balcanicus*	FV(=)
14	*Barbus euboicus*	U2(-)
15	*Barbus macedonicus*	U1(x)
16	*Barbus peloponnesius*	FV(x)
17	*Barbus pergamonensis*	U2(x)
18	*Barbus prespensis*	U1(x)
19	*Barbus sperchiensis*	FV(=)
20	*Barbus strumicae*	FV(=)
21	*Cobitis arachthosensis*	U1(x)
22	*Cobitis hellenica*	U1(+)
23	*Cobitis meridionalis*	U1(x)
24	*Cobitis ohridana*	U2(x)
25	*Cobitis puncticulata*	U2(-)
26	*Cobitis punctilineata*	FV(=)
27	*Cobitis stephanidisi*	U2(x)
28	*Cobitis taenia* Complex	U1(x)

No	Species	Conservation status 2013-2018
Fish species (continued)		
29	*Cobitis trichonica*	U1(x)
30	*Cobitis vardarensis*	FV(=)
31	*Economidichthys pygmaeus*	FV(=)
32	*Economidichthys trichonis*	FV(=)
33	*Eudontomyzon graecus*	XX
34	*Eudontomyzon hellenicus*	U2(x)
35	*Knipowitschia goerneri*	U2(-)
36	*Knipowitschia milleri*	U2(x)
37	**Ladigesocypris ghigii*	U1(=)
38	*Luciobarbus graecus*	U1(=)
39	*Pelasgus epiroticus*	U2(-)
40	*Pelasgus laconicus*	U1(x)
41	*Pelasgus marathonicus*	U1(-)
42	*Pelasgus prespensis*	U1(-)
43	*Pelasgus stymphalicus*	U1(=)
44	*Pelasgus thesproticus*	XX
45	*Petromyzon marinus*	XX
46	*Rhodeus amarus*	FV(=)
47	*Rhodeus meridionalis*	FV(x)
48	*Romanogobio elimeius*	U1(-)
49	*Rutilus panosi*	FV(=)
50	*Rutilus prespensis*	U1(=)
51	*Rutilus ylikiensis*	FV(=)
52	*Sabanejewia balcanica*	U1(-)
53	*Salmo farioides*	U2(-)
54	*Salmo louroensis*	U2(-)
55	*Salmo macedonicus*	U2(-)
56	*Salmo pelagonicus*	U2(=)
57	*Salmo peristericus*	U1(-)
58	*Scardinius graecus*	FV(=)
59	*Silurus aristotelis*	U1(-)
60	*Squalius keadicus*	U1(-)
61	*Telestes beoticus*	U2(x)
62	*Telestes pleurobipunctatus*	FV(x)
63	*Tropidophoxinellus hellenicus*	FV(x)
64	*Tropidophoxinellus spartiaticus*	U1(=)
65	**Valencia letourneuxi*	U2(-)

Of the species mentioned above and as per the last report according to Article 17 of the Directive for the period 2013-2018, 2 amphibians have a poor conservation status (U1) and 5 have a favourable conservation status (FV), 9 invertebrates have a poor conservation status (UI) and 1 has a favourable conservation status, 2 reptiles have a poor conservation status (U1) and 1 has a favourable conservation status (FV), 1 plant has a poor conservation status (U1) and 1 has an unknown conservation status, 26 fish species have a poor conservation status (U1), 20 have a bad conservation status, 4 have an unknown conservation status (XX), and 15 have a favourable conservation status; with regard to mammals, 3 have a poor conservation status (U1), 2 have an unknown conservation status (XX), and 3 have a favourable conservation status (FV).

Bird species under Article 12 of Directive 2009/147/EC

Twenty-two (22) bird species of Community interest have been selected as priority for measures to be implemented over the period 2021-2027; these are wintering (W) and/or breeding (B) species in ecosystems relevant to the "Fresh water habitats (rivers and lakes)" category:

Of the species mentioned above and as per the last report according to Article 12 of the Directive for the period 2013-2018, 7 have a stable short-term population trend, 6 have a decreasing short-term population trend, and 9 have an increasing short-term population trend.

Conservation measures implemented for the habitat types and species of Community interest mentioned above, including birds

In 2012, a Presidential Decree was adopted (229/19.6.2012), titled "*Approval of a list of small island wetlands, and provision of terms and conditions for the protection and conservation of small coastal wetlands included therein*", by which specific protection and conservation measures were specified for island wetlands.

In habitat types 3140 and 3150, actions have been implemented to restore/improve hydrological conditions, reduce inflows, and reduce aquatic pollution. Additionally, with regard to temporary ponds, measures have been taken to manage the access of people and animals, to the end of reducing disturbance and grazing, planting has been carried out to restore the structure/function, the area has been expanded, and waste has been removed.

With regard to fish species, conservation actions have been implemented for *Ladigesocypris ghigii*, including creating a fish refuge and establishing reserves, as well as informing the local population. In the context of LIFE-IP 4 Natura, the action plan for *Ladigesocypris ghigii* is being updated and will be implemented in the near future. With regard to **Valencia letournexi*, conservation actions have been focusing on increasing a subpopulation of the species by introducing individuals from another subpopulation. With regard to cave dwelling Chiroptera, actions are implemented to communicate and raise awareness, encourage citizen science, and reinforce their protection by preparing action plans.

With regard to the species *Anser erythropus*, in the context of LIFE projects and other programmes, actions have been implemented to mitigate the effects of hunting and poaching, analyse the species' diet and restore the feeding habitat, monitor the wintering population, and organising training and awareness workshops for hunters and staff of Protected Area Management Bodies and other agencies, as well as an environmental education programme. The actions mentioned above are also beneficial to all the species included in this category. With regard to the species *Oxyura leucocephala*, past actions implemented in the context of a LIFE project included monitoring and information to reduce trapping incidents with fishing equipment.

With regard to the species *Ardea purpurea, Ardeola ralloides, Aythya nyroca, Ixobrychus minutus, Nycticorax nycticorax, Ardea alba*, actions are implemented to increase or conserve breeding populations, increase available foraging habitats, increase available food, and adjust habitats to climate change.

Threats and pressures to habitat types of Community interest

As per the last report according to Article 17 of the Directive, the main remaining threats and pressures to the habitat types, and therefore the species, that are associated with the "Fresh water habitats (rivers and lakes)" category and will be managed through the PAF measures are:

- drought and decreased precipitation due to climate change,
- intensive grazing or overgrazing by animals,
- aggregate deposits caused by mining,
- mixed soil pollution derived from water sources and solid waste,
- disposal of liquid waste and sewage, mixed sources of pollution in surface water and groundwater,
- fragmentation by roads,
- invasive alien species of Community interest,
- land use change,
- natural succession, which results to changes in species composition.

Measures needed to maintain or restore favourable conservation status

Conservation/protection actions within the Natura 2000 Network

- Implementing actions to conserve aquatic habitats in natural lakes: managing water level, maintaining barrier gates, cutting down vegetation, removing debris

- Implementing actions to conserve the habitats of *Alburnus vistonicus* and *Alosa vistonica*: carrying out works to limit the seawater ingress, constructing a barrier gate to prevent the seawater ingress, training stakeholders on water management, etc.

- Implementing actions to manage reed beds: reviving, decreasing pollution burden, creating breeding sites for fish species of Community interest

Restoration actions within the Natura 2000 Network

- Implementing actions to restore habitat types 3130, 3140, 3290: restoring hydrological conditions, controlling grazing, promoting management to halt succession, implementing actions to combat alien species

- Implementing actions to restore the habitats of the fish species of Community interest *Alburnus vistonicus, Alosa vistonica, Aphanius almiriensis, Cobitis stephanidisi, Cobitis puncticulata, Alosa fallax*, and *Barbus strumicae* (limiting and preventing the seawater ingress, training stakeholders on water management, limiting the pollution of surface water, regulating river development, maintaining the ecological flow and ecological continuity of streams and rivers, regulating water extraction for irrigation/water supply, protecting riparian vegetation, reducing the populations of alien species, carrying out small-scale excavation works, constructing bypass channels, building islets, etc.)

- Restoring and improving the habitat of *Anser erythropus*, waders and waterbirds, and other fauna species: reflooding areas and old riverbeds, creating wet meadows, temporary ponds (habitat type 3170*), and riparian forests, restoring old beds, building artificial islands, implementing technical interventions to restore lake dams to working order

- Implementing measures to restore disturbed natural lake habitats: developing a study to manage a reed bed, applying measures to improve eutrophic conditions (sediment inertisation, hypolimnetic oxygenation)

- Combatting alien mammal species found in freshwater habitats.

Restoration actions beyond the Natura 2000 Network

- Conserving and restoring ecological corridors in habitat type 3170* to limit fragmentation in the movement of species of Community interest

Prioritization of measures to be implemented during the next MFF period

All the measures listed in the following tables are prioritised by Greece for the period 2021-2027.

List of prioritized measures to be carried out, and estimated costs for these measures

E.2.8

- within Natura 2000 sites designated for the targeted habitats and species

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
1. Implementing actions to restore habitat type 3130: restoring hydrological conditions, controlling grazing, etc.	One-off	1 Natura 2000 site	€21,429	Central Macedonia	CF, ERDF, LIFE
2. Implementing actions to restore habitat type 3140: promoting management to halt succession, etc.	One-off	1 Natura 2000 site	€21,429	South Aegean	CF, ERDF, LIFE
3. Implementing actions to restore habitat type 3290: combatting alien species, restoring hydrological conditions, etc.	One-off	1 Natura 2000 site	€42,857	Western Macedonia	CF, ERDF, LIFE
	One-off	2 Natura 2000 sites	€85,714	Epirus	
	One-off	3 Natura 2000 sites	€128,571	South Aegean	
	One-off	2 Natura 2000 sites	€85,714	Crete	
4. Implementing actions to restore and conserve the habitats of *Alburnus vistonicus* and *Alosa vistonica*: carrying out works to limit the seawater ingress, constructing a barrier gate to prevent the seawater ingress, training stakeholders on water management, etc.	One-off	1 Natura 2000 site	€428,571	Eastern Macedonia and Thrace	CF, ERDF, LIFE
5. Implementing actions to improve the habitat of *Aphanius almiriensis*: limiting the pollution of surface water, regulating river	Recurrent	1 project	€17,143	Peloponnese	CF, ERDF, LIFE

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
development, maintaining the ecological flow and ecological continuity of streams and rivers, regulating water extraction for irrigation/water supply, protecting riparian vegetation					
6. Improving the habitats of the species *Cobitis stephanidisi* by reducing alien species' populations	Recurrent	1 project	€34,286	Thessaly	CF, ERDF, LIFE
7. Implementing actions to improve the habitat of *Cobitis puncticulata:* studying and formulating habitats, carrying out small-scale excavation works	One-off	1 project	€21,257	Eastern Macedonia and Thrace	CF, ERDF, LIFE
8. Improving the habitat of *Alosa fallax* and *Barbus strumicae*: constructing a bypass channel	One-off	1 project	€257,143	Eastern Macedonia and Thrace	CF, ERDF, LIFE
9. Restoring habitats of fish species (*Barbus strumicae, Barbus cyclolepis, Cobitis taenia, Rhodeus amarus, Salmo macedonicus*) in aquatic systems: constructing bypass channels and fish passageways, decreasing flow or creating additional flow, removing or reintroducing sediment, building islets, etc.	One-off	2 projects	€64,286	Eastern Macedonia and Thrace	CF, ERDF, LIFE
	One-off	1 project	€51,429	Central Macedonia	
	One-off	1 project	€51,429	Western Macedonia	
	One-off	1 project	€51,429	Peloponnese	
	One-off	1 project	€51,429	Epirus	
	One-off	1 project	€51,429	Western Greece	
	One-off	1 project	€51,429	Central Greece	
10. Restoring and improving the habitat of *Anser erythropus* and other fauna species: reflooding areas and old riverbeds, creating wet meadows, temporary ponds (habitat type 3170*), and riparian forests	One-off	2300 ha	€450,631	Eastern Macedonia and Thrace	CF, ERDF, LIFE
11. Restoring the habitats of *Anser erythropus* and other bird species in aquatic habitats: developing studies and carrying out projects to open or block drainage channels, installing and operating barrier gates, pumps, etc.	One-off	200 ha	€257,143	Eastern Macedonia and Thrace	CF, ERDF, LIFE
12. Implementing actions to restore the habitats of waders (*Alcedo atthis, Anser erythropus, Ardea purpurea, Ardeola ralloides, Aythya nyroca, Botaurus stellaris, Branta ruficollis, Chlidonias niger, Ciconia ciconia, Ciconia nigra, Cygnus cygnus, Egretta garzetta, Gallinago media, Gelochelidon nilotica, Glareola pratincola, Grus grus, Himantopus himantopus, Ixobrychus minutus, Limosa lapponica, Microcarbo pygmaeus, Nycticorax nycticorax, Pelecanus crispus, Pelecanus onocrotalus, Platalea leucorodia, Plegadis falcinellus, Pluvialis apricaria, Podiceps auritus, Porzana porzana, Recurvirostra avosetta, Sterna hirundo, Tadorna ferruginea, Thalasseus sandvicensis, Tringa glareola*) and amphibians/reptiles (*Emys orbicularis, Mauremys rivulata, Natrix tessellate, Triturus karelinii, Bombina variegata, Rana dalmatina, Rana graeca, Pelobates syriacus*): restoring old beds, building artificial islands	One-off	1 Natura 2000 site	€137,143	Central Macedonia	CF, ERDF, LIFE
13. Implementing actions to restore and conserve the lake habitats of waders and waterbirds (*Ardea purpurea, Ardeola ralloides, Aythya nyroca, Botaurus stellaris, Circus aeruginosus, Circus cyaneus, Microcarbo pygmaeus, Nycticorax nycticorax*): developing studies, licensing, implementing technical interventions to restore lake dams to working order	One-off	120 ha	€171,429	Central Macedonia	CF, ERDF, LIFE
14. Implementing measures to restore disturbed natural lake habitats and therefore improve the conservation status of fish species (*Barbus albanicus, Cobitis hellenica, Pelasgus stymphalicus, Pelasgus epiroticus, Telestes pleurobipunctatus*): developing a study to manage a reed bed, applying measures to improve eutrophic conditions (sediment inertisation, hypolimnetic oxygenation)	Recurrent	1 Natura 2000 site	€77,143	Epirus	CF, ERDF, LIFE
15. Managing reed beds to improve the conservation status of bird species (*Ardea cinerea, Ardea purpurea, Ardeola ralloides, Egretta garzetta, Microcarbo pygmaeus, Nycticorax nycticorax, Pelecanus crispus*) and fish species (*Barbus strumicae, Rhodeus amarus, Alburnus volviticus*): reviving, decreasing pollution burden, creating breeding sites for fish species of Community interest	Recurrent	44 ha	€8,571	Central Macedonia	CF, ERDF, LIFE
16. Developing a study to monitor and manage the impacts and populations of alien mammal species: communicating with and raising awareness among the general public, using novel tracking technologies through citizen science, limiting their expansion by capturing and sterilising, trapping and putting down, etc.	One-off	1 project	€11,143	Epirus	CF, ERDF, LIFE, INTERREG
	One-off	1 project	€11,143	Eastern Macedonia and Thrace	
	One-off	1 project	€11,143	Western Macedonia	
	One-off	1 project	€11,143	Central Macedonia	

- additional measures beyond Natura 2000 (wider green infrastructure measures)

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
17. Preserving and restoring ecological corridors in habitat type 3170* to improve the cohesion of the Natura 2000 network and therefore limit fragmentation in the movement of species of Community interest, preserving biodiversity, and promoting the adjustment to climate change	One-off	1 project	€29,143	National level	CF, ERDF, LIFE

Expected results for targeted species and habitat types

- Improving the conservation status of habitat types 3130, 3140, and 3290, which have a poor conservation status (improving structures and functions)

- Conserving/restoring the habitats of species of Community interest that have a poor or bad conservation status: *Alburnus vistonicus, Alburnus volviticus, Alosa fallax, Alosa vistonica, Aphanius almiriensis, Cobitis hellenica*, *Cobitis puncticulata, Cobitis stephanidisi, Pelasgus epiroticus*, *Pelasgus stymphalicus*, *Salmo macedonicus, Emys orbicularis, Mauremys rivulata*

- Improving the habitats of the species of Community interest *Bombina variegata, Pelobates syriacus, Rana dalmatina, Rana graeca, Triturus karelinii, Natrix tessellata, Barbus albanicus, Barbus cyclolepis, Barbus strumicae, Cobitis taenia, Rhodeus amarus, Telestes pleurobipunctatus*, and of the bird species *Alcedo atthis, Anser erythropus, Ardea purpurea, Ardeola ralloides, Aythya nyroca, Botaurus stellaris, Branta ruficollis, Chlidonias niger, Ciconia ciconia, Circus cyaneus, Gelochelidon nilotica, Glareola pratincola, Grus grus, Ixobrychus minutus, Limosa lapponica, Nycticorax nycticorax, Pelecanus crispus, Plegadis falcinellus, Podiceps auritus, Podiceps nigricollis, Recurvirostra avosetta, Tadorna ferruginea*, which have been prioritised in the PAF

- Conserving/restoring the habitats of the bird species of Community interest *Ardea cinerea, Ciconia nigra, Circus aeruginosus, Cygnus cygnus, Egretta garzetta, Gallinago media, Himantopus himantopus, Microcarbo pygmaeus, Pelecanus onocrotalus, Platalea leucorodia, Pluvialis apricaria, Porzana porzana, Sterna hirundo, Thalasseus sandvicensis, Tringa glareola*

- Reducing aquatic pollution derived from human activities in habitat type 6420, in reed beds, and in the habitat of the species *Aphanius almiriensis*

- Combatting and limiting the expansion of invasive alien species: in habitat type 3290, in the habitat of the species *Cobitis stephanidisi*, and for alien mammal species found in freshwater habitats

- Improving the cohesion of the Natura 2000 network by maintaining/restoring ecological corridors in habitat type 3170*.

Expected results: other benefits

- Improving the resilience of freshwater habitats (rivers and lakes) to the effects of climate change

- Appropriately managing human activities to reduce their impact on habitat types and species of Community interest

- Promoting ecotourism and other compatible activities (sports, recreation, etc.), and creating new jobs within the Natura 2000 network

- Communicating with and raising awareness among the general population and stakeholders on the need to protect freshwater habitats (rivers and lakes), and the value of the relevant habitat types

- Improving water quality

E.2.9. Other (caves, etc.)

Current status of habitats and species, conservation measures taken until now and their impact so far, remaining pressures and threats

All habitat types, species of Community interest (including birds), and priority measures of this category have been included under section E.2.7 "Rocky habitats, dunes and sparsely vegetated land"

Measures needed to maintain or restore favourable conservation status

Prioritization of measures to be implemented during the next MFF period

List of prioritized measures to be carried out, and estimated costs for these measures

- within Natura 2000 sites designated for the targeted habitats and species

Name and short description of the measures	Type of measure*	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Possible EU co-funding source
Measure 1				
Measure 2				
etc.				

- additional measures beyond Natura 2000 (wider green infrastructure measures)

Name and short description of the measures	Type of measure*	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Possible EU co-funding source
Measure 1				
Measure 2				
etc.				

*please mention whether this is a one-off or recurring measure

Expected results for targeted species and habitat types

Expected results: other benefits

E.2.10. References for site-related maintenance and restoration measures within and beyond Natura 2000

Project "*Monitoring and assessment of the conservation status of species and habitat types of Community interest in Greece"* for the period 2006-2012, NSRF 2007-2013, MEEN

Report according to Article 17 of the Habitats Directive (Directive 92/43/EEC) for the period 2013-2018, project *"Processing, developing and making available to the public the MEEN data on protected species and habitats, and meeting obligations according to EU Directives"*, Green Fund, MEEN

Report according to Article 12 of the Birds Directive (Directive 2009/147/EC) for the period 2013-2018, project *"Processing, developing and making available to the public the MEEN data on protected species and habitats, and meeting obligations according to EU Directives"*, Green Fund, MEEN

Online database for EU LIFE projects http://ec.europa.eu/environment/life/project/Projects/index.cfm

Online database for HCMR research projects 2007-2012 https://imbriw.hcmr.gr/en/category/projects/research-projects-2007-2012/

Linkages of species and habitat types to MAES ecosystems https://www.eea.europa.eu/data-and-maps/data/linkages-of-species-and-habitat#tab-european-data

LIFE-IP 4 Natura Project – Integrated actions for the conservation and management of the Natura 2000 network sites, species, habitats, and ecosystems in Greece, https://edozoume.gr/

Green Fund: Innovative actions with the citizens http://www.prasinotameio.gr/index.php/el/programmata-kai-dikaiouxoi/64-programmata-kai-dikaiouxoi/programmata1/fysiko-perivallon-kainotomes-draseis/kainotomes-draseis-me-tous-polites

Green Fund: Approved Funding Programmes 2014 with Protected Areas Management Bodies as beneficiaries http://www.prasinotameio.gr/index.php/el/programmata-kai-dikaiouxoi

Joint Ministerial Decision 43236/1053/17.10.2017 (B 3760) National Action Plan for *Neophron percnopterus* in Greece.

Joint Ministerial Decision 43235/1053/17.10.2017 (B 3762) National Action Plan for *Anser erythropus* in Greece.

Joint Ministerial Decision 43231/1054/17.10.2017 (B 3761) Regional Action Plan for *Falco naumanni* in the Thessalian plain.

E.3. Additional species-specific measures not pertaining to specific ecosystems or habitats

E.3.1. Species-specific measures and programmes not covered elsewhere

Current status of the species

In Greece, the species of Community interest, including birds, for which it is required to implement measures regardless of the ecosystems they are linked with, are the following:

No	Species	Conservation status 2013-2018
Amphibian species		
1	*Bufotes viridis*	FV(=)
2	*Pelophylax cerigensis*	U1(x)
3	*Pelobates syriacus*	FV(x)
Invertebrate species		
1	*Astacus astacus*	U1(-)
2	**Austropotamobius torrentium*	U1(-)
3	*Parnassius apollo*	U1(-)
4	*Pinna nobilis*	U2(-)
5	*Unio crassus*	U1(-)
6	*Unio elongatulus*	U1(-)
7	*Vertigo angustior*	U1(-)
8	*Vertigo moulinsiana*	U1(-)
Reptile species		
1	**Caretta caretta*	U2(-)
2	**Chelonia mydas*	U2(x)
3	*Dolichophis jugularis*	FV(=)
4	*Hierophis gemonensis*	FV(=)
5	*Hierophis viridiflavus*	FV(=)
6	*Coronella austriaca*	FV(=)
7	*Dermochelys coriacea*	U2(x)
8	*Elaphe quatuorlineata*	FV(=)
9	*Elaphe sauromates*	FV(x)
10	*Eryx jaculus*	FV(x)
11	**Macrovipera schweizeri*	U1(-)
12	*Platyceps najadum*	FV(=)
13	*Testudo graeca*	U1(-)
14	*Testudo hermanni*	U1(-)
15	*Testudo marginata*	U1(-)
16	*Vipera ammodytes*	FV(=)
17	*Vipera ursinii*	U1(=)
18	*Vipera xanthina*	FV(x)
19	*Zamenis longissimus*	FV(=)
20	*Zamenis situla*	FV(=)
Fish species		
1	*Alosa fallax*	U2(-)
2	*Salmo farioides*	U1(-)
3	*Salmo louroensis*	U2(-)
4	*Salmo macedonicus*	U2(-)
5	*Salmo pelagonicus*	U2(-)
6	*Salmo peristericus*	U2(=)
7	**Valencia letourneuxi*	U2(-)

No	Species	Conservation status 2013-2018
Mammal species		
1	*Balaenoptera acutorostrata*	
2	*Balaenoptera physalus*	XX
3	*Canis aureus*	U1(+)
4	**Canis lupus*	U1(+)
5	*Delphinus delphis*	U2(-)
6	*Dryomys nitedula*	FV(=)
7	*Felis silvestris*	XX
8	*Grampus griseus*	U1(x)
9	*Lutra lutra*	FV(=)
10	*Lynx lynx*	XX
11	*Martes martes*	XX
12	*Megaptera novaeangliae*	
13	**Monachus monachus*	U1(+)
14	*Muscardinus avellanarius*	FV(=)
15	*Mustela putorius*	XX
16	*Myomimus roachi*	XX
17	*Phocoena phocoena*	U2(-)
18	*Physeter macrocephalus*	U2(-)
19	*Pseudorca crassidens*	
20	*Rupicapra rupicapra balcanica*	U2(+)
21	*Sciurus anomalus*	XX
22	*Spermophilus citellus*	U1(-)
23	*Stenella coeruleoalba*	XX
24	*Steno bredanensis*	
25	*Tursiops truncatus*	U1(x)
26	**Ursus arctos*	U1(+)
27	*Vormela peregusna*	XX
28	*Ziphius cavirostris*	U2(-)

No	Species	Short-term population trend 2007-2018
Birds		
1	*Accipiter brevipes* (B)	=
2	*Aegypius monachus* (B)	+
3	*Anas acuta* (W)	=
4	*Anser anser* (W)	-
5	*Anser erythropus* (W)	+
6	*Aquila chrysaetos* (B)	-
7	*Aquila fasciata* (B)	=
8	*Aquila heliaca* (B)	=
9	*Ardea alba* (B)	+
10	*Ardea cinerea* (B)	+
11	*Ardea purpurea* (B)	-
12	*Ardeola ralloides* (B)	+
13	*Aythya ferina* (B)	=
14	*Aythya fuligula* (W)	x
15	*Aythya nyroca* (B)	=
16	*Branta ruficollis* (W)	x
17	*Bubulcus ibis* (B)	x
18	*Buteo buteo* (B)	=
19	*Calonectris diomedea* (B)	=
20	*Ciconia ciconia* (B)	-
21	*Ciconia nigra* (B)	x
22	*Circus cyaneus* (W)	x
23	*Clanga clanga* (W)	=
24	*Coracias garrulus* (B)	+
25	*Cygnus columbianus bewickii* (W)	+
26	*Cygnus cygnus* (W)	+
27	*Cygnus olor* (B)	+
28	*Egretta garzetta* (B)	+
29	*Falco biarmicus* (B)	+
30	*Falco eleonorae* (B)	+
31	*Falco naumanni* (B)	+
32	*Gelochelidon nilotica* (B)	=
33	*Gypaetus barbatus* (B)	+
34	*Gyps fulvus* (B)	+
35	*Haematopus ostralegus* (B)	+
36	*Himantopus himantopus* (B)	=
37	*Hydrobates pelagicus* (B)	x
38	*Hydroprogne caspia* (B)	+
39	*Ixobrychus minutus* (B)	-
40	*Larus audouinii* (B)	-
41	*Larus genei* (B)	+
42	*Larus melanocephalus* (B)	-
43	*Mergus merganser* (B)	=
44	*Microcarbo pygmaeus* (B)	+
45	*Neophron percnopterus* (B)	-
46	*Numenius arquata arquata* (W)	x
47	*Nycticorax nycticorax* (B)	+
48	*Oxyura leucocephala* (W)	-
49	*Pandion haliaetus* (P)	
50	*Pelecanus crispus* (B)	+
51	*Phalacrocorax aristotelis desmarestii* (B)	=
52	*Phalacrocorax carbo sinensis* (B)	+
53	*Phoenicopterus roseus* (W)	+
54	*Platalea leucorodia* (B)	=
55	*Plegadis falcinellus* (B)	=
56	*Puffinus yelkouan* (B)	=
57	*Recurvirostra avosetta* (B)	+
58	*Sitta krueperi* (B)	+
59	*Spatula querquedula* (B)	=
60	*Sterna hirundo* (B)	=
61	*Sternula albifrons* (B)	=
62	*Tadorna ferruginea* (B)	+
63	*Thalasseus sandvicensis* (B)	=

No	Species	Conservation status 2013-2018
Plant species		
1	**Androcymbium rechingeri*	U1(-)
2	**Anthemis glaberrima*	FV(=)
3	*Artemisia eriantha*	U2(x)
4	*Asyneuma giganteum*	U1(-)
5	*Botrychium simplex*	XX
6	**Bupleurum capillare*	U1(+)
7	**Bupleurum kakiskalae*	U1(=)
8	*Buxbaumia viridis*	U2(x)
9	**Centaurea attica* ssp. *megarensis*	FV(=)
10	**Centaurea heldreichii*	FV(=)
11	*Centaurea immanuelis-loewii*	XX
12	**Centaurea kalambakensis*	U1(x)
13	**Centaurea lactiflora*	FV(=)
14	*Centaurea lancifolia*	U1(=)
15	**Centaurea niederi*	FV(=)
16	**Centaurea peucedanifolia*	U1(=)
17	**Centaurea princeps*	U1(=)
18	**Cephalanthera cucullata*	U1(x)
19	**Clinopodium taygeteum*	FV(=)
20	*Colchicum cousturieri*	XX
21	**Consolida samia*	XX
22	**Convolvulus argyrothamnus*	U2(x)
23	**Crepis crocifolia*	U1(-)
24	*Crepis pusilla*	U1(x)
25	*Dactylorhiza kalopissii* subsp. *kalopissii*	U2(-)
26	*Fritillaria conica*	U1(x)
27	*Fritillaria drenovskii*	FV(x)
28	*Fritillaria gussichiae*	U1(x)
29	*Fritillaria obliqua*	U2(x)
30	*Fritillaria rhodocanakis*	FV(=)
31	*Galanthus nivalis*	U1(x)
32	*Gentiana lutea*	U1(x)
33	*Gladiolus palustris*	XX
34	**Globularia stygia*	FV(+)
35	*Helichrysum sibthorpii*	FV(=)
36	*Himantoglossum jankae*	FV(=)
37	**Hypericum aciferum*	FV(=)
38	**Iberis runemarkii*	U2(x)
39	*Jankaea heldreichii*	FV(=)
40	**Linaria hellenica*	U1(-)
41	*Lindernia procumbens*	XX
42	*Marsilea quadrifolia*	U1(x)
43	*Nepeta argolica* ssp. *dirphya*	FV(=)
44	**Nepeta sphaciotica*	U1(=)
45	*Ophrys argolica* subsp. *argolica*	FV(=)
46	*Origanum dictamnus*	FV(x)
47	*Paeonia clusii* ssp. *rhodia*	U1(x)
48	*Paeonia parnassica*	FV(x)
49	*Phoenix theophrasti*	U1(=)
50	*Polygonum praelongum*	U1(x)
51	*Ramonda serbica*	XX
52	*Rhododendron luteum*	FV(=)
53	*Ruscus aculeatus*	FV(=)
54	**Silene holzmanii*	U1(x)
55	**Silene orphanidis*	FV(=)
56	*Solenanthus albanicus*	XX
57	**Symphytum cycladense*	FV(=)
58	*Tozzia carpathica*	XX
59	**Veronica oetaea*	FV(=)
60	*Viola athois*	U1(=)
61	*Viola delphinantha*	U1(x)
62	*Woodwardia radicans*	U2(x)
63	*Zelkova abelicea*	U1(x)

Conservation measures implemented for the species of Community interest mentioned above, including birds

**Monachus monachus* is a priority species, and Greece is home to the largest population in Europe and the Mediterranean. That is why the Greek government at central, regional, and local level, the Protected Area Management Bodies, the research foundations and the environmental NGOs implement a number of actions to monitor, study, protect, conserve, inform, and promote environmental education at both national and local level. The most important actions implemented over the past years are establishing new Natura sites, protecting them, mapping important areas, developing a Special Environmental Study (SES) for the Natura 2000 site of Gyaros island in the South Aegean (GR4220033 NISOS GYAROS KAI THALASSIA ZONI SCI-SAC) and passing legislation on the protection of the area ("*Provision of terms and conditions for the protection, conservation, and management of nature in the terrestrial and marine area of Gyaros island*" Government Gazette D 389 4-7-2019), implementing actions to rescue and rehabilitate seals (actions implemented by environmental organisations), developing a National Action Plan for **Monachus monachus* (in progress).

With regard to the cetaceans that have a stable presence in the Greek seas (*Balaenoptera physalus*, *Delphinus delphis*, *Grampus griseus, Phocoena phocoena, Physeter macrocephalus, Stenella coeruleoalba, Tursiops truncatus*, and *Ziphius cavirostris*), most actions implemented over the past years aimed to fill knowledge gaps and acquire basic data on the species' conservation status. It is acknowledged that there are still very large gaps, with very few sites and species having been studied in depth as required. Important actions implemented over the past years include establishing a scientific committee to support the operation of a network monitoring the strandings of marine species (Ministerial Decision 27327/1217/19.6.15), coordinated at national level by the MEEN, developing the National Action Plans for *Phocoena phocoena* and *Tursiops truncatus* (in progress), establishing new Natura 2000 sites, delimiting Important Marine Mammal Areas (IMMAs) (implemented by the IUCN Important Marine Mammal Areas team at Chania, Crete in 2016 with the aid of expert scientists), implementing actions to inform, raise awareness, and build stakeholder capacity regarding the need to conserve marine mammals.

With regard to the large carnivores (**Ursus arctos, *Canis lupus, Canis aureus*), but also other species of Community interest, including birds, actions are implemented to rescue, and rehabilitate wildlife species in the context of operation of wildlife rescue centres (ANIMA, Pelargos, Arcturos, Callisto, etc.) and actions by environmental organisations. It should also be noted that two of the large carnivores of priority Community interest found in Greece (*Ursus arctos, *Canis lupus*) show increased distribution in areas where they had been extinct in the past (populations of *Ursus arctos* can be found on Mounts Olympus, Oeta, and Pelion, while **Canis lupus* individuals have reappeared on Mount Parnitha and the Geraneia Mountains).

With regard to the sea turtles (**Caretta caretta, *Chelonia mydas, Dermochelys coriacea*), especially **Caretta caretta,* which is a priority species, many actions have been implemented to monitor, study, protect, conserve, inform, and promote environmental education at national and local level by Protected Area Management Bodies, research foundations, and environmental NGOs. The most important actions taken over the past years include implementing actions to conserve, protect, and provide information in areas that are important to sea turtles (Crete, Ionian Islands, Peloponnese, etc.), developing a Special Environmental Study (SES) for the Natura 2000 site at Kyparissia, and passing legislation on the protection of the area (Presidential Decree designating the Gulf of Kyparissia as a Nature Protection Area, Government Gazette 391/D/03.10.2018). Actions have also been implemented to rescue and rehabilitate sea turtles (by environmental organisations), and to draw up (currently ongoing process) a National Action Plan for **Caretta caretta*, which is implemented in the context of a LIFE project.

With regard to birds, the following actions have been implemented, which are not related to habitat: establishing new Natura 2000 sites (SPAs mainly in the marine part of the network), decreasing the mortality of scavengers and large raptors (operating detection teams for poisoned baits, building capacity to stakeholders, informing, drawing up local action plans for poisons) and improving their foraging conditions (operating feeding stations, cultivating abandoned fields, currently extending an invitation for spatial planning of feeding stations, maintaining clearings in forest ecosystems), insulating electricity pylons or undergrounding cables in a few areas, constructing artificial nests and islands for some species (e.g., *Falco naumanni, Falco elenorae, Pelecanus cripsus)*, decreasing the effects of plastics-derived marine pollution on sea birds by conducting underwater and coast cleaning, mapping habitats, building capacity to and informing stakeholders, and developing action plans.

The *ex-situ* conservation of plant species is an important tool for restoring and reinforcing plant populations. *Ex-situ* conservation and seed storage actions have been implemented for 15 species: **Androcymbium rechingeri,*

**Anthemis glaberrima, Asyneuma giganteum, *Bupleurum kakiskalae, *Cephalanthera cucullata, *Convolvulus argyrothamnus, Crepis pusilla, *Hypericum aciferum, *Nepeta sphaciotica, Origanum dictamnus, Phoenix theophrasti, *Veronica oetaea, Wagenitzia lancifolia, Zelkova abelicea*. However, some collections are old, have a small number of seeds, and do not include the entirety of genetic diversity from all species' subpopulations.

Recent studies have shown that *Pinna nobilis* populations have started to suffer mass mortality events also in the Greek seas. These studies are inconclusive as to the exact causes of the events, and the first data show that it is a combination of contaminants. This phenomenon is particularly critical, as it could result in the mass extinction of *Pinna nobilis* in the Mediterranean. With regard to **Valencia letournexi*, conservation actions focused on increasing a subpopulation of the species by introducing individuals from another subpopulation. With regard to **Macrovipera schweizeri*, passageways have been built, and stakeholders have been contacted to the end of reducing roadkill incidents.

For a total of 20 species and habitat types, action plans have been or are currently developed, which are scheduled for implementation in the near future with funding from the Green Fund, LIFE-IP 4 Natura, and the Operational Programme "Transport Infrastructure, Environment and Sustainable Development". More specifically, the action plans include 1 plant species (**Silene holzmanii*), 4 fish species (*Salmo farioides, Salmo louroensis, Salmo macedonicus, Salmo pelagonicus*, *Salmo peristericus*), 1 amphibian (*Perophylax cerigensis*), 5 mammals (*Rupicapra rupicapra balcanica, *Monachus monachus, Phocoena phocoena, Tursiops trunactus, *Ursus arctos*), 6 birds (*Aegypius monachus, Gypaetus barbatus, Gyps fulvus, Neophron percnopterus, Anser erythropus, Falco naumanni*), 1 invertebrate (*Parnassius apollo*), and 1 habitat type (2250*).

With regard to invasive species, in the context of implementing Regulation 1143/2014 "*on the prevention and management of the introduction and spread of invasive alien species*", Greece is to draft the national list of invasive species of national interest, to the end of proceeding with a risk assessment for the species, and with actions to limit their impact (the project is at the contracting stage). Over the past years, a small number of research projects was implemented, mainly to collect the existing knowledge on the species, distribution, effects of invasive alien species, and on ways to address this issue. Additionally, a LIFE project is being carried out to control and limit the expansion of minks in Greece.

Threats and pressures to species of Community interest

As per the last report according to Article 17 of Directive 92/43/EEC and Article 12 of Directive 2009/147/EC, these are the main threats and pressures to the species of Community interest targeted by the priority measures:

Birds

Falconidae

- Abandonment of management/use of agricultural and agroforestry systems
- Abstraction from groundwater, surface water, or mixed water
- Agricultural activities generating diffuse pollution to surface or ground waters
- Construction or modification in existing urban or recreational areas
- Conversion from other land uses to housing, settlement, or recreational areas
- Invasive alien species
- Sports, tourism, and recreational activities
- Use of plant protection chemicals in agriculture, and other soil management practices in agriculture

Laridae

- Abiotic natural processes (e.g., erosion, drying out)
- Abstraction from groundwater, surface water, or mixed water
- Illegal harvesting, collection and taking
- Intensive grazing or overgrazing by livestock
- Interspecific relationships (competition, predation, parasitism, pathogens)

● Modification of hydrological conditions for industrial or commercial development
● Physical alteration of water bodies
● Residential or recreational activities that generate noise, light, heat, etc.
● Sea-level and wave exposure changes due to climate change
● Sports, tourism, and recreational activities
● Use of plant protection chemicals in agriculture

Species occurring in meadow ecosystems

● Intensive grazing or overgrazing by animals
● Land use change
● Other soil management practices in agriculture
● Deposition and treatment of waste/garbage from household/recreational facilities
● Modification of hydrological conditions for residential or recreational development

Herons and Pelecaniformes

● Abandonment of management of pasture lands and of management/use of agricultural and agroforestry systems
● Abiotic natural processes (e.g., erosion, drought)
● Land use change
● Deposition and treatment of waste/garbage from household/recreational facilities
● Professional and recreational fisheries causing reduction of species/prey populations and disturbance of species
● Land, water, and air transport activities generating pollution to surface or ground waters
● Modification of coastal conditions for marine aquaculture
● Forestry activities
● Invasive alien species
● Modification of hydrological conditions for residential or recreational development
● Plant and animal diseases, pathogens, and pests
● Sports, tourism, and recreational activities
● Temperature changes (e.g. rise of temperature & extremes) due to climate change
● Special relationships between species (competition, predation, parasitism, pathogens)
● Construction or modification of commercial/industrial infrastructure in existing commercial/industrial areas

Sea birds

● Special relationships between species (competition, predation, parasitism, pathogens)
● Creation or development of sports, tourism and recreational infrastructure (outside the urban or recreational areas)
● Development and maintenance of beach areas for tourism and recreation, beach cleaning
● Bycatch and incidental killing
● Wind, wave, and tidal power, including relevant infrastructure
● Impacts from aquaculture
● Mining and extraction activities generating marine pollution
● Plants, contaminated or abandoned industrial sites generating pollution to surface or ground water
● Invasive alien species

Large raptors

● Abandonment of grassland management
● Abiotic natural processes
● Clean-cutting, removal of all trees

● Conversion from mixed farming and agroforestry systems to specialised (e.g. single crop) production
● Land use changes
● Deposition and treatment of waste/garbage from household/recreational facilities
● Energy production and transmission activities
● Intensive grazing or overgrazing by animals
● Mining activities that generate noise, light, etc.
● Illegal harvesting, collecting and taking
● Special relationships between species (competition, predation, parasitism, pathogens)
● Livestock farming
● Poisoning of animals
● Reduced fecundity/genetic depression, endogamy
● Transmission of electricity and communications (cables)
● Use of plant protection chemicals in agriculture
● Wind, wave, and tidal energy, including relevant infrastructure

<u>Waders</u>

● Abiotic natural processes
● Conversion from other land uses to commercial/industrial areas
● Deposition and treatment of waste/garbage from household/recreational facilities
● Flight paths of planes, helicopters and other non-leisure aircrafts
● Land, water, and air transport activities generating noise, light, and other forms of pollution
● Invasive alien species

<u>Waterbirds</u>

● Abiotic natural processes (e.g., erosion, drought)
● Abstraction from groundwater, surface water, or mixed water
● Burning for agriculture
● Conversion from one type of agricultural land use to another
● Disposal and treatment of waste/refuse from commercial and industrial facilities
● Freshwater fish and shellfish harvesting (professional)
● Hunting
● Illegal killing
● Intensive grazing or overgrazing by animals
● Forestry activities
● Sports, tourism, and recreational activities
● Use of plant protection chemicals in agriculture

Fish

● Abstraction from groundwater, surface water, or mixed water, for agriculture
● Restricted access to habitat due to obstacles (dams, etc.)
● Drainage for use as agricultural land
● Professional and recreational freshwater fisheries
● Development and operation of hydroelectric energy plants
● Illegal collection and capture
● Modification of hydrological flow of fresh water (rivers and lakes)

● Invasive alien species

● Physical alteration of water bodies (rivers and lakes)

● Decreased fertility, decreased genetic diversity, endogamy

● Habitat fragmentation (roads, paths, railways, and related infrastructure)

● Existing waste management practices in agriculture

Mammals

Marine mammals

● Bycatch by fishing equipment (static and towed nets and/or longlines)

● Underwater geotechnical surveys (seismic surveys to detect fossil fuel deposits in the seabed)

● Illegal harvesting and removal of individuals from their natural habitats

● Transport (water, air, and land) activities generating high levels of noise and other forms of pollution

● Professional and recreational fisheries that decrease the population of game birds, and general disruptions of species populations

● Military, naval, paramilitary, or police exercises using live fire, or military sonar systems, and relevant operations

● Residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, Styrofoam)

● Shipping lanes and ferry lanes transport operations, collisions with oceanic shipping vessels

● Temperature changes (e.g., increased temperatures and peak values) due to climate change

Large carnivores

● Abandonment of grassland management (e.g. cessation of grazing or mowing)

● Absence or reduction of interspecific faunal and floral relations (e.g., lack of prey)

● Uncontrolled logging and tree removal

● Intentional killing, illegal hunting

● Intensive grazing or overgrazing by livestock

● Illegal use of poisoned baits

Small mammals and Chiroptera

● Land use change for construction, recreation, and other purposes

● Fire (natural)

● Illegal collection and intentional killing

● Illegal use of poisoned baits

● Removal of small landscape features for agricultural land parcel consolidation removing green infrastructure (hedges, stone walls, springs, solitary trees, etc.)

Ungulates

● Hunting

● Illegal collection and intentional killing

● Illegal use of poisoned baits

● Decreased fertility, decreased genetic diversity, endogamy

● Habitat fragmentation (roads, paths, railways, and similar infrastructure)

Amphibians

● Habitat fragmentation (roads, paths, railways, and similar infrastructure)

● Extraction of groundwater, surface water, or mixed water

● Modification of hydrological flow of water bodies

Reptiles

Sea turtles

● Bycatch by fishing equipment (static and towed nets and/or longlines)

● Residential or recreational activities and structures generating noise, light, heat or other forms of pollution

● Interspecies relationships (competition, predation, parasitism, pathogens)

● Flooding (natural processes)

● Abiotic natural processes (e.g., erosion, silting up, drying out, submersion, salinization)

Snakes

● Extraction of minerals (rock, metal ores, sand, gravel, etc.)

● Change and repurposing of the landscape to the end of unifying farmland and removing green infrastructure (hedges, stone walls, bulrush, open trenches, drinking fountains, solitary trees, etc.)

● Land use change for construction and recreation

● Illegal use of poisoned baits

Terrestrial turtles

● Conversion of natural ecosystems and habitats to agricultural land (excluding drainage and burning)

● Use of fire/burning for agriculture and forestry

Plants

● Use of fire/burning in the context of agricultural activities

● Construction of or modification (e.g., housing and settlements) to existing urban or recreational areas

● Land use change for construction and recreation

● Drought and decreases in precipitation due to climate change

● Intensive grazing or overgrazing by livestock

● Interspecies relationships (competition, predation, parasitism, pathogens)

● Decreased fertility, decreased genetic diversity, endogamy

● Suppression of fire for agriculture

● Production and transmission of wind, wave, and tidal power, including relevant infrastructure

Invertebrates

Freshwater invertebrates

● Agricultural activities that cause diffuse pollution in surface water or groundwater

● Forestry activities that pollute surface water or groundwater

● Abstraction from groundwater, surface water, or mixed water

● Freshwater fisheries and shellfish harvesting

● Invasive alien species

Terrestrial gastropods

● Agricultural activities that cause diffuse pollution in surface water or groundwater

● Forestry activities that pollute surface water or groundwater

● Drainage works

● Drainage for agricultural land use

Lepidopterans

● Production and transmission of wind, wave, and tidal energy, including relevant infrastructure

● Illegal capture, collection, and removal from the habitat

Marine invertebrates

● Plant and animal diseases, pathogens, and parasites

● Intentional killing

● Illegal capture, collection, and removal from the habitat

● Marine recreational activities and tourism

Measures needed to maintain or restore favourable conservation status

- Implementing measures to improve foraging for raptors and scavengers (operating a network of raptor foraging sites, reintroducing ungulates, scattering small food deposits, planting seeds in less accessible and island areas to reinforce the species' foraging areas in non-arable lands)

- Implementing measures to improve nesting conditions for bird species

- Implementing measures to reduce the anthropogenic mortality of bird species due to electrocution and collisions with power lines and wind energy production plants

- Implementing measures to control and restrict the illegal use of poisoned baits in the Greek countryside

- Implementing measures to reduce the anthropogenic mortality of marine mammals (limiting the collisions of large commercial vessels with cetaceans, collecting waste to reduce plastics and pollution, improving the selectivity of fishing gear, communicating with and training stakeholders, etc.)

- Supporting and operating the national network that monitors the strandings of marine species of Community interest

- Implementing actions to rescue and rehabilitate sea turtles, Mediterranean monk seals, and large carnivores

- Implementing actions to protect *Pinna nobilis ex-situ*

- Creating favourable conditions for the viability of brown bear meta-populations in recolonised areas

- Managing point basins to cover the needs of fauna species of Community interest

- Creating passages to prevent the killing of amphibians, reptiles, and small mammals by traffic and well construction

- Implementing measures to reduce endogamy and the limited/fragmented distribution of ground squirrels

- Implementing measures to reduce the anthropogenic mortality of freshwater invertebrates that have a poor conservation status

- Implementing actions to reinforce fish populations that have a bad conservation status

- Promoting the ex-situ conservation of plant species listed in Annexes II and IV of Directive 92/43 and other important species within the Natura 2000 network, and implementing actions to reinforce populations and introduce into new areas plant species listed in Annexes II, IV, and V

- Implementing, reassessing, and drawing up action plans for species/habitat types of Community interest

- Studying, monitoring, and combatting terrestrial invasive alien species

Prioritization of measures to be implemented during the next MFF period

All the measures listed in the following tables are prioritised by Greece for the period 2021-2027.

List of prioritized measures to be carried out, and estimated costs for these measures

E.3.1

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
1. Increasing foraging sites for scavengers (*Aegypius monachus, Gyps fulvus, Neophron percnopterus*): reintroducing ungulates	One-off	1 Natura site	€342,857	Eastern Macedonia and Thrace	CF, ERDF, LIFE
2. Diversifying the feeding aid system for the vultures *Aegypius monachus, Gyps fulvus, Neophron percnopterus*: scattering small food deposits, collaborating with livestock farms, collecting dead animals, providing information	One-off	1 Natura 2000 site	€34,286	Eastern Macedonia and Thrace	CF, ERDF, LIFE
3. Operating a network of foraging sites for raptors (*Aegypius monachus, Aquila chrysaetos, Aquila fasciata, Aquila heliaca, Buteo buteo, Clanga clanga, Gypaetus barbatus, Gyps fulvus, Neophron percnopterus*): site construction, running costs	Recurrent	20 raptor foraging sites	€274,286	National level	CF, ERDF, LIFE
4. Controlling the illegal use of poisoned baits to reduce the mortality of scavengers and other important species *(Aegypius monachus, Aquila chrysaetos, Buteo buteo, Gypaetus barbatus, Gyps fulvus, Neophron percnopterus, Canis aureus, *Canis lupus, *Ursus arctos, Vipera ammodytes, Vipera ursinii, Vipera xanthina)* by putting together and operating teams using specially trained dogs to detect poisoned baits	Recurrent	14 teams using trained dogs	€417,600	National level	CF, ERDF, LIFE
5. Restricting the illegal use of poisoned baits in the Greek countryside: recording and registering poisoning incidents, launching a campaign to communicate with and raise awareness among land users and the general public, running specialised workshops for employees of competent agencies and bodies, updating and implementing local action plans to combat the illegal use of poisoned baits. This measure is expected to benefit the following bird species: *Aegypius monachus, Aquila chrysaetos, Aquila fasciata, Aquila heliaca, Buteo buteo, Clanga clanga, Gypaetus barbatus, Gyps fulvus, Neophron percnopterus,* along with the following mammal species: *Canis aureus, *Canis lupus, Felis silvestris, Lutra lutra, Lynx lynx, Martes martes, Mustela putorius, *Ursus arctos, Vormela peregusna,* and the reptile species: *Dolichophis jugularis, Coronella austriaca, Elaphe quatuorlineata, Elaphe sauromates, Eryx jaculus, Hierophis gemonensis, Hierophis viridiflavus, Platyceps najadum, *Macrovipera schweizeri, Zamenis longissimus, Zamenis situla.*	Recurrent	1 project	€171,429	National level	CF, ERDF, LIFE, ERASMUS
6. Implementing measures to reduce the mortality of bird species (raptors, Ciconiiformes, Pelecaniformes, heron-like birds, Anseriformes, seabirds) due to electrocution and collisions with power lines and wind energy production plants. This measure is expected to benefit the following species: *Accipiter brevipes, Aegypius monachus, Anas acuta, Anser anser, Anser erythropus, Aquila chrysaetos, Aquila fasciata, Aquila heliaca, Ardea alba, Ardea purpurea, Ardeola ralloides, Aythya ferina, Aythya fuligula, Aythya nyroca, Branta ruficollis, Buteo buteo, Calonectris diomedea, Circus cyaneus, Ciconia ciconia, Clanga clanga, Coracias garrulus, Cygnus columbianus bewickii, Cygnus cygnus, Cygnus olor, Falco biarmicus, Falco eleonorae, Falco naumanni, Gypaetus barbatus, Gyps fulvus, Hydrobates pelagicus, Ixobrychus minutus, Larus audouinii, Larus genei, Larus melanocephalus, Mergus merganser, Neophron percnopterus, Numenius arquata arquata, Pandion haliaetus, Oxyura leucocephala, Pelecanus crispus, Phalacrocorax aristotelis desmarestii, Phalacrocorax carbo sinensis, Phoenicopterus roseus, Plegadis falcinellus, Puffinus yelkouan, Recurvirostra avosetta, Spatula querquedula, Tadorna ferruginea.*	One-off	insulating 3,000 pylons/year and installing markers along 30 km of power lines/year within the Natura 2000 network	€381,429	National level	CF, ERDF
7. Implementing measures to conserve raptors (*Aquila chrysaetos Aquila fasciata, Buteo buteo, Falco biarmicus*): planting seeds in less accessible and island areas to reinforce the species' foraging areas in non-arable lands, using telemetry and monitoring with transmitters	One-off	1 project	€60,000	National level	CF, ERDF, LIFE
8. Improving nesting conditions for bird species (*Calonectris diomedea*, *Coracias garrulus*, *Ciconia ciconia, Falco eleonorae, Falco naumanni*, *Puffinus yelkouan*): maintaining, replacing, and installing artificial nests	Recurrent	artificial nests for 6 bird species	€120,000	National level	CF, ERDF, LIFE
9. Designing, constructing, and installing artificial islands to reinforce the nesting conditions of waders and sea bird species (*Gelochelidon nilotica, Haematopus ostralegus, Himantopus himantopus, Hydroprogne caspia, Larus genei, Larus melanocephalus, Pelecanus crispus, Recurvirostra avosetta, Sterna hirundo, Sternula albifrons, Thalasseus sandvicensis*)	One-off	1 project	€30,857	Central Macedonia	CF, ERDF, LIFE
10. Creating conditions to reduce competition between cormorants, corvids, and herons (*Ardea alba*, *Ardea cinerea, Ardeola ralloides, Bubulcus ibis, Egretta garzetta, Microcarbo pygmaeus, Nycticorax nycticorax, Platalea leucorodia, Plegadis falcinellus*): creating new nesting habitats, etc.	One-off	1 project	€17,143	Central Macedonia	CF, ERDF, LIFE
11. Implementing measures to limit the collisions of large commercial vessels with sperm whales (*Physeter macrocephalus*) within their	One-off	reducing sperm	€50,000	National level	CF, ERDF, LIFE,

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
critical habitats: using new technologies to alert large vessels before they enter important areas, informing seamen and training them to use such technologies, etc.		whale mortality due to collisions with large vessels by 80%			INTERREG, HORIZON, ERASMUS
12. Improving the conservation status and reducing the anthropogenic mortality of cetaceans (*Balaenoptera physalus*, *Delphinus delphis*, *Grampus griseus*, *Phocoena phocoena Physeter macrocephalus Stenella coeruleoalba*, *Tursiops truncatus*, and *Ziphius cavirostris*): actively collecting waste to reduce plastics and pollution (coastal and underwater cleaning, waste collection through fisheries, etc.), improving the selectivity of fishing gear, communicating with and training stakeholders, etc.	Recurrent	10 projects	€1,428,571	National level	CF, ERDF, EMFF, LIFE, INTERREG, ERASMUS
13. Supporting and operating the national network that monitors the strandings of marine species of Community interest (*Balaenoptera acutorostrata, Balaenoptera physalus, Delphinus delphis, Grampus griseus, Megaptera novaeangliae, *Monachus monachus, Phocoena phocoena, Physeter macrocephalus, Pseudorca crassidens, Stenella coeruleoalba, Steno bredanensis, Tursiops truncatus, Ziphius cavirostris, *Caretta caretta, *Chelonia mydas, Dermochelys coriacea*): establishing a common data collection and storage protocol, creating an open, accessible database, and training stakeholders (Protected Area Management Body employees, regional veterinarians, the coastguard, fishers, etc.), performing autopsies, collecting samples, communicating with the general population and volunteers	Recurrent	appropriately operating the national network that monitors strandings	€257,143	National level	CF, ERDF, EMFF
14. Carrying out a project to rehabilitate sea turtles (**Caretta caretta, *Chelonia mydas, Dermochelys coriacea*), and projects to communicate with and raise awareness among the general population and stakeholders	Recurrent	1 project	€102,857	National level	CF, ERDF
15. Establishing a Model Rescue and Rehabilitation Centre for individuals of the Mediterranean monk seal **Monachus monachus*	One-off	rehabilitation of 3 animals/year	€137,143	National level	CF, ERDF
16. Implementing actions to protect *Pinna nobilis ex-situ*: Rescuing and conserving healthy individuals in closed-loop tanks, cryogenically preserving gametes and/or larvae to preserve the species' genetic material	One-off	1,300 individuals	€214,286	National level	CF, ERDF, EMFF, LIFE
17. Carrying out a project to rescue and rehabilitate wild carnivores (**Canis lupus, *Ursus arctos*)	Recurrent	1 project	€48,000	National level	
18. Creating favourable conditions for the viability of brown bear (**Ursus arctos*) meta-populations in recolonised areas: collecting data, organising conferences, supporting a network of livestock guarding dogs, taking pilot preventive measures	Recurrent	survival of 5 reproductive individuals	€25,714	Thessaly	CF, ERDF, LIFE
	Recurrent	survival of 5 reproductive individuals	€34,286	Central Greece	CF, ERDF, LIFE
19. Managing point basins to cover the needs of fauna species of Community interest (**Canis lupus, Falco biarmicus, Ciconia nigra*)	One-off	100 catchments	€51,429	Thessaly	CF, ERDF, LIFE, INTERREG
20. Creating passages to prevent the killing of amphibians, reptiles, and small mammals (*Dryomys nitedula, Muscardinus avellanarius, Myomimus roachi, Sciurus anomalus, Spermophilus citellus, Bufotes viridis, Pelobates syriacus, *Macrovipera schweizeri, Testudo hermanni, Testudo graeca, Testudo marginata*) by traffic	One-off	4 projects	€171,429	National level	CF, ERDF, LIFE
21. Implementing measures to prevent the killing of reptiles, amphibians, and small mammals (*Dryomys nitedula, Myomimus roachi, Muscardinus avellanarius, Sciurus anomalus, Spermophilus citellus, Bufotes viridis, Pelobates syriacus, *Macrovipera schweizeri, Testudo hermanni, Testudo graeca, Testudo marginata*): installing special ramps in wells	Recurrent	4 projects	€34,286	National level	CF, ERDF, LIFE
22. Implementing measures to reduce endogamy and the limited/fragmented distribution of ground squirrels (*Spermophilus citellus*): applying *ex-situ* management (establishing a ground squirrel breeding colony to the end of creating new colonies in areas where the species has a historical presence), establishing two new fenced colonies, developing informational material to raise awareness among the general population on how humans and ground squirrels can coexist in rural areas	Recurrent	1 project	€100,286	Central Macedonia	CF, ERDF, LIFE
23. Implementing measures to reduce the anthropogenic mortality of freshwater invertebrates that have a poor conservation status (*Astacus astacus, *Austropotamobius torrentium, Unio crassus, Unio elongatulus, Vertigo angustior, Vertigo moulinsiana*): informing the general population using printed material and by placing informative or no-trespassing signs, communicating with stakeholders	One-off	1 project	€6,857	Eastern Macedonia and Thrace	CF, ERDF, LIFE, ERASMUS
	One-off	1 project	€6,857	Central Macedonia	
	One-off	1 project	€6,857	Central Greece	
	One-off	1 project	€6,857	Western	

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
				Macedonia	
	One-off	1 project	€6,857	Western Greece	
	One-off	1 project	€6,857	Thessaly	
	One-off	1 project	€6,857	Epirus	
24. Implementing actions to reinforce fish populations that have a bad conservation status (*Salmo louroensis, Salmo macedonicus, Salmo pelagonicus, Salmo peristericus, *Valencia letourneuxi*)	One-off	1 project	€25,714	Epirus	CF, ERDF, LIFE
25. Developing a study supporting the prohibition of fishing for anadromous fish species of Community interest (*Alosa fallax*)	One-off	1 project	€3,429	Eastern Macedonia and Thrace	CF, ERDF, EMFF, LIFE
26. Applying *ex-situ* conservation of 63 plant species listed in Annexes II and IV of Directive 92/43 and other important species within the Natura 2000 network: collecting and managing seeds, germinating, storing, producing seedlings	One-off	63 species	€85,714	National level	CF, ERDF, LIFE
27. Implementing actions to reinforce populations and introduce into new areas plant species listed in Annexes II, IV, and V (*Dactylorhiza kalopissii* subsp. *kalopissii, *Bupleurum capillare, *Convolvulus argyrothamnus, Fritillaria obliqua*)	One-off	1 Natura site	€11,143	Central Macedonia	CF, ERDF, LIFE
	One-off	1 Natura site	€8,571	Central Greece	
	One-off	2 Natura sites	€8,571	Crete	
	One-off	1 Natura site	€3,429	Attica	
	One-off	1 Natura site	€3,429	South Aegean	
	One-off	1 Natura site	€3,429	Central Greece	
28. Review and drafting of action plans for species/habitat types of Community interest (**Silene holzmanii, Salmo farioides, Salmo louroensis, Salmo macedonicus, Salmo pelagonicus, Salmo peristericus, Pelophylax cerigensis, Rupicapra rupicapra balcanica, Aegypius monachus, Gypaetus barbatus, Gyps fulvus, Neophron percnopterus, *Monachus monachus, Phocoena phocoena, Tursiops trunactus, *Ursus arctos, Parnassius apollo*, habitat type 2250*, etc.)	One-off	25 species/habitat types	€71,429	National level	CF, ERDF, LIFE
29. Implementing action plans for species and habitat types of Community interest (**Silene holzmanii, Salmo farioides, Salmo louroensis, Salmo macedonicus, Salmo pelagonicus, Salmo peristericus, Pelophylax cerigensis, Rupicapra rupicapra balcanica, Aegypius monachus, Gypaetus barbatus, Gyps fulvus, Neophron percnopterus, *Monachus monachus, Phocoena phocoena, Tursiops trunactus, *Ursus arctos, Parnassius apollo*, habitat type 2250*, etc.)	Recurrent	25 species/habitat types	€857,143	National level	CF, ERDF, LIFE
30. Implementing actions to combat the expansion of terrestrial invasive alien species	One-off	1 project	€342,857	National level	CF, ERDF, LIFE, INTERREG
31. Installing artificial nests for the species *Sitta krueperi* and studying the species' habitat.	One-off	100 artificial nests	€3,571	North Aegean	CF, ERDF, LIFE

Expected results for targeted species

- Increasing or stabilising the population of and available food for scavengers and raptors

- Reducing anthropogenic mortality (use of poisoned baits, electrocution and collision with power lines, collision with commercial vehicles, bycatch, ingestion of plastics, xenobiotics, and other toxic substances) for large carnivores, scavengers, raptors, sea birds, and marine mammals

- Reinforcing actions to communicate with and raise awareness among the general population and build capacity to stakeholders with regard to large carnivores, scavengers, raptors, sea birds, and marine mammals

- Reducing the mortality of sperm whales (*Physeter macrocephalus*) due to collisions with commercial and oceanic shipping vessels by 80%

- Reinforcing the rehabilitation and rescue of species of Community interest, including birds. With regard to **Monachus monachus*, at least 3 animals/year will be treated.

- Stabilising the subpopulations of the species *_Ursus arctos_* (survival of 10 reproductive individuals in 2 regions) and *_Canis lupus_* in recolonised areas

- Reducing the effects of traffic and wells on reptile, amphibian, and small mammal mortality

- Improving the conservation status by increasing/stabilising populations and distribution areas for the species *Spermophilus citellus*, *_Valencia letourneuxi, Fritillaria obliqua_*, *Dactylorhiza kalopissii* subsp. *kalopissii*, *_Bupleurum capillare_*, *_Convolvulus argyrothamnus_*, *Unio crassus, Unio elongatulus, Astacus astacus, *Austropotamobius torrentium, Vertigo angustior, Vertigo moulinsiana*

- Improving the conservation status of the species *Sitta krueperi* by installing 100 artificial nests

- Combatting invasive alien species in terrestrial areas

- Applying *ex-situ* conservation of 63 plant species listed in Annexes II and IV of Directive 92/43 and other important species within the Natura 2000 network

- Rescuing and conserving at least 1,300 healthy individuals of *Pinna nobilis* in closed circuit water tanks, in the absence of the lethal pathogen present across the Mediterranean

- Accurately monitoring mortality (including anthropogenic) of marine species of Community interest at national level

- Reducing the effects of marine plastic pollution and the resulting mortality of marine species of Community interest

- Reducing the mortality of anadromous fish species *Alosa fallax* due to fisheries

Expected results: other benefits

- Improving the conservation status of other protected species, too (e.g., of national interest, threatened species, species listed in Directives)

Mainstreaming large carnivores and human communities and activities coexistence

- Overall reducing the negative effects of poisoned bait use (on domestic animals, other species of national interest, or threatened species)

- Contributing to the reduction of marine pollution and to the improvement of marine ecosystem services

- Creating new jobs while implementing measures to reduce the anthropogenic mortality of species of Community interest, as well as the effects of power lines and electricity pylons on birds

- Communicating with and raising awareness among the general population and stakeholders on the need to protect the species of Community interest, and the value of these species

- Allowing for the development of ecotourism, and reinforcing local economy

E.3.2. Prevention and mitigation of damage caused by protected species, or compensation for such damage

Current status in terms of prevention, mitigation and compensation for damages

Conflict between humans and wildlife occurs when wildlife becomes an immediate, recurrent threat to humans and their activities, mainly resulting in the destruction of equipment, infrastructure, and agricultural production, of the plant, livestock, fishing, aquaculture, and land capital, eventually resulting in the loss of income, and also posing a possible threat to human safety. Such conflict leads to taking action to drive out and intentionally kill wild animals in retaliation, and to prevent the actual or perceived damage caused by them.

The following species interact with human activities, cause damage, and require actions for the mitigation of, and compensation for, such damage:

No	Species	Conservation status 2013-2018
Reptile species		
1	**Caretta caretta*	U2(-)
2	**Chelonia mydas*	U2(x)
3	*Dermochelys coriacea*	U2(x)
Mammal species		
1	**Canis lupus*	U1(+)
2	*Delphinus delphis*	U2(-)
3	*Grampus griseus*	U1(x)
4	**Monachus monachus*	U1(+)
5	*Phocoena phocoena*	U2(-)
6	*Stenella coeruleoalba*	XX
7	*Tursiops truncatus*	U1(x)
8	**Ursus arctos*	U1(+)

No	Species	Short-term population trend 2007-2018
Birds		
1	*Calonectris diomedea* (B)	=
2	*Larus audouinii* (B)	-
3	*Phalacrocorax aristotelis desmarestii* (B)	=
4	*Phalacrocorax carbo sinensis* (B)	+
5	*Puffinus yelkouan* (B)	=

Greece has in place the National System for the Protection and Insurance of Agricultural Activity (Greek Agricultural Insurance Organisation, ELGA), which also provides for the "...*active protection of agricultural production, of the plant, livestock, fishing, aquaculture, and land capital in farming*..." (Law 3877/2010). At the same time, damage caused by wild animals is included in the insured natural risks; according to the applicable legislation, however, the wild animals' category only includes the species **Ursus arctos* and **Canis lupus* as species of Community interest. Therefore, damages to the plant and livestock capital caused by these two species are compensated (the sums paid to livestock breeders and farmers for the period 2014-2020 are listed in section D.6). However, Greek legislation includes relevant provisions for species such as marine mammals, along with other protected species that interact with fisheries and other human production activities.

The coexistence of humans and large carnivores is a challenge for the entire European Union. The main issues to address include large carnivores approaching populated areas, as well as the damage they cause to the livestock and plant capital. Greece is part of the EU Platform on Coexistence between People and Large Carnivores (ENV/D.3/SER/2017/0021), a space for the dissemination and exchange of experiences regarding good practices in large carnivore management, where studies are developed and financial tools are examined by the NSRF to support actions promoting the coexistence with large carnivores.

Establishing the "Emergency Response Teams" in 2014 (Joint Ministerial Decision 104180/433, Government Gazette 272/issue B/07-02-2014) was an important milestone towards creating a horizontal mechanism for the management of human-bear interaction incidents, which increase with time and are mainly due, on the one hand, to the species' population recovery and improved geographical distribution and, on the other hand, to land use changes as well as bad practices with regard to anthropogenic food sources.

Other significant pilot actions implemented with regard to preventing and mitigating damage caused by large carnivores include installing special waste collection bins, installing electric fences to protect livestock and plant production, providing specially trained livestock guarding dogs, communicating and raising awareness, and building capacity. In the near future, fladry fences (special fences to deter wolves from approaching) will be installed, and teams will be put together and actions implemented with regard to poisoned baits.

The interactions/conflict of marine mammals, turtles, and sea birds with fisheries are a particularly complex issue, with several negative consequences for both sides. All species are at risk of accidentally getting entangled in fishing gear, being intentionally killed by fishers in retaliation, and facing prey depletion due to overfishing. The burden to the fisheries sector is mainly financial, due to fishing gear being damaged or destroyed by the animals and requiring repair, and due to the decreased quantity/quality of fishery products as a result of their predation by dolphins, seals, sea turtles, and sea birds.

Significant actions with regard to preventing, mitigating and compensating damage caused by protected marine species have been implemented by environmental organisations and research and academic institutes, and mainly include: a. developing studies on the extent and consequences of the interaction between marine mammals and coastal fisheries, with an emphasis on both the effects of fisheries as a threat to population viability, mainly regarding the Mediterranean monk seal **Monachus monachus*, and the assessment of financial damage caused to coastal fishers and fish farmers by Mediterranean monk seals and small cetaceans; b) developing studies on the effects of fisheries on sea turtles (**Caretta caretta*), and implementing the required actions to mitigate/resolve the interaction between them (informing fishers, using special tools and appropriate techniques to free turtles

entangled in nets, etc.); c. developing studies on the effects of fisheries on sea birds, and suggesting required measures to resolve the conflict. Last, environmental organisations submitted an "*Action Plan to Reduce the Interaction between Marine Mammals and Fisheries*" to the competent authorities of the Ministry of Rural Development and Food in 2019.

It should also be noted that specific predictions on the reduction of interaction between marine mammals and fisheries are included in the EU legislation already integrated in Greece's national legislation (EU Regulations: 1380/2013/EU on the Common Fisheries Policy, 1967/2006/EU concerning fishery resources in the Mediterranean Sea, 508/2014/EU on the European Maritime and Fisheries Fund), with a special mention to Article 40 paragraph h) of Regulation 508/2014/EU: "*schemes for compensation for damage to catches caused by mammals and birds protected by Directives 92/43/EEC and 2009/147/EC*".

Required measures

- Establishing and operating a scheme for compensating coastal fishers for damages caused to their catches and gear by protected marine species of Community interest, and supporting fishers and fish farmers to prevent the anthropogenic mortality of marine species of Community interest due to accidental entanglement in their fishing gear

- Implementing actions to mitigate the effects caused by cormorants on fishery products in Protected Areas

- Supporting livestock breeders in implementing preventive measures to prevent attacks and damage caused by large carnivores, and to reduce anthropogenic mortality of these species caused in retaliation. Implementing pilot measures to manage the conflict between wolves and hunters.

- Upgrading data recording by ELGA employees concerning the conditions around killings by large carnivores (**Ursus arctos* and **Canis lupus*). Developing a mobile application for farmers and livestock breeders so that they may receive ELGA compensations in a more efficient manner

- Organising and operating a National Platform on Coexistence between Human Communities and Large Carnivores

- Organising and establishing Emergency Response Teams to address and manage incidents of human-wolf interaction in periurban areas, and operating regional Emergency Response Teams to address and manage incidents of human-large carnivore interaction

- Establishing and operating a Breeding Centre and National Registry of Greek Livestock Guarding Dog Breeds that will be open to the public

- Implementing measures to prevent bear access to populated areas

- Paying compensations for livestock and plant capital when protected species are involved

Prioritization of measures to be implemented during the next MFF period

All the measures listed in the following tables are prioritised by Greece for the period 2021-2027.

List of prioritized measures to be carried out, and estimated costs for these measures

E.3.2

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
1. Establishing and operating a scheme for compensating coastal fishers for damages caused to their catches and gear by protected marine species of Community interest (*Calonectris diomedea, Larus audouinii, Larus melanocephalus, Phalacrocorax aristotelis desmarestii, Puffinus yelkouan, Phalacrocorax carbo sinensis, Delphinus delphis, Grampus griseus, *Monachus monachus, Phocoena phocoena, Stenella coeruleoalba, Tursiops truncatus, *Caretta caretta, *Chelonia mydas, Dermochelys coriacea*)	Recurrent	Reducing the mortality of marine species directly caused by fishery activities by 50%	€8,571,429	National level	EMFF
2. Supporting fishers and fish farmers to prevent the anthropogenic mortality of marine species of Community interest (*Calonectris diomedea, Larus audouinii, Larus melanocephalus, Phalacrocorax aristotelis desmarestii, Puffinus yelkouan, Phalacrocorax carbo sinensis, Delphinus delphis, Grampus griseus, *Monachus monachus, Phocoena phocoena, Stenella coeruleoalba, Tursiops*	Recurrent	Reducing the mortality of marine species directly caused by fishery	€1,714,286	National level	EMFF

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
*truncatus, *Caretta caretta, *Chelonia mydas, Dermochelys coriacea*) due to accidental trapping in their fishing gear: replacing fishing equipment, using interaction-reducing gear, as well as gear and equipment that minimise the accidental capture, injury, entanglement, and killing of marine mammals, training fishers in mild and sustainable fishing practices, as well as in releasing protected mammals accidentally entangled in fishing gear		activities by 50%			
3. Implementing actions to mitigate the effects caused by cormorants (*Phalacrocorax carbo sinensis*) on fishery products in Protected Areas: developing a study and implementing technical/preventive measures	One-off	3 projects	€37,714	National level	EMFF
4. Organising and operating a National Platform on Coexistence between Human Communities and Large Carnivores (**Ursus arctos, *Canis lupus*)	Recurrent	1 project	€84,000	National level	CF, ERDF, LIFE
5. Developing a mobile application for farmers and livestock breeders so that they may receive ELGA compensations for damages by species of Community interest in a more efficient manner (**Ursus arctos, *Canis lupus*)	One-off	1 project	€10,286	National level	CF, ERDF, LIFE
6. Upgrading data recording by ELGA employees concerning the conditions around killings by large carnivores (**Ursus arctos* and **Canis lupus*).	One-off	1 project	€102,857	National level	LIFE
7. Supporting livestock breeders in implementing preventive measures to prevent attacks and damage caused by large carnivores (**Ursus arctos, *Canis lupus*), and to reduce anthropogenic mortality of these species caused in retaliation.	Recurrent	900 livestock breeders	€714,286	National level	EAFRD
8. Organising and establishing Emergency Response Teams to address and manage incidents of human-wolf (**Canis lupus*) interaction in periurban areas: establishing a protocol and hold meetings with stakeholders and the authorities	One-off	1 project	€15,429	National level	CF, ERDF, LIFE
9. Operating regional Emergency Response Teams to address and manage incidents of human-large carnivore (**Ursus arctos, *Canis lupus*) interaction	Recurrent	2 projects	€24,857	Eastern Macedonia and Thrace	CF, ERDF, LIFE
	Recurrent	1 project	€26,571	Central Macedonia	
	Recurrent	2 projects	€30,000	Western Macedonia	
	Recurrent	2 projects	€26,571	Epirus	
	Recurrent	2 projects	€30,000	Thessaly	
	Recurrent	1 project	€23,143	Central Greece	
	Recurrent	1 project	€19,714	Attica	
10. Establishing and operating a Breeding Centre for Greek livestock guarding dog breeds that will be open to the public, to prevent damage by the large carnivores **Ursus arctos, *Canis lupus*	Recurrent	1 breeding centre	€85,714	Epirus	CLLD
	Recurrent	1 breeding centre	€85,714	Thessaly	CLLD
11. Establishing and operating a National Registry of Greek Livestock Guarding Dog Breeds. This measure is expected to benefit the large carnivores of Community interest (**Ursus arctos, *Canis lupus*).	Recurrent	1 project	€33,086	National level	CF, ERDF
12. Implementing pilot measures to manage the conflict between wolves (**Canis lupus*) and hunters: testing and spreading the use of special electric protective vests for hunting dogs	One-off	100 electric vests	€41,554	Eastern Macedonia and Thrace	CF, ERDF, LIFE
	One-off	100 electric vests	€41,554	Central Macedonia	
	One-off	50 electric vests	€20,777	Western Macedonia	
	One-off	150 electric vests	€62,331	Epirus	
	One-off	100 electric vests	€41,554	Thessaly	
	One-off	100 electric vests	€41,554	Central Greece	
13. Implementing measures to prevent bear (**Ursus arctos*) access to populated areas: using electric fences around warehouses/sheds, gardens, orchards, and other anthropogenic food sources for bears, drafting a technical guide and establishing advisory agencies, modifying waste bins to prevent tampering	One-off	500 fences and 500 bins	€150,000	Eastern Macedonia and Thrace	CF, ERDF, LIFE
	One-off	800 fences and 500 bins	€186,857	Western Macedonia	

Name and short description of the measures	Type of measure	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Site of implementation	Possible EU co-funding source
	One-off	800 fences and 500 bins	€186,857	Epirus	
	One-off	500 fences and 500 bins	€150,000	Thessaly	
14. Paying compensations for livestock and plant capital when protected species are involved (e.g., **Ursus arctos, *Canis lupus*)	Recurrent	Reducing the mortality of protected species caused by conflict with livestock breeders and farmers	€1,428,571	National level	

Expected results for targeted species

- Reducing the mortality of marine species (marine mammals, turtles, and sea birds) directly caused by fishery activities by 50%

- Preventing retaliation for damage caused by large carnivores, therefore reducing anthropogenic mortality

- Improving the coexistence between people and large carnivores by taking preventive measures (special livestock guarding dogs, electric fences, etc.), operating immediate response teams, and organising a national platform on coexistence between people and large carnivores

- Improving the conservation status of species of Community interest, including birds, which are mainly threatened by their conflict with human activities

- Communicating with and raising awareness among stakeholders engaged in conflict (fishers, fish farmers, hunters, farmers, livestock breeders, etc.)

Expected results: other benefits

- Reducing loss of income due to damage to fishing gear, catch, and fish farming infrastructure caused by protected marine species

- Reducing loss of income due to damage to livestock and plant capital caused by large carnivores

- Improving and streamlining the process of compensation payment from ELGA to livestock breeders and farmers

- Compensating the financial losses caused to the fisheries/fish farming sector by protected marine species

- Creating new jobs while implementing and operating priority measures (operating a Breeding Centre and National Registry of Greek Livestock Guarding Dog Breeds)

- Promoting sustainable fishing practices with reduced effects on marine ecosystems, preventing overfishing, and protecting marine habitats against destructive fishing practices

- Promoting sustainable farming and livestock breeding practices with reduced effects on habitat types and species of Community interest

E.3.3. References for species-specific measures not related to specific ecosystems or habitats

Online database for EU LIFE projects http://ec.europa.eu/environment/life/project/Projects/index.cfm

Law 1650/1986 *on protecting the environment*

Law 3877/2010 *on the System for the Protection and Insurance of Agricultural Activity*

Law 2342/1995 *on the active protection of agricultural, livestock, and fishery production, and other provisions*

Law 3937/2011 - Government Gazette A 60/31.03.2011 on the preservation of biodiversity and other provisions

REGULATION 1967/2006/EC *concerning fishery resources in the Mediterranean Sea*

REGULATION 1380/2013/EU *on the Common Fisheries Policy*

REGULATION 508/2014/EU *on the European Maritime and Fisheries Fund*

REGULATION 2015/531/EU *supplementing Regulation (EU) No 508/2014*

Vangelis I. Paravas, Spyros Kotomatas, Amalia Alberini, Panagiota Maragkou, Antigoni Foutsi, Konstantinos Liarikos, "Action Plan to Reduce the Interaction between Marine Mammals and Fisheries in Greece", 2019. WWF Hellas. 34 pages.

Government Gazette B/272/7-2-2014. No. 104180/433. "*Implementing measures to manage incidents of bear (Ursus arctos) access to/interaction in populated areas*"

Joint Ministerial Decision 43236/1053/17.10.2017 (B 3760) National Action Plan for *Neophron percnopterus* in Greece.

Joint Ministerial Decision 43235/1053/17.10.2017 (B 3762) National Action Plan for *Anser erythropus* in Greece.

Joint Ministerial Decision 43231/1054/17.10.2017 (B 3761) Regional Action Plan for *Falco naumanni* in the Thessalian plain.

F. Further added values of the prioritized measures

The further added values of the prioritized measures have been detailed in each subsection of section E.