PRIORITISED ACTION FRAMEWORK (PAF) FOR NATURA 2000 in WALLONIA/BELGIUM

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

for the *Multiannual Financial Framework* period 2021 – 2027

Contact : Tomy Tchatchou, Head of Unit
Public Service of Wallonia
General Directorate of Agriculture, natural Resources and Environment
Forest and Nature Department
Unit Natura 2000
15 Avenue Prince de Liege
5100 NAMUR
BELGIUM
Tel. : +32 81 33.58.55 / +32 479.79.12.57
Email : honore.tchatchoutomy@spw.wallonie.be

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 mainly be designed "*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 and 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/EEC[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 infrastructure (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.

[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/EN/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/EN/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.

As the PAF redaction and completion was requested by the European Commission and finished before the end of the new reporting phase, the conservation status refered afterward are those of the preceeding Art. 17 reporting (2007-2012) (SPW 2013, Wibail *et al.* 2014), except if explicitely stipulated.

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

[5] Special Report No 1/2017: More efforts needed to implement the Natura 2000 network to its full potential https://www.eca.europa.eu/en/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=EN&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

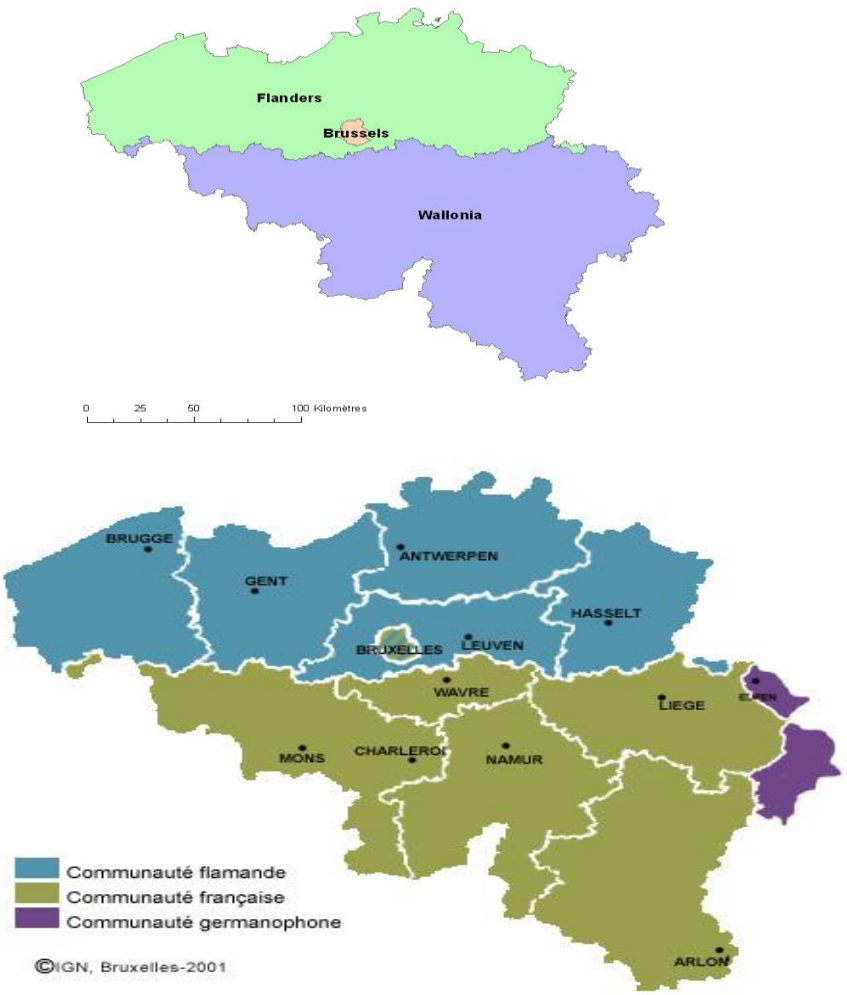
payments to farmers for agri-environmental measures on grasslands, etc.), one-off expenditures are typically related to non-recurring actions such as habitat restoration projects, large infrastructural investments, purchase of durable goods, etc. The correct allocation of costs to either category ("running" 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 WALLONIA/BELGIUM

Belgium is made up of 1 Federal State, 3 Regions (Brussels, Flanders and Wallonia) and 3 Communities (Flanders, French and German).



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

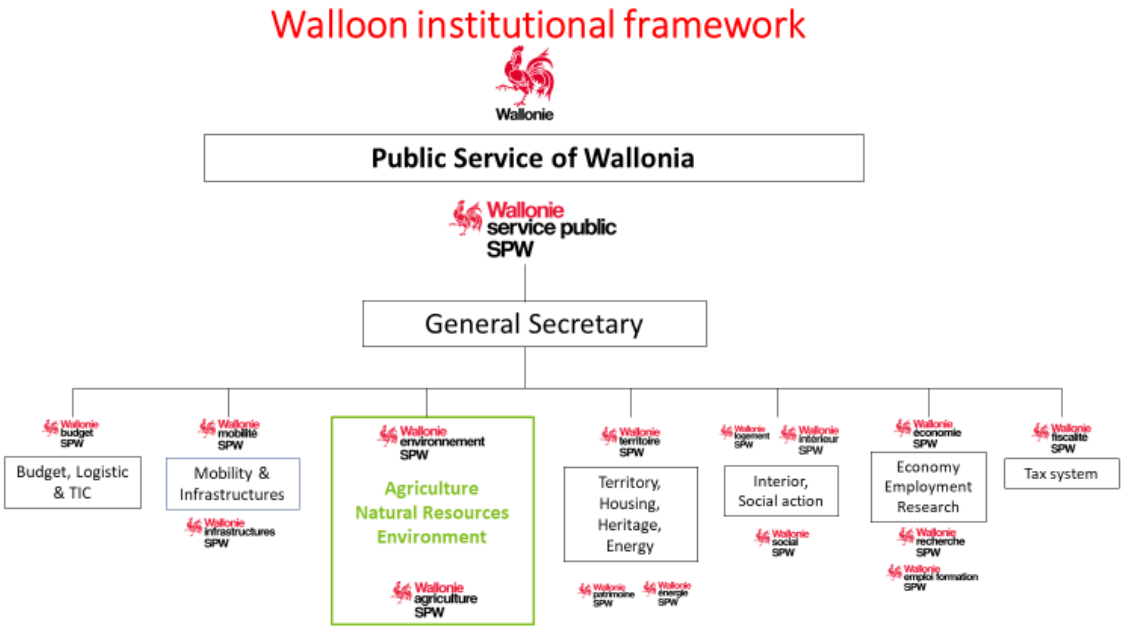
The nature conservation and biodiversity are competences of the Regions.

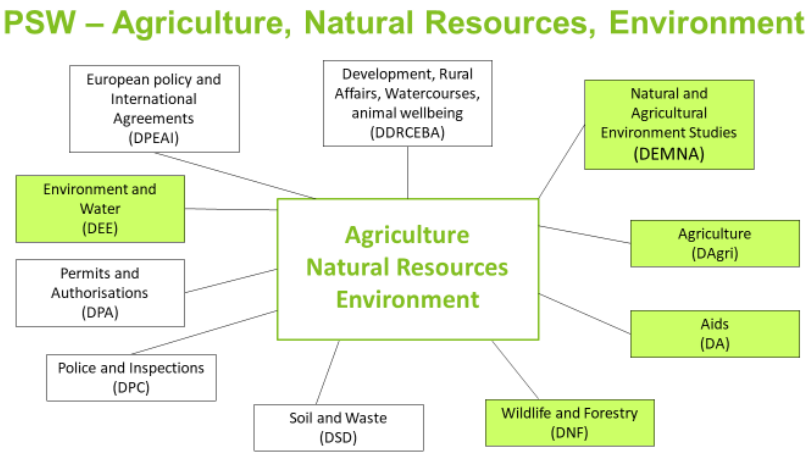
Thus, the Regions of Brussels, Flanders and Wallonia are responsible for the implementing of Natura 2000 in their respective territories; the Federal Government manages all the Natura 2000 sites in the North Sea.

This Prioritised action framework (PAF) establishes, for Wallonia (surface : 16.844 km², Population (2015) : 3.589.744 hab.), the multiannual planning of the measures that are necessary to implement the Natura 2000 network and its associated green infrastructure, while specifying the financing needs for these measures.

The implementation of Natura 2000 is entrusted by the Public Service of Wallonia (PSW) to the General Directorate of Agriculture, Natural Resources and Environment (named PSWANRE).

Within the PSWANRE, the Directorate of Nature and Green Spaces of the Department of Wildlife and Forests (DNF) is responsible for the implementation and management of Natura 2000 network. The Department of the study of the Natural and Agricultural Environment (DEMNA) is responsible for the scientific aspects, mapping and monitoring of Natura 2000 sites (habitats and species of community interest).





The CAP is prepared by these two Departments under the supervision of the DGO3 Steering Committee.

At the Walloon level, green infrastructure covers several themes:

- the Walloon Nature Network (WNN): potentially, the entire regional territory.

- the Main Ecological Structure (MES), which includes the Natura 2000 network and Sites of Great Biological Interest (SGBI).

- the sites protected by the Nature Conservation Act (Nature Reserves, CSIS, Ramsar ...).

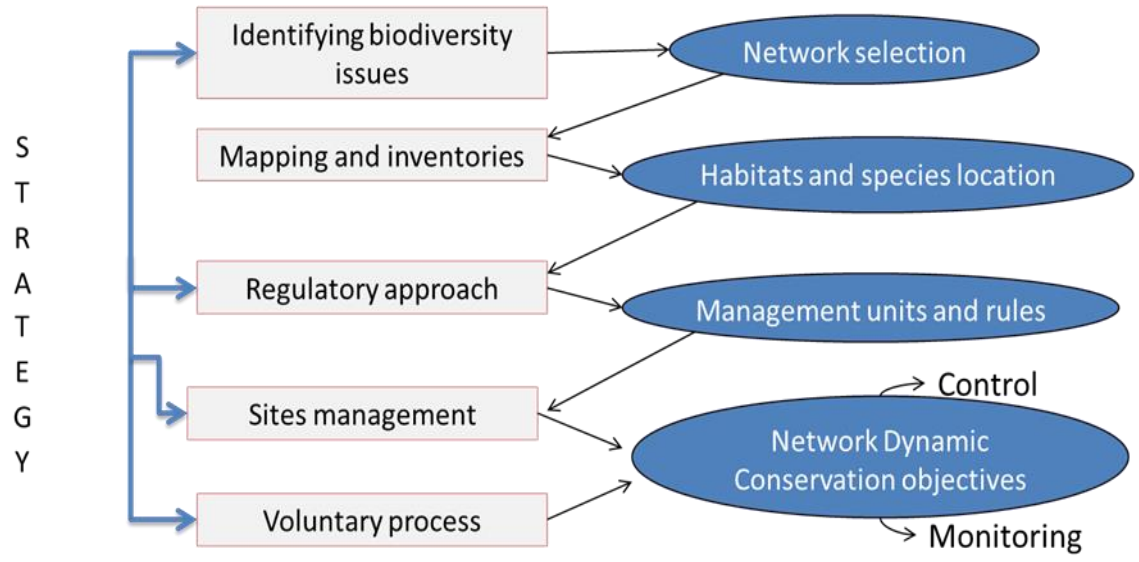
Concerning the Habitats Directive, two biogeographical regions are present in Wallonia, the Atlantic and the Continental.

In the Atlantic region, 27 habitats of Annex I of the Habitats Directive are present in Wallonia including 8 priority habitats (6110 , 6120 , 6210 , 6230 , 7220 , 9180 , 91D0 , 91E0). This region in Wallonia is home to 22 species under Annex II of the Habitats Directive.

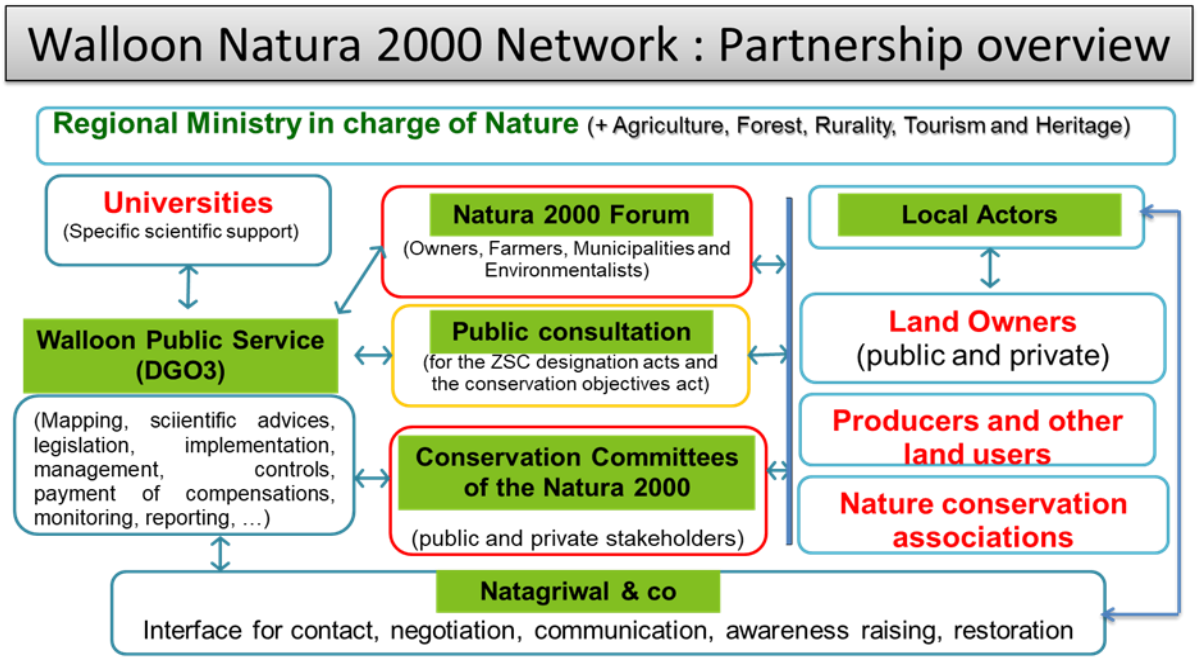
In the Continental region , 41 habitats of Annex I of the Habitats Directive are present in Wallonia including 10 priority habitats (6110 , 6120 , 6210 , 6230 , 7110 , 7220 , 8160 , 9180 , 91D0 , 91E0) This region in Wallonia is home to 28 species under Annex II of the Habitats Directive .

For the Birds Directive, there is no partition between biogeographical regions. In Wallonia, 48 Annex I species are considered to be regularly seen (i.e. annual). A further 12 species are also considered SPA-trigger species under Article 4.2. Of this total, 21 are breeders, 24 are both breeding and wintering/migrating species and 15 are are only migrating or wintering species.

In Wallonia, the implementation strategy of Natura 2000 is as follow:



Different partners are involved in the implementation of the Walloon Natura 2000 network.



The involvement of all these partners in the implementation/management of Natura 2000 is an asset for the acceptance and ownership of the different actions and measures taken to improve the conservation status of the habitats and species of Community interest. This is a constraint, however, as all proposals for objectives, actions and measures go through a series of consultations with different interest groups (for example, environmentalists versus producers) before to be adopted by the government. Deadlines are therefore lengthened. Sometimes negotiations may lead to insufficient measures required to maintain or restore these conservation status.

As far as this PAF is concerned, it has been prepared by the public authority guarantors of the regional nature conservation policy, including Natura 2000, taking into account the following elements:

-Belgium's National Strategy for Biodiversity 2006-2020

(http://www.biodiv.be/implementation/docs/stratactplan/);

- Nature Conservation Law and other regional acts on nature;

- Designation acts for ZSC;

- 2013 reports under Article 17 of the Habitats Directive and Article 12 of 2013 Birds Directive;
- 2019 reports under Article 17 of the Habitats Directive and Article 12 of 2013 Birds Directive in the process of being finalized;

- The regional and sites levels conservation objectives adopted by the Walloon Government;
- Better knowledge of scientific experts on habitats and species of Community interest;
- Experiences of restoration and management of habitats and species of community interest from projects such as Lifes, for example;

- First results of the Belgian Nature Intedrated Project (BNIP) (2015-2021) (http://biodiversite.wallonie.be/fr/life-integre.html?IDC=6006)

The draft of the PAF has been submitted to the partners listed above and the remarks/comments have been taken into account in the current version.

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

		Priority financing needs 2021-2027	
1.	**Horizontal measures and administrative costs related to Natura 2000**	Annual running costs (Euros / year)	One-off / project costs (Euros / year)
1.1.	Site designation and management planning	0	0
1.2.	Site administration and communication with stakeholders	18 650 000	100.000
1.3.	Monitoring and reporting	650 000	470.000
1.4.	Remaining knowledge gaps and research needs	0	455.000
1.5.	Natura 2000-related communication and awareness raising measures, education and visitor access	1 495 000	1.200.000
	Sub-total	**20.795.000**	**2.225.000**

2.a	**Natura 2000 site-related maintenance and restoration measures for species and habitats**	Annual running costs (Euros / year)	One-off / project costs (Euros / year)
2.1.a	Marine and coastal waters		
2.2.a	Heathlands and shrubs	1.734.000	2.163.286
2.3.a	Bogs, mires, fens and other wetlands	62.500	721.429
2.4.a	Grasslands	12.357.171	3.344.321
2.5.a	Other agroecosystems (incl. croplands)		
2.6.a	Woodlands and forests	2.718.273	416.071
2.7.a	Rocky habitats, dunes & sparsely vegetated lands	89.621	355.536
2.8.a	Freshwater habitats (rivers and lakes)	134.000	1.740.785
2.9.a	Others		
	Sub-total	**17.095.565**	**8.741.428**

2.b	**Additional "Green infrastructure" measures beyond Natura 2000 (further improving coherence of the Natura 2000 network, including in a cross-border context)**	Annual running costs (Euros / year)	One-off / project costs (Euros / year)
2.1.b	Marine and coastal waters		
2.2.b	Heathlands and shrubs	111.180	448.857
2.3.b	Bogs, mires, fens and other wetlands		
2.4.b	Grasslands	20.569.763	1.067.500
2.5.b	Other agroecosystems (incl. croplands)	8.786.000	60.000
2.6.b	Woodlands and forests	695.790	304.186
2.7.b	Rocky habitats, dunes & sparsely vegetated lands	18.750	140.893
2.8.b	Freshwater habitats (rivers and lakes)	574.714	14.741.429
2.9.b	Others (caves, etc.)		
	Sub-total	**30.756.197**	**16.762.864**

3.	**Additional species-specific measures not related to specific ecosystems or habitats**	Annual running costs (Euros / year)	One-off / project costs (Euros / year)
3.1 a	Species-specific measures and programmes not covered elsewhere inside the N2000 Network	110 857	152 859
3.1 b	Species-specific measures and programmes not covered elsewhere beyond the N2000 Network (green infrastructure)	**74 428**	**815 427**
3.2.	Prevention, mitigation or compensation of damage caused by protected species	**350 000**	**150 000**
	Sub-total	**535 285**	**1 118 286**

	Annual total	**69 182 047**	**28 847 578**
	Total (2021-2027)	**686 207 375**	

C. Current state of the Natura 2000 network

C.1. Area statistics of the Natura 2000 network

The protection of Walloon Natura 2000 sites was built in 3 stages:

- Since 2011, general conservation measures to prevent the deterioration of conservation status at the site level have been taken via the Walloon Government (WG) "General Measures" decree. These measures apply to the entire Natura 2000 network.

- In 2011, in parallel to these general provisions, measures related to biological issues were defined in the WG "Catalog" decree. These measures are described by management unit (MU), listing the habitats and species that may be present in MU.

- Finally, since 1 December 2016, the 240 Natura 2000 sites in the Walloon Region each have a designation act. These acts describe the real biological issues and represent them cartographically within each site. The Natura 2000 network is considered as complete for now. Only a few marginal changes, related to the dynamic process of consultation, restoration and management actions, Life projects and administrative acts (permit, Natura authorization ...) are carried out on the perimeters.

The Walloon system only makes a theoretical distinction between SAP and SAC.

The 3 existing cases on the 240 Walloon sites are distributed as follows:

• 1 site exclusively SPA;

• 12 sites exclusively SAC (SCI);

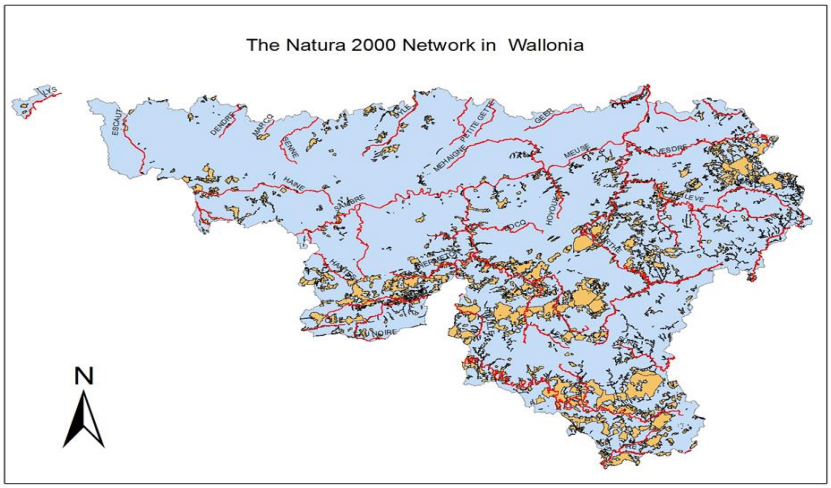
• 227 sites combining both SPA and SAC.

In practice, all Natura 2000 sites are managed using the same legal tools (see above) whether they are SPA, SAC or a combination of both.

The area of the network is officially 221,811.24 ha or about 13% of the Walloon territory.

	Natura 2000 area data per EU Member State (in Ha)						Proportion (in %) of the land area covered by:		
	Terrestrial			Marine					
Name of region	**SCI**	**SPA**	**N2K**	**SCI**	**SPA**	**N2K**	**SCI**	**SPA**	**N2K**
ATL	739.67	6.06	17 157.19	n.c.	n.c.	n.c.	4.13	0.03	95.84
CTL	75.15	0	203 833.17	n.c.	n.c.	n.c.	0.04	0	99.96
Total	**814.82**	**6.06**	**220 990.36**	n.c.	n.c.	n.c.			

C.2. Map of the Natura 2000 network in Wallonia/BE



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.

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

Total allocation from the EAFRD to the Member State/region: **€ 87 520 584**

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							
M7 Basic services & village renewal in rural areas	12 870 576	19 305 864	3 200 000	4 800 000	3 200 000	4 800 000	This measure is fit for purpose. It is entirely dedicated to restoration within Natura 2000 network. As it is used, we anticipate full spending by the end of the current period (2014-2020). Necessary to continue this measure in the next period
M8 Investments in forest area							
M10 Agri-environment climate measures	59 000 000	88 500 000	43 040 000	64 560 000	43 040 00.00	64 560 000	Focused has been made on AES having a positive impact on Natura 2000 habitats and species. As it is used, we anticipate full spending by the end of the current period (2014-2020). Indisputable results for these measures that have to be continued during the next period.

M12 Natura 2000 payments	15 650 008	23 475 012	15 650 008	23 475 012	15 650 008	23 475 012	This is a highly strategic measure because it compensates for the constraints imposed by the Natura 2000 conservation measures imposed to managers and owners. To continue absolutely as the previous measures
M13 Payments to areas facing natural or other specific constraints							
M15 Forest-environmental and climate services and forest conservation							
Other measures							
Subtotal	**87 520 584**	**131 280 876**	**61 890 008**	**92 835 012**	**61 890 008**	**92 835 012**	
TOTAL	**218 801 460**		**154 725 020**		**154 725 020**		

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

NB: It is difficult at the present stage to break down the amounts of funding by categories of intervention (85 and 86). The table below will not be completed.

Total allocation from ERDF to the Member State / region:

ERDF share = 681 350 151; Wallonia share= 1 022 025.50 €

Total allocation from Cohesion Fund to the Member State / region:

No Cohesion Fund in Wallonia.

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					
86 Protection, restoration and sustainable use of Natura 2000					
Other categories					
Subtotal					
TOTAL					

D.3 European Maritime and Fisheries Fund (EMFF)

Total allocation from the EMFF to the Member State: **N.A.**

Measure	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	
Subtotal					
TOTAL					

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	28 772 719.20	19 181 812.80	
Integrated projects	15 944 699.4	10 629 799.6	
Others (NCFF etc.)			
Subtotal	44.717.418,60	29 811 612.40	
TOTAL	**74.529.031**		

D.5 Other EU funds, including Interreg:

NB: It is difficult at this stage to break down the amounts for funds other than INTERREG. The total below is aggregated, it is difficult to isolate the Walloon part

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: not available for Wallonia

Total national/regional funding allocated for the co-funding of these measures: not available for Wallonia

Interreg V program

- A, France Wallonia Flanders: Priority axis 3 – ERDF 42 494 261 € from which 28 329 507 € for Member States.

- A, Greater Region: Priority axis 2 - ERDF 37 532 000 € from which 25 021 333 € for Member States.

- A, Euregio Meuse Rhine: no priority axis envi.

- B, North West Europe (NWE): Priority axis 3 - ERDF 95 072 242 € from which 63 381 495 € for Member States.

- C, Europe: Priority axis 4 - ERDF 84 441 685 € from which 14 902 944 € for Member States.

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: **4 564 000 €**

- **Voluntary implementation of Natura 2000 conservation measures** going beyond the mandatory baseline (100 % payments by Walloon budget) : 400 000 €

These measures concern forest owners who wish to implement measures going beyond the basic measures imposed by the general measures applicable in Natura 2000 sites (http://environnement.wallonie.be/legis/consnat/cons045.htm). This involves paying 100 € / ha for aging areas established beyond. 3% compulsory (with a maximum of 10% of the property in Natura 2000) as well as for forest branches beyond the mandatory 10 m wide (with a maximum of 20 m).

- **Management of natural reserves** mainly concerned by Natura 2000: 350 000 €

The Law of the nature conservation of 12 July 1973 provides different types of status of protected areas for the central areas : the state natural reserve, the authorized natural reserve, the Forest reserve, the wetland of biological interest, underground cavity of scientific Interest. More: http://biodiversite.wallonie.be/fr/reserves-naturelles-co.html?IDC=825

- **Nature contracts**: 14 000 €

These contracts concern, for the most part, species (eg: corncrake, harrier) whose presence or song is noted in the meadows before the mowing. Compensatory subsidies are offered and paid to the farmers concerned so that mowing is delayed in a demarcated area in order to allow the development of the chicks to take place until they take off.

- **Green infrastructure**
  - ***Late mowing***: 50 000 €

    This concerns the subsidies to the municipalities involved in the contract of late mowing of roadsides. More : http://biodiversite.wallonie.be/fr/le-fauchage-tardif.html?IDC=3659
  - ***hedge***: 300 000 €

    These means concerne the subsidies for planting hedges.
    More: http://environnement.wallonie.be/legis/consnat/cons063.htm .
  - ***Maya plan***: 150 000 €

    The Maya plan aims to save the bees and pollinating insects in Wallonia through reconstruction of spaces rich of honey plants, support for young beekeepers, research on bee diseases, late mowing. Many municipalities are also involved.
    More: http://biodiversite.wallonie.be/fr/plan-maya.html?IDC=5617
  - ***Municipality Nature Development Plan***: 300 000€

    The municipal nature development plans are based on a voluntary and coordinated approach for territorial development in relation to the ordinary and extraordinary nature.
    The projects are varied from one municipality to another and many partners participate. They affect different forms of awareness and concern all areas that constitute a territory.
    More : http://biodiversite.wallonie.be/fr/pcdn.html?IDC=3158
  - ***Nature Park***: 3 000 000 €

    New parks now cover 48 Municipalities. They aim for the protection and enhancement of natural heritage and remarkable landscapes. Education and public information is one of their missions whose importance is growing.
    More: http://www.fpnw.be/

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: 31/12/2018)

The Walloon Natura 2000 network has been fully designated since 1 December 2016 (240 designation acts). These designation acts describe for each site the management units (MU) they contain and the habitats and species they support. A map of perimeters and Management Units (MUs) is integrated.

Protection measures have been defined through 2 other legal provisions taken by Walloon Government (WG):

- Protective measures to prevent deterioration of conservation status thanks to the "General measures Act (measures on the entire Natura 2000 network).
- Specific measures related to Management Units thanks to the "Catalog" Act.

Regarding the conservation objectives, they were set all at once:
- at the Walloon Region level (both quantitative and qualitative objectives in order to maintain or to increase habitats surfaces / species populations) ;

- at the site level (only qualitative objectives establishing the criteria to be taken into account when interpreting these objectives at the site level) (WG Act "Conservation Objectives").

Note:
Although most of the 240 Walloon sites in the Natura 2000 network are either entirely in the continental zone (194) or entirely in the Atlantic zone (39), some sites (7) are partly in the 2 biogeographical regions (BGR) and therefore have surfaces in the 2 BGR.

		Number of sites with:		
Sites of Community Importance (SCIs) under the EU Habitats Directive	**Number of sites**	**legal site designation (SAC or equivalent)**	**specific site level conservation objectives**	**specific site-level conservation measures**
ATL	5	5	5	5
CTL	7	7	7	7
Partly in ATL and partly in CTL	0	0	0	0
Total	**12**	**12**	**12**	**12**

		Number of sites with:		
Special Protection Areas (SPAs) under the EU Birds Directive	**Number of sites**	**legal site designation (SAC or equivalent)**	**specific site level conservation objectives**	**specific site-level conservation measures**
ATL	1	1	1	1
CTL	0	0	0	0
Partly in ATL and partly in CTL	0	0	0	0
Total	**1**	**1**	**1**	**1**

		Number of sites with:		
Sites both of Community Importance (SCIs) under the EU Habitats Directive and special Protection Areas (SPAs) under the EU Birds Directive	**Number of sites**	**legal site designation (SAC or equivalent)**	**specific site level conservation objectives**	**specific site-level conservation measures**
ATL	33	33	33	33
CTL	187	187	187	187
Partly in ATL and partly in CTL	7	7	7	7
Total	**227**	**227**	**227**	**227**

Further measures needed

No further measures needed

Prioritization of measures to be implemented during the next MFF period

NA

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

NA

Expected results

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. The management of the 240 designated sites is currently based on the following elements:
1. Legal protection
2. The rules of financial and fiscal compensation;
3. The 18 pilote sites management plans as part of Life BNIP;
4. The restoration and maintenance actions for habitats and habitats of species;
5. Legal and payment control and overall coordination of the process.

Indeed, the legal protection (1) based on precautionary conservation measures, preventing the degradation of the sites, habitats and species giving right to compensation (2) is probably insufficient to maintain or to improve the conservation status in several types of habitats or species habitats.
Aware of these limitations, the administration wanted to promote a voluntary approach favoring additional active site management measures.
Thanks, in particular to the resources made available through a Integrated Life project (BNIP), 18 site management plans (4) based on this new approach are being developed and will be implemented shortly (<2021).
The management measures involving the active collaboration of the managers and owners aim to develop actions of restoration and recurrent management (3) of the habitats and habitats of species on the sites.
Staff are also assigned to promote these measures but also to control legal measures, payment and compliance with compensation rules; as well as the general coordination (5) of the implementation operations (management, control, payment, monitoring ...) of the network.

1. The Legal protection

The following measures are specific to Natura 2000 and are currently applicable to Walloon sites:

- The General Measures of the walloon Government Order "General Measures":
Since January 13 2011, following an amendment to the Nature Conservation Law, a set of general measures apply to all selected sites.
The general conservation measures for Natura 2000 sites consist of a series of prohibitions and acts subject to authorization or notification. See the Order of the Walloon Government:
http://environnement.wallonie.be/legis/consnat/cons045.htm
Modalities:
With regard to the prohibition measures, derogations may, in certain cases, be granted.
For each request for derogation and authorization, an environmental impact assessment notice must be attached.
Appeals may also be adressed against a decision on a request for a derogation or authorization.

- The specific measures of the GW Act "Catalog":
These measures lay down the types of management units which may be delimited within a Natura 2000 site and the specific prohibitions and preventive measures applicable to them.
The GW Order "Catalog" lays down the types of management units which may be delimited within a Natura 2000 site and the specific prohibitions and preventive measures applicable to them.
UG 01 - Aquatic zones
UG 02 - Priority Opened areas
UG 03 - Grassland species habitats
UG 04 - Extensive bands
UG 05 - Liaison meadows
UG 06 - Priority Forests
UG 07 - Alluvial Priority Forests
UG 08 - Indigenous forests of great biological interest
UG 09 - Forest species habitats
UG 10 - Non-native liaison forests
UG 11 - Cropland and anthropogenic elements
UG S1 - Pearl and mussel
UG S2 - Butterfly “Euphydryas aurinia”
UG Temp 01 - Zones under protection status
UG Temp 02 - Publicly managed areas
UG Temp 03 - Indigenous forests with temporary status

2. The financial and fiscal compensation rules

The implementation of the Natura 2000 network requires the application of conservation measures that have a major objective: the preservation of natural environments and native wildlife species. However, this approach imposes management constraints on land managers.
The Walloon Government has decided to grant compensatory allowances proportionate to the loss of profits suffered and tax exemption measures such as a right of exemption on the following fiscal charges: real estate tax, inheritance tax, transfer by death, donation.
It is at this price that human activities and the protection of nature can be realized jointly.

3. Site management plans

The Integrated Project (Life BNIP) has set itself the goal of drafting 240 site management plans and implementing 18 of them as pilot projects. Management plans aim to optimize site contributions to regional conservation objectives.
The plans will promote a positive management of habitats and species through a voluntary approach t to complete the legal approach based on the principle of banning and authorization of acts with potential risk on habitats and/or species of Community interest. This new approach will be put in place by a local operator.

4. Restoration and maintenance actions for habitats and habitats of species

Before the emergence of management plans, voluntary restoration and maintenance actions on the sites and even outside the network were encouraged by subsidies. These actions when they take place in the sites will now be integrated into the approach of the management plan. The origin of the funds for these measures is a combination of the RDP, the AES, the Life Fund and the Walloon budget. The efficiency of these funding tools will be assessed in the framework of the further CAP (post 2020).

5. Legal and financial control, payment and overall coordination of the process.

These missions in Wallonia are mainly public administration (PSW ANRE).

Remarks:
• Agricultural and forestry allowances, as well as subsidies for the maintenance and restoration of habitats and habitats of species of Community interest, are supported by European co-financing via the wRDP 2014 - 2020 approved by the European Commission at the date of July 20, 2015.
• Other measures, although not specific to Natura 2000, not giving right to compensation, work globally to protect sites, such as :
- The Territorial Development Code
The Territorial Development Code (CoDT) came into force on 1 June 2017. It replaces the Walloon Code of Land Use Planning, Planning and Heritage (CWATUP). It installs new legislation that brings together all the rules applicable in terms of Spatial Planning.
- The Forest Code
In 2008, Wallonia adopted a new text that strengthens the economic, environmental, social, recreational and educational functions of its forest heritage.
- The Rural Code
National in scope, the rural code also formulates a series of peculiarities governing rural uses at the regional level.
- The Code of Agriculture
The Walloon Code of Agriculture constitutes the legal basis for agricultural policy and enables Wallonia to achieve the objectives it has set for its agriculture:
- Hunting and Fishing Laws
- The Water Code
- Measures implemented in the framework of the CAP 2014-2020 (Walloon Rural Development Program, Agro-Environmental Measures ...).

B. -The communication with the stakeholders was carried out from the beginning of the process of selection and designation of the sites.
The Natura 2000 Forum made up of representatives of farmers (FWA), landowners (NTF), environmental associations (IEW) and the Municipalities (UVCW) was involved in the negotiation process of the conservation measures and related compensation.
- Once the sites have been designated, the following stakeholders are periodically consulted in the context of site management (legal acts, restoration, derogations, etc ...) :
- The Natura 2000 Forum (see above)
- Natura 2000 Conservation Committee (8 Conservation committees for Natura 2000 sites (one by external directorate of the Department of Forests and Wildlife (WPS)) have been set up to ensure the conservation status of Natura 2000 sites. They are composed of the regional administration and representatives of the various local actors (representatives of councils, municipalities, environmentalists, landowners, farmers, fishermen, hunters, etc.).

These committees are responsible for submitting opinions in different cases: need of legal provisions, management and restoration of sites, contacts with land managers, etc. The conservation committee examines the impact of decisions on local socio-economic concerns.).
- The Rurality Pole/nature section (Expert Advisory Council)
- a contact is also established with the actors directly concerned in the daily management of the sites (owners, managers, operators, municipalities, fishermen, hunters, naturalists ...). These actors are the main beneficiaries of the communication and awareness actions to be undertaken at the site level.

Further measures needed

A. In terms of site management

In addition to the pool of existing measures which need to be continued during the next period, new measures are needed to guarantee the bases acquired during the designation of the sites and the efficiency of their management:
- Specific measures on IAS;

- Measures related to the habitats and species action plans developed under the Integrated Projet, Life BNIP;
- Measures related to the management plans of Natura 2000 sites developed under the Integrated Projet, Life BNIP;
- Measures developed under the post-2020 CAP 2021-2027 period including new RDP measures, adapted AES and new silvo-environmental measures/schemes (SES).
- Measures to be developed in order to protect and promote the management of habitats and species of community interest outside the Natura 2000 network based on a voluntary approach through active canvassing, contracting for measures, and in some cases land purchase…

B. In terms of communication with stakeholders

The implementation of action plans and management plans developed within the framework of the Integrated Projet, Life BNIP will involve communication actions with the stakeholders on the sites (management plans) and outside of them.
The intervention of actors specialized in communication about Natura 2000 such as CRIE Bérinzenne, Education Environnement ... is necessary for the accompaniment and the implementation of the management measures adapted to the habitats and species present on the sites and targeted primarily. The canvassing of restoration contracts on RDP funds must also be carried out by a dedicated operator (NATAGRIWAL).

Natagriwal is a non-profit organization funded by the Walloon Government whose main mission is to inform, advise and supervise farmers, foresters and public or private owners in the implementation of the agri-environmental program and the Natura 2000 European ecological network. Natagriwal includes agri-environment advisers (or "AES advisors") and "Natura 2000 advisers" whose activities cover the entire Walloon Region.

The identified measures focus on the operating costs of these structures related to their communication activities.

A very useful tool for communication with the general public in general and the actors of the Natura 2000 network in particular is the website http://biodiversite.wallonie.be. The consultation statistics show a great popularity as well as a wide variety of audiences. This site should be completely relifted, integrating the latest mobile developments and networks.

Prioritization of measures to be implemented during the next MFF period

All the measures listed in the previous point are important on the one hand for the achievement of objectives on the network and on the other hand for the expected benefits outside of it (action plans, AES, RDP, etc.).). They are all placed in the priorities for the period 2021-2027.

- Compensatory allowances : the objective is to compensate the lost of income and shortfall for producers and landowners in agriculture and forests. The WRDP 2007-2013 planned a total amount of 39 millions on 7 years. An actualization of this budget has been made: 42 millions so 6 millions a year.
- Tax exemption: all unbuilt lands in Natura 2000 are exempted from inheritance tax and property tax. The lost of income to be paid to municipalities due to this exemption is estimated to 2.5 millions/year and will be paid by the WG.
- IAS measures: specific new or existing measures for struggling against IAS are budgeted for 2 millions/year according to a Life project to be submitted. (See draft in preparation).
- External assistance for the implementation of management plans developed in the framework of the integrated project, Life BNIP: the BNIP project will gradually introduce the management plans for the 240 N2000 sites. The main task of this action will then be to contact owners and managers of the lands, make them aware of the different issues and objectives and propose

on a voluntary approach to make them subscribe to the implementation of management or restoration actions.This management will be done by local operators who will be contractualized. The budget is estimated at 25.000 €/site for a total of 6.000.0000 millions annually.

- Overall coordination of the process: this amount represents personal costs within Walloon public Service dedicated to the Natura 2000 process coordination.
- Technical support for Habitats and species of CI restoration (NATAGRIWAL): this amount is the share of the global subvention to Natagriwal dedicated to Nature restoration projects (i.e. wRDP).
- Communication and awareness with stakeholders (support of management & action plans established in the framework of the integrated project, Life BNIP) (See Action E7 and E8 in the BNIP document):
- Recasting of the site "biodiversite.be" and technical support

List of priority measures to be carried out and estimated costs of these measures

Name and short description of the measures	Type of measure*	Estimated cost in Euros (annualised)	Possible EU co-funding source
1. compensatory allowances	Existing measure to be continued Recurring	6 000 000 €	EARFRD…
2. Tax exemption	Existing measure to be continued Recurring	2 500 000 €	Walloon funding
3. New measures to be developed during the 2021-2027 CAP (RDP, AES, Sylvoenvironmental measures,...)	New Measure Recurring	See E.2 et measure 8 in the current table.	EARFRD, Life, SNAPs, Walloon funding …
4. IAS measures	New Measure Recurring	2 000 000 €	IAS regulation Life…
5. Management plans developed in the framework of the integrated project, Life BNIP	Existing measure to be continued One-off	See E.2	EARFRD, Life, SNAPs, Walloon funding …
6. External assistance for the implementation of management plans developed in the framework of the integrated project, Life BNIP	Existing measure to be continued Recurring	6 000 000 €	EARFRD, Life, SNAPs, Walloon funding …
7. Compensation for forest measures beyond legal regulation	Existing measure to be continued	See E.2	Walloon funding

8. Overall coordination of the process	Existing measure to be continued Recurring	1 200 000 €	Walloon funding
9. Technical support for Habitats and species of CI restoration (NATAGRIWAL)	Existing measure to be continued Recurring	800 000 €	Walloon funding
10. Communication and awareness with stakeholders (support of management & action plans established in the framework of the integrated project, Life BNIP) (Action E7 and E8)	Existing measure to be continued Recurring	150 000 €	EAFRD…
11. Recasting of the site "biodiversite.be" and technical support	New measure One-off	100 000 €	EAFRD, SNAPs or others?

* indicate whether the measure is recurring or one-off

Expected results

The combination of the continuation of the existing measures and the implementation of new measures should allow the maintenance of the conservative management on the network as well as the habitats and species prioritized outside the network.

In parallel with the application of these measures, two complementary approaches (legal and voluntary) will be combined to optimize the use of resources and to improve the conservation status of the habitats and species concerned.

Current legislation on Natura 2000 sites stems from a conservative approach aiming to prevent the deterioration of habitats and species of Community interest in the Natura 2000 sites. This legal basis is, in some cases (open habitats e.g.) not enough to ensure favourable conservation status of habitats and species at the regional level. First, because this legislation only applies within the network and because it is based on the principle of banning and authorization of acts with potential risk. As the objective is to promote a positive management of habitats and species, it is necessary that a new approach based on a voluntary process can be implemented.

Communication actions will be essential to create the dynamics necessary for the strategy of the voluntary approach, to improve the acceptance of legal measures and to promote the dissemination of information on regional biodiversity

E.1.3. Monitoring and reporting

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

The responsibility for monitoring and reporting devolves to the Public service of Wallonia (PSW).

Concerning species:

Since at least 2014, an overall amount of approximately € 575 000 has been invested on a recurring annual basis, in research and monitoring agreements targeting the following groups :

Amphibians : 30 000 €
Mammals : 140 000 €
Birds : 145 000 €
Bats : 44 000 €
Flora : 6 500 €
WFD Biological indicators: 52 000 €
Fish IC (Génétique) : 85 000 €
Reptiles : 47 000 €
Lépidoptera : 3 000 €
Dragonflies: 3 000 €

Concerning habitats:

The only part of Directorate of Nature and Water (DNE) budget appearing as a convention and dedicated to habitats monitoring goes to a support to Life Herbage activities: (28 000 € a year).
The general monitoring of habitats in Wallonia is carried out by DNE agents as a part of their traditional mission.

New resources were acquired under the Life BNIP project in which several habitat and species monitoring and detection actions are carried out by PSW.

Working groups were established and meet during workshops and in the field. The development of new methods are based on a literature review and best practices of other Member States. Working groups define for each species: periods suitable for monitoring, type of prospection (eg transect...), areas to explore, human effort to be made by monitoring cycle. These methods are field tested, reassessed and readjusted, particularly as concerns their cost, their effectiveness and their practicability.

DEMNA is also responsible for the definition of sampling methods for the assessment of structures and functions of non-agricultural open habitat types: number, size, shape of the plots, type of inventory and periodicity. Here too, working groups establish and base their work on the literature and on the exchange of experiences and best practices from other Member States.

The methodology for evaluating the structure and function of natural underground cavities are based on methods recently developed through other projects.

DEMNA and a subcontractor conduct the modelling of habitat types (based among others on abiotic data and LIDAR information). Field validation of the models are mainly supported by the DEMNA staff.

A monitoring committee composed of DEMNA staff is implemented to oversee all of the work associated with this group and to move towards the objectives, particularly in terms of efficiency of the developed tools and methods.

Further measures needed

The resources dedicated to the improvement of methods and reporting tools will have to be renewed after the end of the integrated project, Life BNIP (2021) with the aim of continuing their deployment in the field.

Additional resources in terms of staff and budget will be needed to maintain the level of follow-up of known groups and to improve the knowledge of groups that are less known.

In addition, the results of the current work will make it possible to identify new ways and the need for further studies and follow-up, which are essential for improving the quality of reporting.

It is already possible to point out the following needs:

- Measures to broaden and strengthen the monitoring of taxonomic groups (birds, aquatic species, flora ...)

- Monitoring studies of large predators returning to Wallonia

- Establishment of an indicator collection network for the establishment of habitat conservation status

- Improved data validation process

- Acquisition and / or depreciation of field encoding equipment

- Enhanced monitoring efforts on protected species, red list, heritage and / or indicator, triggering legal protection measures or a specific process of appropriate impact assessment.

- Establishment of methodologies for assessing changes in conservation status for the habitats and species that will be the subject of measures in this PAF (point E.2) and / or that could not be finalized in the framework of the integrated project, Life BNIP.

Prioritization of measures to be implemented during the next MFF period

The following measures may be considered as priorities for the period 2021-2027:

A. Strengthening of expert staff

• Strengthening staff to carry out monitoring and reporting work is a priority (5 FTE at the PSW ANRE): 300 000 € / year
• Strengthening expertise targeted at new species groups or improving knowledge and assessment of the conservation status of species' habitats for taxa already monitored will ensure a qualitative leap in biodiversity reporting.
This expertise could encompass:
- bats and amphibians habitats modelling
- photographic sampling collection method with pattern detection in amphibians
- development of a mobile solution for data logging on the field
- development of sonograms identification methods (bats and Orthoptera)
- elaboration of a semi-automatic validation system based on pictures
- 1 thesis on acoustic monitoring for bats
- 1 thesis on forest bats species (to test other swarming sites, to continue telemetering follow-ups in order to determine the breeding trees, to characterize the hunting territories...)
- Genetic studies to assess the dynamic of Bechstein populations: development of a genetic technique to understand the health of the Bechstein populations. A priori each colony is made up of related individuals (female group of the same family). By building up a database of genetic markers from samples taken from individuals captured in the field, it would probably be possible to determine the number of colonies (group of females) that gravitate around a swarming site in a forest site and on the

whole Walloon region. This material was developed by German researchers but as we have at hand the largest European grouping site known for this species we certainly have a card to play:
250.000 € / year
• Improvement of the validation process for different taxonomic groups (flora + other groups ...): external expertise and development of semi-automatic validation system (conventions and technical services) : 100 000 € / year

B. Species measures

• Studies of the population dynamics of wolf and lynx in Wallonia: 200 000 € / year
• Scientific studies on black grouse. Due to the particularly critical situation of the specie in Wallonia, it is important to identify the necessary means for monitoring population strengthening actions.
-Monitoring of released / translocated birds and their habitat use and follow up of certain "key" predators (foxes, crows nesting in Fagnes, goshawks and wild boars) in order to objectify the impact of predation by 4 target species: 380 000 € / year (staff costs, equipment and transport for monitoring tasks)
• Implementation of new methodologies developed under this PAF (see point E.1.4): water bodies, running water, birds (snipes): 250 000 € / year

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

Name and short description of the measures	Type of measure*	Estimated cost in Euros (annualised)	Possible EU co-funding source
Strengthening expertise targeted at new species groups or improving knowledge and assessment of the conservation status of species' habitats for taxa already monitored	recurring	1 000 000 €	EARFRD, Life, SNAPs, Walloon funding
Validation process for different taxonomic groups (flora)	recurring	100 000 €	EARFRD, Life, SNAPs, Walloon funding
Monitoring studies of large predators returning to Wallonia (Lynx, wolf)	recurring	200 000 €	EARFRD, Life, SNAPs, Walloon funding
Scientific studies on black grouse	One-off	220 000 €	EARFRD, Life, SNAPs, Walloon funding
Implementation of new methodologies	One-off	250 000 €	EARFRD, Life, SNAPs, Walloon funding

* indicate whether the measure is recurring or one-off

Expected results

The strengthening of monitoring methodologies should allow a more detailed and more objective follow-up of the indicators of the state of conservation.

The degree of reliability of the validated data will increase the credibility of the interpretations and allow for the construction of more robust modeling scenarios.

The quantitative and qualitative improvement of the data will make it possible to optimize management actions (management support tools).

E.1.4. Remaining knowledge gaps and research needs

Current status

Despite the resources allocated to the improvement of methods for detecting and determining the parameters of habitat structures and functions, a number of knowledge gaps remain, some of which are strategic.
Likewise for the species, choices must be made in the groups followed, certain groups or studies that are nevertheless relevant can not be undertaken because of lack of means. We are effectively in a context in which the scarcity of means oblige us to concentrate efforts and means on "mandatory groups" namely groups of species the monitoring for which a legal obligation exists. Some other groups could however bring valuable information on ecosystems status but are not targeted due to strategic choices, for example bees (Hymenoptera Apoidea), syrphids (Diptera syrphidae), longhorn beetles (Coleoptera Cerambycidae)...

Specifically for habitats: the focus should be on medium-term mapping of natural and semi-natural habitats outside the Natura 2000 network to identify issues to be integrated into the green infrastructure. In addition, the main shortcomings are in the methods of description and qualitative assessment of water bodies and in the fine knowledge of the ecological functioning of habitats such as peat bogs....

Specifically for species:

A. Birds
Regarding birds under Annex I or trigger species, there are some specific knowledge gaps that would be necessary to address via more research. For several of the more sensitive or declining species, the knowledge gap is related to the use of habitat in relationship to the breeding success. This is particularly the case for:

- Great Grey Shrike *Lanius excubitor*. The strong decline of this species is poorly understood so specific measure is difficult to delelop if the decline is to be stopped. Better knowledge of breeding success related to habitat use is needed.
- *Circus sp*. The need of food ressources enhancement through AES schemes needs to be better understood. This is possible of fine-grain habitat use is better understood.
- *Milvus sp*.: current status of both species is favourable but effect of new causes of mortality like windfarm development and large-scale change in the habitat (like grassland management) needs to be understood.
- *Saxicola rubetra*: this critically endangered species needs to be monitored closely in order to better focus the AES scheme specifically addressing the conservation statuts of this species

B. Other

Significant deficits in knowledge are identified on saproxylic forest species (Coleoptera, syrphids, fungi ...). A better knowledge on how these groups would make it possible to refine the understanding of forest dynamics and thus improve the assessment of the conservation status of forest habitats.

Further measures needed

The development of descriptive and evaluative methods through technical expertise and field work + implementation of new methodologies (see E1.3).

Prioritization of measures to be implemented during the next MFF period (see related costs in the table below)

The main bottlenecks in the field of knowledge identified as priorities for the period 2021-2027 are:
- the establishment of a typology of water bodies based on actual and not theoretical surveys of vegetation
- the development of a methodology for assessing the conservation status of stagnant aquatic habitats
- establishment of measures to improve the state of conservation of stagnant water species
- a comparative study between the assessments of the conservation status of habitats and aquatic species according to the 2 Directives (Habitats and Water Framework)
- establishment of measures to be taken to improve the state of conservation of running water species
- specific studies on birdlife:

The 4 species where this question should be addressed in priority due to their status in Europe or the responsibility of Wallonia regarding these species are Great Grey Shrike, Circus cyaneus, Milvus milvus: monitoring of breeding success in core area, combined with high-resolution study of habitat use, thanks to GPS technology.
+ Saxicola rubetra: continuous monitoring on breeding success and effect of species measures
+ Gallinago gallinago and Lymnocryptes minimus: targeted surveys in some under-surveyed areas, typically halting and wintering sites.
- studies on saproxylic forest species (Coleoptera, syrphids, fungi ...)
- specific studies on certain habitats:

Peatland scientific studies
+Study of the hydrodynamic functioning of restored peat bogs
+Study of the carbon footprint of restored peatlands in comparison with that of intact and degraded peatlands
+Study of the balance of atmospheric mineral depositions of restored peatlands in comparison with that of intact and degraded peatlands

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

Name and short description of the measures	Type of measure*	Estimated cost in Euros (annualised)	Possible EU co-funding source
Establishment of a typology of water bodies based on actual and not theoretical surveys of vegetation	one-off	25 000 €	
Development of a methodology for assessing the conservation status of stagnant aquatic habitats	one-off	25 000 €	
Establishment of measures to improve the state of conservation of stagnant water species	one-off	35 000 €	
Comparative study between the assessments of the conservation status of habitats and aquatic species according to the 2 Directives (Habitats and Water Framework)	one-off	8 000 €	

Establishment of measures to improve the state of conservation of stagnant water species	one-off	15 000 €	
establishment of measures to be taken to improve the state of conservation of running water species	one-off	15 000 €	
specific studies on birdlife	one-off	132 000 €	
studies on saproxylic forest species (Coleoptera, syrphids, fungi ...)	one-off	15 000 €	
specific studies on certain habitats: Peatland scientific studies	one-off	220 000 €	

* indicate whether the measure is recurring or one-off

Expected results

For all species: exact definition of habitat needs and detailed recommendation on how to enhance habitat quality to ensure or increase breeding success in core breeding areas in Wallonia.

For habitats: much more consistent assessments based on objectification

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

Current status

The current communication around Natura 2000 is focus on owners and managers active in Natura 2000 areas.

All owners of a parcel in Natura 2000 have been informed by SPW of their rights and obligations facing Natura 2000.

The LIFE BNIP project is developing Natura 2000 MP and will implement it in 18 pilot sites. In these pilot sites, communication will be taken in charge by the integrated project, Life BNIP. A general communication campaign is ongoing in order to inform the different stakeholders of the designing of the Natura 2000 management plans (MP) and their potential involvement.

The integrated project, Life BNIP is in charge of the realization of 23 action plans (AP) for Natura 2000 habitat and species, designing actions on the whole territory of the Walloon region. The implementation of the AP is accompanied by general communication measures about this AP. The communication campaign is targeting stakeholders as well as the general public. The AP is a dynamic tool to communicate about the regional strategy concerning a particular species or habitat.

The integrated project, Life BNIP is organizing each year since 2017 the Natura 2000-Day in May, as suggested by EC.

The BNIP is organizing general awareness rising campaign inside the different services of the Public Service of Wallonia (PSW).

In agricultural areas, Natagriwal is offering support to landowners and farmers to respect all obligations linked to the Natura 2000 legislation and are giving all needed advices in order to subscribe to AES.

Natagriwal is also giving support to landowners (private & public) in the participation to the RDP.

Through an annual subvention, PSW has the support of the NGO Berinzenne, which is giving support to the administration in the area of large audience communication and vulgarisation. Several project have been proposed by Berinzenne such as the creation of popular website, but also the setting up of a collaboration with the ADEPS, a parastatal association in charge of the promotion of sport in general, and more particular in nature. Berinzenne produced in 2017 description leaflets for marked walks in different Natura 200 sites on the whole territory of the Wallonia. These aspects are negotiated with the owners. The private ownership status is conserved, the access is only permitted if the owner agree..

Further measures needed

Communication around Natura 2000 should be organized at several levels:

1. Communication at the regional level to the general public: general awareness rising is necessary towards general public. Main goal should be to inform the citizens of the existence of the large scale N2000 network, the Natura 2000 network should be perceived by the public as a part of the solution to the general biodiversity erosion and climate changes.

2. Communication to real estate project promoters and developers: Communication toward project developers should be initiated by the administration in order to inform the developers and promoters of the legal constrains inertial to every project likely to have an impact on a Natura 2000 site, species or habitat. An action plan should be designed for every species and habitat in Wallonia, and every potential project developer should be aware of the potential impact risks, but also of potential mitigation measure or integration measures in order to enhance resilience between economical development and Natura 2000 improvement.

3. Communication at the municipality level: in every municipality, inhabitants should be aware of the existence of the local Natura 2000 sites. Communication through the municipalities should be organized in order to inform every citizens of a municipality of the existence of Natura 2000 sites in the own town.

4. Communication at the Natura 2000 site level: a visitor access should be installed in at least one N2000 site in each municipality. The visitor access of at least one site per municipality should at include information panels at different site entrance presenting the Natura 2000 network in EU, presenting the Natura 2000 site and the fauna and flora present.

5. Natura 2000 Day: SPW will organize a yearly event in order to improve general awareness of Natura 2000.

6. Communication in the framework of Natura 2000 MP and habitat and species AP should be continued

7. Communication towards ADEPS and other nature-oriented sport organisation in order to highlight Natura 2000

8. Awareness rising within other services of different administration levels

9. Communication about restoration possibilities: RDP

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

Name and short description of the measures	Type of measure*	Estimated cost in Euros (annualised)	Possible EU co-funding source
General awareness rising at regional level, communication campaign	Recurring	50 000 €	
Real estate and promoter sensitization, Workshop & seminars	Recurring	20 000 €	
Municipality level large audience communication	Recurring	1 310 000 €	
Communication at the Natura 2000 site level : visitor access and information	One-off	1 200 000 €	
Natura 2000-Day	Recurring	20 000 €	
Natura 2000 MP and species & habitat AP	Recurring	50 000 €	
Awareness rising within other services of different administration levels	recurring	15 000 €	
Nature-oriented sport organisation	recurring	30 000 €	

* indicate whether the measure is recurring or one-off

Expected results

General better knowledge of the existence of Natura 2000 by the public;

A positive image of Natura 2000 as part of the solution to the current biodiversity loss

Identification by the public of Natura 2000 as a potential recreative trip destination

Taking into account of Natura 2000 in real estate projects and planning

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

General references have been taken out of the integrated project, Life BNIP which is ongoing from 2015 to 2021.

Other cost estimations have been done by projections on the basis of current project ongoing at PSW

http://biodiversite.wallonie.be/fr/accueil.html?IDC=6

https://agriculture.wallonie.be/programme-wallon-de-developpement-rural-2014-2020//

http://environnement.wallonie.be/legis/consnat/cons001.htm

http://environnement.wallonie.be/legis/consnat/natura161.html

http://environnement.wallonie.be/legis/consnat/natura162.html

http://environnement.wallonie.be/legis/consnat/cons045.htm

http://environnement.wallonie.be/legis/consnat/natura019.htm

http://environnement.wallonie.be/legis/consnat/natura075.html

http://life-bnip.be/fr/

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

E.2.1. Marine and coastal waters

Not applicable.

E.2.2. Heathlands and shrubs

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

Annex I heathlands and shrubs

Amongst the heathlands and shrubs habitat types listed in Annex 1 of the Habitats Directive occurring in Wallonia, 3 are depending on an active management through agricultural or other practises (e.g. grazing or mowing). These are:

- *Wet heaths (4010)*
- *Dry heaths (4030)*
- *Juniperus communities (5130)*

These 3 habitats are reported as being currently in an unfavourable conservation status. In the most recent available report on the conservation of habitats and species under Habitats Directive ("Article 17 report" of 2013), the "Structures and functions" criterion for these 3 habitat types has been assessed as bad (U2), indicating that additional efforts will be required to optimize their management regime, at least in some of the areas currently covered by these habitats.

Furthermore, the total area coverage is currently deemed insufficient (based on the "area" criterion in the Article 17 report) for heathlands in the Atlantic region, meaning that additional measures will be required to restore these habitats and re-instate a management regime compatible with their ecological requirements on areas that are currently subject to abandonment or other land uses (mainly as wooded areas). The area coverage has also been deemed insufficient for *Juniperus* formations in the Continental region.

Previous measures taken for these habitats include agri-environment schemes and non-productive investments under the regional Rural Development Programme, as well as several LIFE-Nature projects targeting the restoration of these habitats, e.g. in military camps, in high plateaus and in the Atlantic region (BNIP). These measures have already increased the surface of heathlands and *Juniperus* formations within the Natura 2000 network in the Continental region, but additional measures will be needed to reach favourable conservation status, mainly to improve their structures and functions. Furthermore, in the Atlantic region, surfaces remain largely insufficient and restoration of surfaces is a priority in order to reach a better status of both surface area and structures and functions.

Annex II, IV and V species having a substantial share of their habitat in heathlands

In Wallonia, the following annex II, IV and V species have all or a substantial share of their habitat in heathlands.

Plant species:

- *Arnica montana*
- *Lycopodiaceae*
- *Cladonia* subgen. *Cladina*

- *Sphagnum* sp.

Butterfly species:

- *Euphydryas aurinia*

Amphibian and reptile species:

- *Lacerta agilis*
- *Coronella austriaca*
- *Pelophylax lessonae*

In Wallonia, range is considered unfavourable for *Cladina*, for *Euphydryas aurinia* in the Continental region, for *Lycopodiacea* and *Coronella austriaca* in the Atlantic Region. Population is unfavourable for most of the species, in particular for *Coronella austriaca*, *Euphydrias aurinia* and *Lacerta agilis* and it is unknown for Pelophylax lessonae due to difficulties of species identification with *P. esculenta.*

Indeed, species have undergone substantial population declines and a reduction of their range over the last decades, mainly as a result of loss and fragmentation of suitable habitats. Measures undertaken for the management of heathlands as described above are considered as beneficial for the species and are responsible for some of the positive trends that have been observed.

Bird species breeding in heathlands

In Wallonia, 9 bird species (listed in Annex I of the Birds Directive or considered as trigger species for SPA designation) have regular breeding populations in heathlands. These are:

- *Caprimulgus europaeus*
- *Circus cyaneus*
- *Gallinago gallinago*
- *Jynx torquilla*
- *Lullula arborea*
- *Lanius excubitor*
- *Pluvialis apricaria*
- *Saxicola rubetra*
- *Tetrao tetrix*

In Wallonia, 5 species *(Tetrao tetrix, Gallinago gallinago, C. europaeus, S.rubetra & L excubitor)* have undergone substantial population declines and a reduction of their breeding range over the last decades, mainly as a result of loss and fragmentation of suitable breeding habitats.

Pluvialis apricaria is an irregular breeding species on the Southern limit of its global distribution.

The other 3 species are not declining but are still very rare and with fragile breeding populations. Restoration of heathlands through LIFE Project already helped to maintain and/or increase available habitat but further restoration is still necessary, along with tackling other threat such as artificially high density of wild boar that damage ground breeders.

Measures needed to maintain or restore favourable conservation status

Maintenance needs:

1. Active management measures are required to ensure maintenance, avoid deterioration and, for a huge share of the surface, progressively lead to an improvement of structures and functions of the

following areas covered by Annex I heathlands and shrubs (all figures below are based on information reported under Article 17 habitats Directive of 2013 or best expert judgement since last reporting):

- ***Dry heathlands*** (HT 4030): 2050 ha in Continental Region of which 1750 ha in Natura 2000 sites, 47 ha in Atlantic Region
- ***Wet heathlands*** (HT 4010): 3000 ha in Continental region of which 2700 ha in Natura 2000, 14 ha in Atlantic Region.
- ***Juniperus formations*** (HT 5130): 5 ha existing and 5 ha under creation in Continental region (mainly in the Natura 2000 network)

Despite previous and current restoration actions and as heatlands cover large surface, a large share of these habitats is still in a degraded condition, dominated by *Molinia*, *Pteridium*, shrubs, and social graminoids, so maintenance needs are very close to heavy restoration actions (e.g. sod-cutting, removal of trees and shrubs) in many sites.

This management will also contribute to population maintenance and/or progressively achieve population increases of heathland species.

Creation needs:

1. Re-creation of surfaces is a priority to improve the surface area parameter of the conservation status of the following habitats:

- ***Wet heathlands*** (HT 4010): 100 ha in the Continental Region and 15 hectares in the Atlantic Region, of which 75 ha (Cont.) and 5 ha (Atl.) in the Natura 2000 network
- ***Dry heathlands*** (HT 4030): 200 ha in the Continental Region and 150 hectares in the Atlantic Region, of which 150 (Cont.) and 120 ha (Atl.) in the Natura 2000 network
- ***Juniperus formations*** (HT 5130): 20 hectares in the Continental Region, mainly in the Natura 2000 network

Furthermore, in the Continental Region, for connectivity reasons, the restoration of 200 ha of dry heathlands, and 100 ha of wet heathlands is still necessary.

If the restoration and maintenance of above-mentioned habitats are completed, no particular measures will be needed in heathlands and shrubs for annex 2, 4 and 5 species and for bird species.

Prioritization of measures to be implemented during the next MFF period

Heavy restoration should take place on the following surfaces during the next MFF period in order to ensure maintenance of existing surfaces and obtain a sensible improvement of conservation status (structures and functions and surface area) of the heathlands and shrubs:

- **Wet heathlands (4010):** 115 ha to be created, of which 80 ha in Natura 2000 sites; 614 ha of highly degraded existing surfaces needing heavy restoration, of which 550 ha in Natura 2000 sites → **total area to be restored = 729 ha of which 630 ha in Natura 2000 sites**
- **Dry heathlands (4030):** 350 ha to be created, of which 270 ha in Natura 2000 sites; 457 ha of highly degraded existing surfaces needing heavy restoration, of which 387 ha in Natura 2000 sites → **total area to be restored = 807 ha of which 657 ha in Natura 2000 sites**
- **Juniperus formations (5130): 20 ha to be created, totally in Natura 2000 sites**

All restored surfaces will also need to be fenced before starting the management, and a budget must be foreseen for the purchase/compensation of newly created surfaces both on private and public.

Furthermore, **recurrent management** will be needed. The assessment of needs for the next MFF period is:

- ***Wet heathlands (4010):*** The management by grazing, mowing and/or shrub removal in 1000 ha of existing surfaces and half of the surfaces under heavy restoration (due to the progressive implementation, so the counted surfaces are divided by 2 → 729/2 = 364)= **1364 ha of which 1218 ha in Natura 2000 sites**
- ***Dry heathlands (4030):*** The management by grazing, mowing and/or shrub removal in 684 ha of existing surfaces and half of the surfaces under heavy restoration (due to the progressive implementation, so the counted surfaces are divided by 2 → 807/2 = 403) = **1087 ha of which 924 ha in Natura 2000 sites**
- ***Juniperus*** **formations (5130):** The management (mainly selective shrub control) in all existing surfaces (10 ha) and half of the surfaces under heavy restoration (due to the progressive implementation, so the counted surfaces are divided by 2 → 20/2 = 10) = **20 ha totally in Natura 2000 sites**

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 (nb of ha)	Estimated cost in Euros (annualised)	Possible EU co-funding source
Restoration of wet heatlands (HT 4010) (creation of new surfaces and heavy restoration in degraded existing surfaces : sod-cutting, trees and shrubs suppression…) *average cost per ha : 5000 €*	One-off	630	450000	
Restoration of dry heatlands (HT 4030) (creation of new surfaces and heavy restoration in degraded existing surfaces : sod-cutting, trees and shrubs suppression…) *average cost per ha : 5000 €*	One-off	657	469286	
Restoration of Juniperus formations (HT 5130) (creation of new surfaces by plants production and introduction in restored areas) *average cost per ha: 3000 €*	One-off	20	8571	
Land acquisition and/or compensation to landowners for the creation of wet heathlands (HT 4010) *average cost per ha: 10 000 €*	One-off	80	114286	
Land acquisition and/or compensation to landowners for the creation of dry heathlands (HT 4030) *average cost per ha: 10 000 €*	One-off	270	385714	
Fencing of restored surfaces of wet heathlands (HT 4010) *average cost per ha: 4000 €*	One-off	630	360000	

Fencing of restored surfaces of dry heathlands (HT 4030) *average cost per ha: 4000 €*	One-off	657	375429	
Agri-environmental schemes for recurring management of wet heathlands (4010) (grazing and/or mowing) *average cost/ha/year: 250 €*	Recurring	1218	304583	
Agri-environmental schemes for recurring management of dry heathlands (4010) (grazing and/or mowing) *average cost/ha/year: 250 €*	Recurring	924	231042	
Indemnities related to measures in Natura 2000 sites - linked to wet heathlands (4010) *average cost/ha/year: 440 €*	Recurring	1218	536067	
Indemnities related to measures in Natura 2000 sites - linked to dry heathlands (4010) *average cost/ha/year: 440 €*	Recurring	924	406633	
Complementary funds needed to cover the cost of the recurrent management of wet heathlands (4010), incl. shrub removal *average cost/ha/year: 110 €*	Recurring	1218	134017	
Complementary funds needed to cover the cost of the recurrent management of dry heathlands (4010), incl. shrub removal *average cost/ha/year: 110 €*	Recurring	924	101658	
Recurrent management of Juniperus formations (HT 5130) (shrub control) *average cost per ha and per year: 1000 €*	Recurring	20	20000	
TOTAL			3897286	

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

Name and short description of the measures	**Type of measure***	**Target (nb of ha)**	**Estimated cost in Euros (annualised)**	**Possible EU co-funding source**
Restoration of wet heatlands (HT 4010) (creation of new surfaces and heavy restoration in degraded existing surfaces : sod-cutting, trees and shrubs suppression…) *average cost per ha : 4000 €*	One-off	99	56571	
Restoration of dry heatlands (HT 4030) (creation of new surfaces and heavy restoration in degraded existing surfaces : sod-cutting, trees and shrubs suppression…) *average cost per ha : 4000 €*	One-off	150	85714	
Land acquisition and/or compensation to landowners for the creation of wet heathlands (HT 4010) *average cost per ha: 10 000 €*	One-off	35	50000	

Land acquisition and/or compensation to landowners for the creation of dry heathlands (HT 4030) *average cost per ha: 10 000 €*	One-off	80	114286	
Fencing of restored surfaces of wet heathlands (HT 4010) *average cost per ha: 4000 €*	One-off	99	56571	
Fencing of restored surfaces of dry heathlands (HT 4030) *average cost per ha: 4000 €*	One-off	150	85714	
Agri-environmental schemes for recurring management of wet heathlands (4010) (grazing and/or mowing) *average cost/ha/year: 250 €*	Recurring	146	36542	
Agri-environmental schemes for recurring management of dry heathlands (4010) (grazing and/or mowing) *average cost/ha/year: 250 €*	Recurring	163	40667	
Complementary funds needed to cover the cost of the recurrent management of wet heathlands (4010), incl. shrub removal *average cost/ha/year: 110 €*	Recurring	146	16078	
Complementary funds needed to cover the cost of the recurrent management of dry heathlands (4010), incl. shrub removal *average cost/ha/year: 110 €*	Recurring	163	17893	
TOTAL			560037	

Expected results for targeted species and habitat types

A full implementation of the prioritized restoration measures targeting the 3 habitat types is expected to lead to a substantial increase in their total area, thereby leading to a measurable positive trend in the conservation status of these habitats by 2028.

The full implementation of the above restoration and management measures targeting a substantial share or (for *Juniperus* formations) the totality of existing surfaces will also help ensuring that targeted surfaces will not suffer any further deterioration but also reach improvement of their structures and functions – improvement that will already be detectable in 2028 but will be more substantial on a longer term due to the time needed for a full restoration of all structures and functions parameters of the habitat types (incl. favourable class ages structures of shrubs and re-colonisation of typical species).

If fully implemented, these measures will also help ensuring at least maintenance and probably an increase of the population of species only or significantly related to heathlands (such as *Arnica montana, Cladonia* subgen. *Cladina,* some *Lycopodiaceae, Lacerta agilis...)*

For most of the species (incl. birds and reptiles), also present in different habitat types (grasslands, peatlands, forests...), heathland measures would contribute to improvement of conservation status but must be combined with measures mentioned in other sections of this document (E.2.X and E.3). For species like *Caprimulgus europaeus* and *Lanius excubitor*, subject to substantial decrease of their population, restoration measure of heathlands are urgently needed and must be combined with other measures related to neighbouring E.2.X and E.3 habitat.

E.2.3. Bogs, mires, fens and other wetlands

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

Annex I bogs, mires, fens and other wetlands

Amongst the bogs, mires, fens and other wetlands habitat types listed in Annex 1 of the Habitats Directive occurring in Wallonia, 5 are depending on an active management and/or restoration. These are:

- *Active (7110*) and degraded (7120) raised bogs*
- *Transition mires and quaking bogs (7140)*
- *Depressions on peat substrates of the Rhynchosporion (7150)*
- *Alkaline fens (7230)*

All these habitats are reported as being currently in an unfavourable conservation status. In the most recent available report on the conservation of habitats and species under Habitats Directive ("Article 17 report" of 2013), the "Structures and functions" criterion for these 3 habitat types has been assessed as bad (U2), indicating that additional efforts will be required to optimize their management regime, in most of the areas currently covered by these habitats.

Furthermore, the total area coverage is currently deemed insufficient (based on the "area" criterion in the Article 17 report) for all habitats (except 7120 which is a degraded variant of raised bogs), meaning that additional measures will be required to restore these habitats and re-instate their ecological requirements on areas that have previously been degraded by human activities (drainage and other water abstraction, spruce and poplar plantations, eutrophication, peat extraction...).

Previous measures taken for these habitats include agri-environment schemes (7230) and non-productive investments under the regional Rural Development Programme, as well as several LIFE-Nature projects targeting their restoration, mainly on high plateaus and in the Belgian Lorraine. Due to the duration needed for the recovery of the natural functioning and dynamics of these habitats (especially 7110), surfaces have not raised significantly but trends are positive. Additional measures are still needed to reach favourable conservation status, both to increase the surfaces and to improve the structures and functions.

Annex II, IV and V species having a substantial share of their habitat in heathlands

In Wallonia, the following annex II, IV and V species have all or a substantial share of their habitat in bogs, mires, fens and other wetlands.

Plant species:

- *Lycopodiaceae*
- *Sphagnum* sp.
- *Hamatocaulis vernicosus*

Mollusc species:

- *Vertigo moulinsiana*

Butterfly species:

- Lycaena dispar

Dragonfly species:

- *Leucorrhina pectoralis*
- *Leucorrhina caudalis*

Amphibian species:

- *Pelophylax lessonae*

In Wallonia, population is unfavourable for most of the above-mentioned species. They have indeed undergone substantial population declines and a reduction of their range over the last decades, mainly as a result of loss and fragmentation of suitable habitats. Habitats restoration and management described above are considered as beneficial for the species and measures taken already are responsible for some positive trends (e.g. for dragonflies), but additional measures will be needed in line with regional conservation objectives. In particular, *Vertigo moulinsiana* is mainly present in non-annex I habitats.

Bird species breeding or staging in bogs, mires, fens and other wetlands

In Wallonia, 6 bird species (listed in Annex I of the Birds Directive or considered as trigger species for SPA designation) have regular breeding populations or regular staging areas in bogs, mires, fens and other wetlands. These are:

- *Anas crecca*
- *Asio flammeus*
- *Gallinago gallinago*
- *Grus grus*
- *Pluvialis apricaria*
- *Tetrao tetrix*

3 of these species *(A. crecca, G. gallinago* and *T. tetrix)* have undergone substantial population declines and a reduction of their breeding range in Wallonia over the last decades, mainly as a result of loss and fragmentation of suitable breeding habitats. The other 3 species are irregular breeders or not even officially established (*G. grus*) but could benefit from restoration measures.

Restoration of bogs and mires through LIFE projects already helped to maintain and/or increase available habitat but further restoration is still necessary, along with tackling other threat such as artificially high density of wild boar that damage ground breeders. For *T. tetrix*, population reinforcement is needed to maintain a breeding population in Wallonia (see E.3). For *A. crecca*, restoration of bogs and mires have been successful in the Hautes-Fagnes Natura 2000 areas and should be continued.

Measures needed to maintain or restore favourable conservation status

Maintenance needs:

Conservation and/or management measures are required to ensure maintenance, avoid deterioration and, for a huge share of the surface, progressively lead to an improvement of structures and functions of the following areas covered by Annex I wetlands (all figures below are based on information reported under Article 17 habitats Directive of 2013 or best expert judgement since last reporting):

- ***Active raised bogs (7110*):*** **110 ha totally included in the Natura 2000 network**
- ***Transition mires and quaking bogs (7140):*** **85 ha** of which **70-80 ha in Natura 2000 sites**
- ***Depressions on peat substrates of the Rhynchosporion (7150):*** **1,3 ha totally included in the Natura 2000 network**

- ***Alkaline fens (7230):*** **25 ha totally included in the Natura 2000 network**

Despite previous and current restoration actions and due to inertia in restoration of natural dynamics, a large share of these habitats is still in a degraded condition, dominated by *Molinia*, shrubs, and social graminoids... so maintenance of existing surfaces needs in some cases heavy restoration actions (e.g. sod-cutting, removal of trees and shrubs and hydrologic restoration).

Re-creation needs:

1. Re-creation of surfaces is a priority to improve the surface area parameter of the conservation status of the following habitats:

- ***Active raised bogs (7110*), totally from heavy restoration of degraded raised bogs (7120):*** creation of 150 ha, totally included in the Natura 2000 network. Restoration consists in flooding, scraping, creation of ponds, shrubs and trees removal, and production and reintroduction of typical plant species. The first steps of these restoration will not lead directly to habitat type 7110 but to acidophilous fens (non-annex I habitat) + transition mires and quaking bogs (7140) + *Rhynchosporion* (7150) + dystrophic ponds (3160)
- ***Depressions on peat substrates of the Rhynchosporion (7150):*** in Continental region: linked to restoration of habitat 7110 and wet heathlands (4010). In Atlantic Region: 0.5 ha, totally included in the Natura 2000 network and restored through habitat 4010 restoration (cf. E.2.2).
- ***Alkaline fens (7230):*** 75 ha totally included in the Natura 2000 network. Restoration consists mainly in sod-cutting, shrubs and trees removal, and production and reintroduction of typical plant species.
- ***Creation of forest edges favourable to Tetrao tetrix:*** 150 ha totally included in the Natura 2000 network.

2. If the restoration and maintenance of above-mentioned habitats and forest edges are completed, no additional measures will be needed (in bogs and fens of community interest) for most of annex 2, 4 and 5 species and for bird species, except population reinforcement for *Tetrao tetrix* (see section E3)

Nevertheless, some restoration of non-annex I wetland areas may be required to ensure population maintenance and/or progressively achieving population increases of *Vertigo moulinsiana*, but preliminary studies on this species and its distribution in Wallonia need to be conducted first. These restorations are thus not considered a priority for next MFF period.

Prioritization of measures to be implemented during the next MFF period

All restoration actions mentioned above for annex I habitats and for *Tetrao tetrix* are considered priorities during the next MFF period. They would **all** take place **inside the Natura 2000 network.** They would thus consist in:

- **Heavy restoration works** for the creation of:
    - **150 ha** of habitat **7110**
    - **75 ha** of habitat **7230**
    - **150 ha** of forest edges for ***Tetrao tetrix***

Furthermore, recurrent active management will be needed for:

- **Alkaline fens (7230):** 25 ha of existing habitat and half (due to the progressive implementation, so the counted surfaces are divided by 2) of the 75 ha to be created **= 62.5 ha totally inside the Natura 2000 network**

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 (nb of ha)	Estimated cost in Euros (annualised)	Possible EU co-funding source
Restoration of peatlands (HT 7110 = target but these actions will first lead to the creation of habitats 7140 and 7150) (creation of new surfaces by flooding, scraping, creation of ponds and shrubs and tree removals and production and reintroduction of typical plant species) *average cost per ha : 20000 €*	One-off	150	428571	
Restoration of alkaline fens (HT 7230) (creation of new surfaces by heavy restoration works, including sod-cutting, shrubs and tree removals and production and reintroduction of typical plant species) *average cost per ha: 20000 €*	One-off	75	214286	
Purchase of privately-owned land for the restoration of alkaline fens (HT 7230) *average cost per ha: 10000 €*	One-off	25	35714	
Recurrent management of alkaline fens (HT 7230) (mainly mowing and shrub removal) on a share of existing and newly created surfaces *average cost per ha and per year: 1000 €*	Recurrent	62.5	62500	
Creation of forest edges favourable to Tetrao tetrix *average cost per ha: 2000 €*	One-off	150	42857	
TOTAL			783929 €	

Expected results for targeted species and habitat types

A full implementation of the prioritized restoration and management measures targeting these habitat types is expected to lead to a substantial increase in the total area and an improvement of structures and functions of habitat types 7140 (transition mires), 7150 (*Rhynchosporion*), 7230 (alkaline fens) and 3160 (dystrophic ponds), thereby leading to a measurable positive trend in the conservation status of these habitats by 2028. Re-creation of habitat type 7110 takes a much longer time and will come from the natural evolution of restored habitat types 3160 and 7140. By 2028, the improvement of this habitat would thus more consist in an improvement of its future prospects' parameter than in a direct substantial increase of its surface.

If fully implemented, these measures will also help ensuring at least maintenance and probably an increase of the population of some species only or significantly related to bogs, mires and fens and dystrophic ponds, such as *Lycopodiella inundata, Sphagnum sp. and Leucorrhina pectoralis.*

Measures foreseen specifically for the improvement of the habitat of *Tetrao tetrix,* combined with population reinforcement (see E.3) are needed to avoid extinction of the species. Foreseen restoration actions are also needed to avoid exctinction of *Gallinago gallinago* and sustain the small breeding population of *Anas crecca*.

For the other species, also present in different habitat types (grasslands, heathlands, forests...), measures foreseen in this section would contribute to an improvement of their conservation status if combined with the measures mentioned in other sections of this document (E.2.X and E.3).

E.2.4. Grasslands

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

Annex I grasslands

Amongst the grasslands habitat types listed in Annex 1 of the Habitats Directive occurring in Wallonia, all of them are depending on an active management through agricultural or other practises (grazing or mowing). These are:

- *Rupicolous calcareous or basophilic grasslands of the Alysso-Sedion albi (6110*)*
- *Xeric sand calcareous grasslands (6120)*
- *Calaminarian grasslands of the Violetalia calaminariae (6130)*
- *Semi-natural dyr grasslands and scrubland facies on calcareous substrates (6210(*))*
- *Species-rich Nardus grasslands (6230*)*
- *Molinia meadows on calcareous, peaty or clayey-silt-laden soils (6410)*
- *Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels (6430)*
- *Lowland hay meadows (6510)*
- *Mountain hay medows (6520)*

These habitats are all reported as being currently in a bad conservation status, except tall herb communities (6430) in the Continental Region (inadequate status). In the most recent available report on the conservation of habitats and species under Habitats Directive ("Article 17 report" of 2013), most of the time, both "Structures and functions" and surface criteria are bad for these habitat types.

For agricultural grasslands (habitats 6410, 6510, 6520), main pressures are intensive grazing and mowing, fertilization and ploughing, and even urbanization. For hay meadows particularly and despite successful restoration through Life and RDP projects, trends are negative, due to the fact that these habitats are widespread on the territory, incl. a large share outside the Natura 2000 network.

For other grassland types, most of the surfaces are included in the Natura 2000 network outside classical agricultural land. Pressures and threats can still include intensive agriculture, but on most of the surfaces they consist in abandonment and its consequences (development of trees, shrubs, social graminoids, invasive alien species...)

Previous measures taken for these habitats include agri-environment schemes, that play an essential role in their maintenance and management. Non-productive investments under the regional Rural Development Programme, as well as several LIFE-Nature projects targeting the restoration are also very important for those habitats. These measures have already raised the surface of most non-agricultural habitats, but surfaces are still insufficient and, for hay meadows, the trends remain negative as mentioned above.

Thus, additional measures will be needed to meet the regional conservation objectives, both to increase surfaces and connectivity and to improve their structures and functions.

Annex II, IV and V species having a substantial share of their habitat in grasslands

In Wallonia, the following annex II, IV and V species have all or a substantial share of their habitat in grasslands habitats.

Plant species:

- *Arnica montana*

Butterfly species:

- *Eriogaster catax*
- *Euphydryas aurinia*
- *Lycaena dispar*
- *Lycaena helle*
- *Maculinea arion*

Beetle species:

- *Lucanus cervus*

Amphibian and reptile species:

- *Coronella austriaca*
- *Podarcis muralis*
- *Triturus cristatus*

Most of bat species:

- *Rhinolophus spp.*
- *Myotis spp.*
- *Plecotus spp.*
- *Pipistrellus spp.*

Other mammals:

- *Muscardinus avellanarius*

In Wallonia, population is considered unfavourable for most of these species, even if range is favourable for some of them. Trends are stable, positive or negative according to the species in consideration.

Most of the species have undergone substantial population declines and a reduction of their range over the last decades, mainly as a result of loss and fragmentation of suitable habitats.

Measures undertaken for the management of the habitats described above are considered favourable for the species and are responsible for some positive trends, but additional measures will be needed in line with regional conservation objectives. Furthermore, non-annex I grasslands and elements such as hedges, tree lines, orchards and ponds also contribute to their habitat, incl. 500 ha of non annex I grasslands with *Persicaria bistorta* for *Lycaena helle.*

Bird species breeding or wintering in grasslands

In Wallonia, 11 bird species (listed in Annex I of the Birds Directive or considered as trigger species for SPA designation) have regular breeding (B) and/or wintering (W) populations in grasslands. These are:

- *Ardea alba (W)*
- *Circus cyaneus (W)*
- *Crex crex (B)*

- *Gallinago gallinago (W)*
- *Lanius collurio (B)*
- *Lanius excubitor (B, W)*
- *Lymnocryptes minutus (W)*
- *Lullula arborea (B)*
- *Milvus migrans (B)*
- *Milvus milvus (B)*
- *Saxicola rubetra (B)*

In Wallonia, among these breeding species, three species *(C. crex, L. excubitor, S. rubetra)* have undergone substantial population declines and a reduction of their breeding range over the last decades, mainly as a result of loss and fragmentation of suitable breeding habitats (mostly as a result of grassland intensification). The other species population in Wallonia are heavily dependent on the maintenance of permanent grasslands in the rural landscape.

Measures needed to maintain or restore favourable conservation status

Maintenance needs:

1. Active management and conservation measures are required to ensure maintenance, avoid deterioration and/or progressively lead to an improvement of structures and functions of the following areas covered by Annex I grasslands (all figures below are based on information reported under Article 17 habitats Directive of 2013 or best expert judgement since last reporting):

- ***Rupicolous calcareous or basophilic grasslands of the Alysso-Sedion albi (6110*)***: 49 ha of which 24 ha in Natura 2000 sites
- ***Xeric sand calcareous grasslands (6120)***: 45 ha, of which 27 ha in Natura 2000 sites.
- ***Calaminarian grasslands of the Violetalia calaminariae (6130)***: 51 ha of which 47 ha in Natura 2000 sites
- ***Semi-natural dry grasslands and scrubland facies on calcareous substrates (6210(*))***: 465 ha of which 435 in Natura 2000 sites
- ***Species-rich Nardus grasslands (6230*)***: 651 ha of which 615 ha in Natura 2000 sites
- ***Molinia meadows on calcareous, peaty or clayey-silt-laden soils (6410)*** : 261 ha of which 211 ha in Natura 2000 sites
- ***Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels (6430)*** : 9120 ha of which 2950 ha in Natura 2000 sites
- ***Lowland hay meadows (6510)*** : 13705 ha of which 4190 ha in Natura 2000 sites
- ***Mountain hay meadows (6520)*** : 550 ha of which 400 ha in Natura 2000 sites

Despite previous and current restoration actions, an important share of grassland habitats is still in an unfavourable condition, with a degraded species composition due to abandonment and subsequent domination by social graminoids, shrubs or IAS (non-agricultural grasslands), or due to agriculture intensification (meadows). Maintenance management of these habitats consists mainly in extensive grazing and mowing, trees and shrubs removal. For some non-agricultural grasslands, this may be considered as heavy restoration (i.e. for calcareous grasslands under old coniferous plantations).

2. Additional measures for maintenance and active management of further grassland area are required to ensure population maintenance and/or progressively achieve population increases of grassland species, as these species also occur in non-annex I habitats:

- ***Lycaena helle:*** maintenance/management of 500 ha of non annex I habitat with *Persicaria bistorta*, of which 400 ha in Natura 200 sites
- ***Other extensively managed grasslands of high biological value for birds and bats species:*** maintenance of 17 000 ha, of which 5500 ha in Natura 2000 sites
- ***Other permanent grasslands for birds (i.e. Milvus spp., Lanius spp., Galinago spp. and Lanius spp.) and bats (i.e. Myotis spp., Rhinolophus spp.) species:*** maintenance of 65000 ha, of which 15000 ha in Natura 2000 sites
- ***Tree lines, tree patches and hedges for bats, birds and Triturus cristatus, Muscardinus avellanarius:*** maintenance of *15000 km of which 1200 km in Natura 2000 sites*
- ***Orchards for Lucanus cervus, bats and Muscardinus avellanarius:*** maintenance of 500 ha, of which 20 ha in Natura 2000 sites

Restoration needs:

1. Restoration/creation of surfaces is needed to improve the surface area parameter of the conservation status of the following habitats:

- ***Xeric sand calcareous grasslands (6120)***: 110 ha of creation, of which 14 ha in Natura 2000 sites; and 30 ha of improvement of surfaces already under restoration (but not yet the habitat) in Continental Region, totally inside the Natura 2000 network
- ***Calaminarian grasslands of the Violetalia calaminariae (6130)***: 2 ha in Continental Region, of which 1 ha inside the Natura 2000 network
- ***Semi-natural dry grasslands and scrubland facies on calcareous substrates (6210(*))***: 210 ha, of which 205 ha in Natura 2000 sites
- ***Species-rich Nardus grasslands (6230*)***: 270 ha of which 260 ha in Natura 2000 site
- ***Molinia meadows on calcareous, peaty or clayey-silt-laden soils (6410)*** : 270 ha of which 210 ha in Natura 2000 sites
- ***Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels (6430)*** : 290 ha of which 220 ha in Natura 2000 sites
- ***Lowland hay meadows (6510)*** : 2750 ha of which 875 ha in Natura 2000 sites
- ***Mountain hay medows (6520)*** : 150 ha of which 100 ha in Natura 2000 sites

The restoration (creation) of Rupicolous calcareous or basophilic grasslands of the *Alysso-Sedion albi* (6110*) is linked (and a consequence of) to the restoration of calcareous grasslands (6210*) and calcareous rocky habitats (8160*, 8210 – see section E.2.7) as this habitat has a very small individual extension and is always included in a mosaic within habitat 6210, 8160 and 8210. There is thus no dedicated restoration need for this habitat.

2. Additional restoration measures of grassland areas are required to ensure population maintenance and/or progressively achieve population increases of grassland species, as these species also occur in non-annex I habitats:

- ***Lycaena helle:*** 500 ha of non annex I grasslands with *Persicaria bistorta*, of which 400 ha in Natura 2000 sites
- ***Tree lines and hedges for bats, birds and Triturus cristatus, Muscardinus avellanarius:*** 400 km of linear elements in grasslands, mainly outside Natura 2000 sites
- ***Orchards for Lucanus cervus, bats and Muscardinus avellanarius:*** 1000 ha of orchards, of which 70 ha in Natura 2000 sites

Prioritization of measures to be implemented during the next MFF period

Heavy restoration should take place on the following surfaces during the next MFF period in order to ensure maintenance of existing surfaces and obtain a sensible improvement of conservation status (structures and functions and surface area) of the following habitats:

- ***Xeric sand calcareous grasslands (6120):*** 110 ha to be created, of which 14 ha in Natura 2000 sites; 16.5 ha of highly degraded existing surfaces needing heavy restoration, of which 4.5 ha in Natura 2000 sites → total area to be restored = **126.5 ha of which 18.5 ha in Natura 2000 sites.**
- ***Calcareous grasslands (6210):*** 135 ha to be created, of which 133 ha in Natura 2000 sites; 155 ha of highly degraded existing surfaces needing heavy restoration, totally inside Natura 2000 sites → total area to be restored = **290 ha of which 288 ha in Natura 2000 sites**.
- ***Nardus grasslands* (6230): 125 ha** to be created **of which 120 ha in Natura 2000 sites**
- ***Calaminarian grasslands (6130):* 2 ha to be created, of which 1 ha in Natura 2000 sites**.
- ***Molinia meadows on calcareous, peaty or clayey-silt-laden soils (6410)***: 110 ha to be created, of which 105 ha in Natura 2000 sites; 50 ha of highly degraded existing surfaces needing heavy restoration, totally inside Natura 2000 sites → total area to be restored = **160 ha of which 155 ha in Natura 2000 sites.**
- ***Lowland hay meadows (6510)***: **400 ha** to be created, **of which 325 ha in Natura 2000 sites.**
- ***Mountain hay medows (6520)***: **75 ha** to be created, **of which 60 ha in Natura 2000 sites**
- ***Lycaena helle:* 200 ha** of non annex I grasslands with *Persicaria bistorta*, of which **150 ha in Natura 2000 sites**
- ***Tree lines and hedges for bats, birds and Triturus cristatus, Muscardinus avellanarius:* 200 km** of linear elements in grasslands **of which 40 km in Natura 2000 sites**
- ***Orchards for Lucanus cervus, bats and Muscardinus avellanarius:* 600 ha of orchards of which 50 ha in Natura 2000 sites**

Land acquisition and/or compensation to landowners/farmers will be necessary on the land parcels that will be used for these creations or heavy restorations of habitats, as they will be removed from classical agricultural or wood production. Costs must thus integrate not only restoration work but also these compensations/acquisitions on a variable share (according to the nature of the land where restoration would take place) of the surface to be restored.

NB: Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels (6430) : 180 ha to be created of which 90 ha in Natura 2000 sites. But this is not considered as heavy restoration as the habitat re-appears naturally with extensive management of grasslands or forests clear-cutting in alluvial plains. Nevertheless, land must be purchased or landowners/farmers compensated on this surface to be restored.

Recurrent management will also be needed. The assessment of needs for the next MFF period is:

- ***Xeric sand calcareous grasslands (6120):*** The management by grazing, mowing and shrub removal in 9 ha of existing surfaces and half of the surfaces under heavy restoration (due to the progressive implementation, so the counted surfaces are divided by 2 → 116/2 = 58) only in the Atlantic Region = **67 ha of which 9 ha in Natura 2000 sites**
- ***Calcareous grasslands (6210):*** The management by grazing, mowing and shrub removal in 310 ha of existing surfaces and half of the surfaces under heavy restoration (due to the progressive implementation, so the counted surfaces are divided by 2 → 290/2 = 145) = **455 ha of which 424 ha in Natura 2000 sites**

- ***Nardus* grasslands (6230*)**: The management by grazing, mowing and shrub removal in 251 ha of existing surfaces (400 other ha being managed by fire in a military camp), in 100 ha being already restored (but not yet the habitat) through current Life Projects, and in half of the surfaces under heavy restoration during next MFF (due to the progressive implementation, so the counted surfaces are divided by 2 → 125/2 = 62.5) = **413.5 ha of which 376.5 ha in Natura 2000 sites**
- **The extensive management of all existing tall herb communities** (habitat 6430), i.e. 9120 ha and on half of the surfaces under heavy restoration (due to the progressive implementation, so the counted surfaces are divided by 2 → 120/2 = 60) **= 9180 ha of which 2995 ha in Natura 2000 sites**
- The extensive management of all existing meadow habitat types, i.e. 212 ha of *Molinia* grasslands (6410), 13 705 ha of lowland hay meadows (6510) and 550 ha of mountain hay meadows (6520), and the implementation of AES in half of surfaces under heavy restoration (due to the progressive implementation, so the counted surfaces are divided by 2 → 160/2 = 80 ha of 6410 ; 400/2 = 200 ha of 6510; 75/2 = 37.5 ha of 6520) = **292 ha of 6410, of which 239 ha in Natura 2000 sites, 13905 ha of 6510 of which 4353 ha in Natura 2000 sites, 587.5 ha of 6520 of which 430 ha in Natura 2000 sites**
- ***Lycaena helle:*** The management by (very) extensive grazing, mowing and shrub removal in 500 ha of existing corridors and half of the surfaces to be created (due to the progressive implementation, so the counted surfaces are divided by 2 → 200/2 = 100) of non annex I habitat for the species = **600 ha of which 475 ha in Natura 2000 sites**
- ***Extensive grasslands of high biological value for birds and bats species:*** extensive management of 17 000 ha, of which 5500 ha in Natura 2000 sites
- ***Payment of AES for the maintenance and management of tree lines and hedges for bats, birds and Triturus cristatus, Muscardinus avellanarius:*** 15000 km of existing linear elements + 200 km of newly created elements (divided by 2 = 100 km due to progressive creation) = **15100 km, of which 1220 km in Natura 2000 sites**
- ***Management (maintenance) of other permanent grasslands for birds (i.e. Milvus spp., Lanius spp., Galinago sp. and Lanius sp.) and bats (i.e. Myotis spp., Rhinolophus spp.) species through AES:*** 65000 ha, of which 15000 ha in Natura 2000 sites
- ***AES payment for the maintenance of orchards for Lucanus cervus, bats and Muscardinus avellanarius:*** 500 ha of existing orchards + 600 ha of newly created surfaces (but counted surface is only half of 600 ha due to progressive implementation) = 800 ha of which 45 ha in Natura 2000 sites

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 (nb of ha or km)	Estimated cost in Euros (annualised)	Possible EU co-funding source
Restoration of xeric sand calcareous grasslands (HT 6120) (creation of new surfaces and heavy restoration in degraded existing surfaces : sod-cutting, trees and shrubs suppression…) *average cost per ha : 7500 €*	One-off	18.5	19821	

Restoration of semi-natural dry grasslands and scrubland facies on calcareous substrates (HT 6130) (creation of new surfaces and heavy restoration in degraded existing surfaces : sod-cutting, trees and shrubs suppression…) *average cost per ha : 7500 €*	One-off	1	1071	
Restoration of semi-natural dry grasslands and scrubland facies on calcareous substrates (HT 6210) (creation of new surfaces and heavy restoration in degraded existing surfaces : sod-cutting or scraping, trees and shrubs suppression…)* *average cost per ha : 10000 €*	One-off	288	411429	
Restoration of species-rich Nardus grasslands (6230) (creation of new surfaces and heavy restoration in degraded existing surfaces : sod-cutting, sowing of typical species, trees and shrubs suppression…)* *average cost per ha : 11000 €*	One-off	120	188571	
Restoration of Molinia meadows on calcareous, peaty or celayey-silt-lande soils (6410) (creation of new surfaces and heavy restoration in degraded existing surfaces : sod-cutting and/or soil scraping, sowing of typical species, trees and shrubs suppression…) *average cost per ha : 5000 €*	One-off	155	110714	
Restoration of lowland hay meadows (6510) (creation of new surfaces and heavy restoration in degraded existing surfaces : soil-scraping, sowing of typical species…) *average cost per ha : 5000 €*	One-off	325	232143	
Restoration of mountain hay meadows (6520) (creation of new surfaces and heavy restoration in degraded existing surfaces : soil-scraping, sowing of typical species…) *average cost per ha : 5000 €*	One-off	60	42857	
Land acquisition and/or compensation to landowners/farmers for the restoration of xeric sand calcareous grasslands (HT 6120) *average cost per ha: 15 000 €*	One-off	10	21429	
Land acquisition and/or compensation to landowners/farmers for the restoration of semi-natural dry grasslands and scrubland facies on calcareous substrates (HT 6210)* *average cost per ha: 10 000 €*	One-off	133	190000	
Land acquisition and/or compensation to landowners/farmers for the restoration of species-rich Nardus grasslands (6230)* *average cost per ha: 10 000 €*	One-off	120	171429	
Land acquisition and/or compensation to landowners/farmers for the restoration of Molinia meadows on calcareous, peaty or clayey-silt-lande	One-off	155	332143	

soils (6410) *average cost per ha: 15 000 €*				
Land acquisition and/or compensation to landowners/farmers for the restoration of tall herbs fringe communities (6430) *average cost per ha: 15 000 €*	One-off	90	192857	
Land acquisition and/or compensation to landowners/farmers for the restoration of lowland hay meadows (6510) *average cost per ha: 15 000 €*	One-off	325	696429	
Land acquisition and/or compensation to landowners/farmers for the restoration of mountain hay meadows (6520) *average cost per ha: 15 000 €*	One-off	60	128571	
Fencing of restored surfaces of semi-natural dry grasslands and scrubland facies on calcareous substrates (HT 6210)* *average cost per ha: 8000 €*	One-off	288	329143	
Agri-environmental schemes for recurring management of xeric sand calcareous grasslands (HT 6120) (mowing, shrubs control…) (estimated annualised surface = 200 ha existing + half of created surface = 120 ha/2) *average cost/ha/year: 250 €*	Recurring	9	2250	
Agri-environmental schemes for recurring management of semi-natural dry grasslands and scrubland facies on calcareous substrates (HT 6210)* *average cost/ha/year: 250 €*	Recurring	424	106000	
Agri-environmental schemes for recurring management of species-rich Nardus grasslands (6230) (mowing and/or grazing, shrubs control...)* *average cost/ha/year: 250 €*	Recurring	376	93875	
Agri-environmental schemes for recurring management of Molinia meadows on calcareous, peaty or clayey-silt-lande soils (6410) (extensive agriculture: late mowing with export of hay and no fertilizers) *average cost/ha/year: 250 €*	Recurring	239	59633	
Agri-environmental schemes for recurring management of tall herbs fringe communitiies (6430) (extensive agriculture: late mowing with export of hay and no fertilizers) *average cost/ha/year: 250 €*	Recurring	2995	748750	
Agri-environmental schemes for recurring management of lowland hay meadows (6510) (extensive agriculture: late mowing with export of hay and no fertilizers) *average cost/ha/year: 250 €*	Recurring	4353	1088125	
Agri-environmental schemes for recurring management of mountain hay meadows (6520) (extensive agriculture: late mowing with export of	Recurring	430	107500	

hay and no fertilizers) *average cost/ha/year: 250 €*				
Indemnities related to preventive measures in Natura 2000 sites - linked to xeric sand calcareous grasslands (6120) *average cost/ha/year: 440 €*	Recurring	9	3960	
Indemnities related to preventive measures in Natura 2000 sites - linked to semi-natural dry grasslands and scrubland facies on calcareous substrates (6210)* *average cost/ha/year: 440 €*	Recurring	424	186560	
Indemnities related to preventive measures in Natura 2000 sites - linked to species-rich Nardus grasslands (6230)* *average cost/ha/year: 440 €*	Recurring	376	165220	
Indemnities related to preventive measures in Natura 2000 sites - linked to Molinia meadows on calcareous, peaty or clayey-silt-lande soils (6410) *average cost/ha/year: 440 €*	Recurring	239	104953	
Indemnities related to measures in Natura 2000 sites - linked to tall herb fringe communities (6430) *average cost/ha/year: 440 €*	Recurring	2995	1317800	
Indemnities related to measures in Natura 2000 sites - linked to lowland hay meadows (6510) *average cost/ha/year: 440 €*	Recurring	4353	1915100	
Indemnities related to measures in Natura 2000 sites - linked to mountain hay meadows (6520) *average cost/ha/year: 440 €*	Recurring	430	189200	
Complementary funds needed to cover the cost of the recurrent management of semi-natural dry grasslands and scrubland facies on calcareous substrates (6210)* *average cost/ha/year: 310 €*	Recurring	424	131440	
Complementary funds needed to cover the cost of the recurrent management of species-rich Nardus grasslands (6230)* *average cost/ha/year: 110 €*	Recurring	376	41305	
Agri-environmental schemes for the recurring management of extensive grasslands (habtiats for birds and bats species) *average cost/ha/year: 250 €/ha*	Recurring	5500	1375000	
Indemnities related to preventive measures in Natura 2000 sites - linked to extensive grasslands (habitats for birds and bats species) *average cost/ha/year: 440 €*	Recurring	5500	2420000	
Restoration of non annex I habitat with Persicaria bistorta for Lycaena helle (creation of new surfaces) *average cost/ha: 5000 €*	One-off	150	107143	

Land acquisition and/or compensation to landowners/farmers for the restoration of non annex I habitat with Persicaria bistorta for Lycaena helle *average cost per ha: 10 000 €*	One-off	75	107143	
Agri-environmental schemes for recurring management of non annex I habitat with Persicaria bistorta for Lycaena helle (creation of new surfaces) *average cost/ha/year: 250 €*	Recurring	475	118750	
Indemnities related to preventive measures in Natura 2000 sites - linked to non annex I habitat with Persicaria bistorta for Lycaena helle (creation of new surfaces) *average cost/ha/year: 440 €*	Recurring	475	209000	
Plantation of tree lines and hedges for bats, birds,Triturus cristatus and Muscardinus avellanarius *average cost/km: 7000 €*	One-off	40	40000	
Agri-environmental schemes for the appropriate management and maintenance of tree lines and hedges for bats, birds, Triturus cristatus and Muscardinus avellanarius *average cost/km/year: 125 €*	Recurring	1220	152500	
Agri-environmental schemes for the maintenance of other permanent grasslands for birds (Milvus spp., Lanius spp.) and bats (Myotis spp. Rhinolophus spp.) species *average cost/ha/year: 120 €*	Recurring	15000	1800000	
Creation of orchards for Lucanus cervus, bats and Muscardinus avellanarius *average cost/ha: 3000 €*	One-off	50	21429	
Agri-environmental schemes for maintenance and management of orchards for Lucanus cervus, bats and Muscardinus avellanarius *average cost/ha: 450 €*	Recurring	45	20250	
TOTAL			15701492	

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

Name and short description of the measures	**Type of measure***	**Target (nb of ha or km)**	**Estimated cost in Euros (annualised)**	**Possible EU co-funding source**
Restoration of xeric sand calcareous grasslands (HT 6120) (creation of new surfaces and heavy restoration in degraded existing surfaces : sod-cutting, trees and shrubs suppression…) *average cost per ha : 7500 €*	One-off	108	115714	
Restoration of semi-natural dry grasslands and scrubland facies on calcareous substrates (HT 6130) (creation of new surfaces and heavy restoration in degraded existing surfaces : sod-	One-off	1	1071	

cutting, trees and shrubs suppression…) *average cost per ha : 7500 €*				
Restoration of semi-natural dry grasslands and scrubland facies on calcareous substrates (HT 6210) (creation of new surfaces and heavy restoration in degraded existing surfaces : sod-cutting or scraping, trees and shrubs suppression…)* *average cost per ha : 7500 €*	One-off	2	2143	
Restoration of species-rich Nardus grasslands (6230) (creation of new surfaces and heavy restoration in degraded existing surfaces : sod-cutting, sowing of typical species, trees and shrubs suppression…)* *average cost per ha : 11000 €*	One-off	5	7857	
Restoration of Molinia meadows on calcareous, peaty or celayey-silt-lande soils (6410) (creation of new surfaces and heavy restoration in degraded existing surfaces : sod-cutting, sowing of typical species, trees and shrubs suppression…) *average cost per ha : 5000 €*	One-off	5	3571	
Restoration of lowland hay meadows (6510) (creation of new surfaces and heavy restoration in degraded existing surfaces : soil-scraping, sowing of typical species…) *average cost per ha : 5000 €*	One-off	75	53571	
Restoration of mountain hay meadows (6520) (creation of new surfaces and heavy restoration in degraded existing surfaces : soil-scraping, sowing of typical species…) *average cost per ha : 5000 €*	One-off	15	10714	
Land acquisition and/or compensation to landowners/farmers for the restoration of xeric sand calcareous grasslands (HT 6120) *average cost per ha: 15 000 €*	One-off	25	53571	
Land acquisition and/or compensation to landowners/farmers for the restoration of semi-natural dry grasslands and scrubland facies on calcareous substrates (HT 6210)* *average cost per ha: 10 000 €*	One-off	2	2857	
Land acquisition and/or compensation to landowners/farmers for the restoration of species-rich Nardus grasslands (6230)* *average cost per ha: 10 000 €*	One-off	5	7143	
Land acquisition and/or compensation to landowners/farmers for the restoration of Molinia meadows on calcareous, peaty or clayey-silt-lande soils (6410) *average cost per ha: 15 000 €*	One-off	5	10714	

Land acquisition and/or compensation to landowners/farmers for the restoration of tall herbs fringe communities (6430) *average cost per ha: 15 000 €*	One-off	30	64286	
Land acquisition and/or compensation to landowners/farmers for the restoration of lowland hay meadows (6510) *average cost per ha: 15 000 €*	One-off	75	160714	
Land acquisition and/or compensation to landowners/farmers for the restoration of mountain hay meadows (6520) *average cost per ha: 15 000 €*	One-off	15	32143	
Fencing of newly created surfaces emi-natural dry grasslands and scrubland facies on calcareous substrates (HT 6210)* *average cost per ha: 8000 €*	One-off	15	17143	
Agri-environmental schemes for Recurring management of xeric sand calcareous grasslands (HT 6120) (mowing, shrubs control…) *average cost/ha/year: 450 €*	Recurring	58	25988	
Agri-environmental schemes for recurring management of semi-natural dry grasslands and scrubland facies on calcareous substrates (HT 6210 *average cost/ha/year: 450 €*	Recurring	31	13950	
Agri-environmental schemes for recurring management of species-rich Nardus grasslands (6230) (mowing and/or grazing, shrubs control...)* *average cost/ha/year: 450 €*	Recurring	38	17100	
Agri-environmental schemes for recurring management of Molinia meadows on calcareous, peaty or clayey-silt-lande soils (6410) (extensive agriculture: late mowing with export of hay and no fertilizers) *average cost/ha/year: 450 €*	Recurring	53	23625	
Agri-environmental schemes for recurring management of tall herbs fringe communitiies (6430) (extensive agriculture: late mowing with export of hay and no fertilizers) *average cost/ha/year: 450 €*	Recurring	6185	2783250	
Agri-environmental schemes for recurring management of lowland hay meadows (6510) (extensive agriculture: late mowing with export of hay and no fertilizers) *average cost/ha/year: 450 €*	Recurring	9553	4298625	
Agri-environmental schemes for recurring management of mountain hay meadows (6520) (extensive agriculture: late mowing with export of hay and no fertilizers) *average cost/ha/year: 450 €*	Recurring	158	70875	
Complementary funds needed to cover the cost of the recurrent management of semi-natural dry grasslands and scrubland facies on calcareous	Recurring	31	17050	

substrates (6210)* *average cost/ha/year: 550 €*				
Complementary funds needed to cover the cost of the recurrent management of species-rich Nardus grasslands (6230)* *average cost/ha/year: 350 €*	Recurring	38	13300	
Agri-environmental schemes for the recurring management of extensive grasslands (habtiats for birds and bats species) *average cost/ha/year: 450 €/ha*	Recurring	11500	5175000	
Restoration of non annex I habitat with Persicaria bistorta for Lycaena helle (creation of new surfaces) *average cost/ha: 5000 €*	One-off	50	35714	
Land acquisition and/or compensation to landowners/farmers for the restoration of non annex I habitat with Persicaria bistorta for Lycaena helle *average cost per ha: 10 000 €*	One-off	50	71429	
Agri-environmental schemes for recurring management of non annex I habitat with Persicaria bistorta for Lycaena helle (creation of new surfaces) *average cost/ha/year: 450 €*	Recurring	125	56250	
Plantation of tree lines and hedges for bats, birds,Triturus cristatus and Muscardinus avellanarius *average cost/km: 7000 €*	One-off	160	160000	
Agri-environmental schemes for the appropriate management and maintenance of tree lines and hedges for bats, birds, Triturus cristatus and Muscardinus avellanarius *average cost/km/year: 125 €*	Recurring	13880	1735000	
Agri-environmental schemes for the maintenance of other permanent grasslands for birds (Milvus spp., Lanius spp.) and bats (Myotis spp. Rhinolophus spp.) species *average cost/ha/year: 120 €*	Recurring	50000	6000000	
Creation of orchards for Lucanus cervus, bats and Muscardinus avellanarius *average cost/ha :3000 €*	One-off	600	257143	
Agri-environmental schemes for maintenance and management of orchards for Lucanus cervus, bats and Muscardinus avellanarius *average cost/ha: 450 €*	Recurring	755	339750	
TOTAL			21637263	

Expected results for targeted species and habitat types

A full implementation of the prioritized restoration and management measures targeting the 9 grassland habitat types is expected to lead to the maintenance and, in most of the cases, to an increase in their total area, thus a clear positive trend in the surface parameter of the conservation status.

Structures and functions would also be improved on an important share of existing surfaces. Nevertheless, if positive trends should already be observed by 2028, the substantial improvement of all restored surfaces will take place on a longer term due to time needed for full restoration of a typical species composition – this is why recurrent management is also considered a priority.

If fully implemented, measures foreseen in grasslands should contribute to the maintenance and/or the increase of population of grassland-specific species, such as *Arnica montana*, *Lanius* spp., wintering snipe *Gallinago gallinago* and *Lymnocryptes minutus*. For *Lycaena helle*, measures would improve connectivity and ensure a better resilience for this species - highly threatened by climate change. They would also improve the carrying capacity of feeding habitats for species like *Milvus* spp. or bats.

Nevertheless, many species populations (e.g. most of bats and birds) also depend on measures taken in other habitats (forests, heathlands, caves...) or on species-specific measures (e.g. protection of nesting populations), thus grasslands measures would contribute to improvement of conservation status only if combined with the measures mentioned in other sections of this document (E.2.X and E.3).

E.2.5. Other agroecosystems (incl. croplands)

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

Annex II, IV and V species having a substantial share of their habitat in other agroecosystems (incl. croplands)

Bromus grossus is the only plant species of annex II present in croplands in Wallonia. All parameters of the conservation status have been assessed as bad in the previous article 17 report (2013). The pressures behind this bad assessment were the use of herbicides and the abandonment of production of seeds in the farms (use of commercial seeds).

Measures taken so far for the conservation and reintroduction of the species are in progress, through Life BNIP. They consist in concluding agreements with farmers, incl. through AES, to use seeds of spelt mixed with *Bromus grossus* seeds in their crops. So the trends are positive (reintroduction in several locations of the historical range and growth of the species population).

Bird species breeding, staging and wintering in other agroecosystems (incl. croplands)

In Wallonia, 10 bird species listed in Annex I of the Birds Directive or considered as trigger species for SPA designation have regular breeding (B), wintering (W) and staging (S) populations in croplands. Most of their population is out of Natura 2000 network. These are:

- *Asio flammeus (W)*
- *Circus cyaneus (B, W)*
- *Circus aeruginosus (B)*
- *Circus pygargus (B)*
- *Charadrius morinellus (S)*
- *Cygnus cygnus (W)*
- *Cygnus bewickii (W)*
- *Falco colombarius (S)*
- *Luscinia svecica (B)*
- *Pluvialis apricaria (S)*

Most of the breeding species (*Circus sp.*) have small and fragile breeding population, but the breeding population of *Luscinia svecica* in cropland is currently increasing. Wintering population of *Cygnus cygnus* and *C. bewickii* are very localised and dependent on the presence of certain crop type. *Asio flammeus, Circus sp*. and *Falco colombarius*, along with many other raptors and occasional *Lanius excubitor*, are dependent on availability of prey (small passerines and voles) and thus rely on a minimum ecological network in croplands.

Measures needed to maintain or restore favourable conservation status

Maintenance needs

Maintenance of a sufficient share of feeding surfaces/structural elements:

- Maintain at least 1000 km x 12 m = 1 200 ha of fauna strip and 2000 km x 12 m = 2 400 ha of grass strips equivalent to current "MB5" AES) in cropland, totally outside Natura 2000 sites.

Restoration needs

For *Bromus grossus*:

- Establishment of a conservatory field for ensuring the production of seeds that will be delivered to farmers.
- Conclusion of agreements with farmers, through AES, in order to have at least 100 different locations of the species in its historical range.

For birds in cropland (*Circus* sp. as breeders and wintering species):

- Creation through AES of at least 2,5% (or 50 km²) of favourable habitat for *Circus sp*. inside 2000 km2 of a cropland area where the species breeds: at least 25 km² or 2500 ha of fauna strip, and 12,5 km² or 1250 ha of favourable crop or pasture.

Prioritization of measures to be implemented during the next MFF period

All measures needed for the species and described above are considered a priority for the next MFF period.

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

- measures beyond Natura 2000 (wider green infrastructure measures)

Name and short description of the measures	Type of measure*	Target (nb of ha)	Estimated cost in Euros (annualised)	Possible EU co-funding source
Establishment of conservatory fields for Bromus grossus *average cost per ha: 20 000 €*	One-off	3	60000	
use of AES in croplands (stripes for segetal plants) for Bromus grossus *NB : 100 locations (0.12 ha = average size of the stripe)* *average cost per ha: 1 500 €/ha/year*	Recurring	12	126000	

AES for the maintenance (1200 ha) and creation (2500 ha) of fauna strip for cropland birds *average cost per ha: 1500€/ha*	Recurring	3750	5625000	
AES for the maintenance and management of grass strips for cropland birds *average cost per ha: 900€/ha*	Recurring	2400	2160000	
AES for the creation of favourable crops for Circus sp. *average cost per ha: 200 €/ha*	Recurring	625	125000	
AES for the creation of fauna favourable land in cropland landscape for Circus sp. *average cost per ha: 1200 €/ha*	Recurring	625	750000	
TOTAL			8846000 €	

Expected results for targeted species and habitat types

A full implementation of the prioritized restoration measures for *Bromus grossus* would ensure the survival of the species and even lead to a substantial improvement of all parameters of its conservation status.

For *Circus* species, if fully implemented and combined with measures mentioned in E.3 (i.e. detection and protection of nests), habitat measures can lead to a self-sustained population of 20 to 30 pairs for the 3 species.

E.2.6. Woodlands and Forests

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

Annex I woodlands and forests

Amongst the woodland and forest habitat types listed in Annex 1 of the Habitats Directive, 10 are present in Wallonia:

- *Luzulo-Fagetum beech forests (9110)*
- *Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrub layer (9120)*
- *Asperulo-Fagetum beech forests (9130)*
- *Medio-European limestone beech forests of the Cephalanthero-Fagion (9150)*
- *Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli (9160)*
- *Tilio-Acertion forests of slopes, screes and ravines (9180*)*
- *Old acidophilous oak woods with Quercus robur on sandy plain (9190)*
- *Bog woodlands (91D0*)*
- *Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) (91E0*)*
- *Riparian mixed forests of Quercus robur, Ulmus laevis and Ulmus minor, Fraxinus excelsior of Fraxinus angustifolia, along the great rivers (Ulmenion minoris) (91F0)*

These 10 habitats are reported as being currently in an unfavourable conservation status. In the most recent available report on the conservation of habitats and species under Habitats Directive ("Article 17 report" of 2013), the "structures and functions" parameter for all these habitats has been assessed as inadequate (55 % of assessment = U1) or bad (45 % U2). Reasons behind this bad assessment include a lack of “habitat trees” (incl. dead wood), poor tree species diversity and the frequent occurence of perturbations (invasive alien species, soil compaction, artificial drainage). Some positive trends have

been observed in 2013 such as the increase of large living trees, while negative trends are more linked to the increase of soil compaction and the development of invasive alien species.

Furthermore, the total area coverage is currently deemed insufficient (based on the "area" criterion in the Article 17 report) for the rarest habitats, incl. the 3 priority habitats, meaning that additional measures will be required to recreate surfaces and reconnect these habitats, that have undergone deforestation and/or transformation into exotic (coniferous) plantations in the past.

The main pressures and threats identified in previous report are the lack of conservation measures (e.g. no legal protection of habitats outside the Natura 2000 network, no measures for habitat trees and wilderness areas in private properties outside the network...) combined with unsuitable silvicultural and logging activities (exotic transformation, soil compaction during logging, insufficient conservation of habitat trees) and too high game density. Climate change and tree diseases (i.e. ash disease) are also an increasingly clear threat for some forest habitats.

Previous measures taken for forest habitats are mainly legal measures taken in Natura 2000 sites through designation acts and through the Forest Code, as well as several LIFE-Nature projects targeting the restoration of some rare habitat types, especially on marginal soils in high plateaus of Ardenne, and in alluvial areas (Life BNIP). These measures have already raised the surface of habitats 9190 and 91D0 within the Natura 2000 network in the Continental region, but additional measures are needed to reach favourable conservation status of forest habitat types, both to increase the surfaces of the rarest and priority habitats, and to improve structures and functions of all habitat types throughout their natural range (incl. outside Natura 2000 sites).

Annex II, IV and V species having a substantial share of their habitat in woodlands and forests

In Wallonia, the following annex II, IV and V species have all or a substantial share of their habitat in woodlands and forests.

Plant species:

- *Cladonia* subgen. *Cladina*
- *Leucobryum glaucum*
- *Sphagnum* sp.

Molllusc species:

- *Vertigo moulinsiana*

Butterfly species:

- *Euphydryas aurinia* (in forest open habitats)

Beetle species:

- *Cerambyx cerdo*
- *Lucanus cervus*

Bat species: several annex II and IV species (*Chiroptera* sp.)

Other mammal species:

- *Felis sylvestris*
- *Martes martes*
- *Muscardinus avellanarius*

In Wallonia, range is assessed as favourable for most of the species except for *Cerambyx cerdo, Euphydrias aurinia, Lucanus cervus, Barbastella barbastellus, Myotis myotis* (in Atlantic region), *Muscardinus muscardinus* and *Felis silvestris*. It is unknown for *Myotis brandtii*.

Population is assessed as unfavourable for all species *except Leucobryum glaucum (in Continental region), Myotis nattereri and Myotis mystacinus.* It is unknown for *Myotis bechsteinii and Myotis brandtii*.

Most forest species are thus in bad conservation status, mainly as a result of loss and fragmentation of suitable habitats, including lack of well-structured forest edges, lack of dead wood and of large living habitat trees.

Measures undertaken and/or needed for the improvement of conservation status of the habitat types are also beneficial to the species, but additional measures are also necessary, e.g. measures taking place in non-annex I habitats such as old oak forests or swamp forests, or measures improving the structure of forest edges.

Bird species breeding in woodlands and forests

In Wallonia, 12 bird species (listed in Annex I of the Birds Directive or considered as trigger species for SPA designation) have regular breeding populations and/or a large share of their habitats in woodland and forests. These are:

- *Aegolus funereus*
- *Caprimulgus europaeus*
- *Ciconia nigra*
- *Dendrocopos medius*
- *Dryocopus martius*
- *Glaucidium passerinum*
- *Jynx torquilla*
- *Lanius excubitor*
- *Lullula arborea*
- *Pernis apivorus*
- *Picus canus*
- *Tetrastes bonasia*

4 of these species (*C. europeaus, L. excubitor, P canus* and *Tetrastes bonasia*) have undergone substantial population declines and a reduction of their breeding range over the last decades in Wallonia, mainly as a result of loss and fragmentation of suitable breeding habitats. Other species are partly dependent on exotic tree plantation (coniferous species). Some species have recently increased (i.e. *C. nigra, P. apivorus*) but are still rare and with fragile population. *Glaucidium passerinum* is a new breeding bird in Belgium (first recorded in 2012).

Measures undertaken and/or needed for the improvement of conservation status of the habitat types are also beneficial to the species, such as the maintenance of large habitat trees and dead wood, but additional measures will also be needed, e.g. measures taking place in non-annex I habitats such as old oak forests, or measures promoting locally the coppice forest regime.

Measures needed to maintain or restore favourable conservation status

Maintenance needs:

1. Preventive and, in some cases, active management measures are required to ensure maintenance, avoid deterioration and, for a huge share of the surface, progressively lead to an improvement of structures and functions of the following areas covered by Annex I forests and woodlands (all figures below are based on information reported under Article 17 habitats Directive of 2013 or best expert judgement since last reporting):

- ***Luzulo-Fagetum beech forests (9110):*** 48 000 ha of which 29 000 ha in Natura 2000 sites
- ***Atlantic acidophilous beech forests (9120):*** 11 100 ha of which 4 100 ha in Natura 2000 sites
- ***Asperulo-Fagetum beech forests (9130):*** 42 500 ha of which 16 550 ha in Natura 2000 sites
- ***Limestone beech forests (9150):*** 10 200 ha of which 6 070 ha in Natura 2000 sites
- ***oak or oak-hornbeam forests (9160):*** 32 100 ha of which 15 375 ha in Natura 2000 sites
- ***Tilio-Acertion forests of slopes, screes and ravines (9180*):*** 1 313 ha of which 911 ha in Natura 2000 sites
- ***Old acidophilous oak woods (9190):*** 5 200 ha of which 2 650 ha in Natura 2000 sites
- ***Bog woodlands (91D0*):*** 700 ha of which 650 ha in Natura 2000 sites;
- ***Alluvial forests (91E0*):*** 5 150 ha of which 2 475 ha in Natura 2000 sites
- ***Riparian mixed forests along the great rivers (91F0):*** 55 ha of which 30 ha in Natura 2000 sites

The measures should among others prevent exotic transformation and deforestation of these annex I habitats (especially in ancient forests) and promote natural processes, diversity of indigenous tree species, the maintenance of large trees and dead wood and create wilderness areas on a certain surface of the surface.

2. Maintenance and improvement of the quality (structures and functions) of further indigenous forest areas is required to ensure population maintenance and/or progressively achieve population increases of forest and woodland **species**, as many forest species also use **non-annex I habitats**, such as secondary oak forests (e.g. for *Dendrocopos medius* and *Lucanus cervus*) and swamp forests (for *Vertigo moulinsiana*). About 115 000 ha of broadleaved forests are non-annex I habitat types. Some of them are exotic broadleaved plantations (e.g. *Populus* cultivars, *Quercus rubra*, *Robinia*) but the main share of this surface is indigenous non-climacic oak and oak-hornbeam forests of the *Luzulo-Fagetum* and *Stellario-Carpinetum,* and climacic oak-hornbeam forests of the Endymio-Carpinetum on wet soils, that contribute directly to the habitat or to the connectivity between habitats of several species of community interest. Their estimated surface is 70000 ha for *L.-F.* and *S.-C.*, 5000 ha for *E.-C.* on the whole Walloon territory. In the Natura 2000 network, the estimated surface of indigenous forests that are not annex 1 habitat but contribute to the habitat of species is ~46 000 ha.

A high proportion of these indigenous habitats should thus be maintained, especially where they are included in Natura 2000 sites and/or located in ancient forests and/or in the Atlantic Region. Preventive and active measures should also take place in these areas to improve the structures and functions in order to achieve a favourable conservation status of forest and woodland species. Particularly, in oak dominated forests, there is currently an important lack of stands with younger oaks, so that the surface of old oak stands will drastically decrease in the future - when the existing ones will be harvested. The creation of wilderness areas in the existing old oak stands is necessary to ensure the maintenance on the long term of a sufficient area of these highly valuable habitats.

Furthermore, maintenance needs also consist in the management of 200 ha of **open habitats corridors in forests for *Euphydrias aurinia*** in Continental region, totally inside Natura 2000 sites.

Re-creation needs:

1. Restoration of surfaces is needed to improve the surface area parameter of the conservation status and the connectivity of the following habitats:

- ***Tilio-Acertion forests of slopes, screes and ravines (9180*):*** at least 50 ha (according to the potential restoration surfaces), mainly (~ 75%) in Natura 2000 sites
- ***Old acidophilous oak forests (9190):*** 400 ha of which 330 ha in Natura 2000 sites
- ***Bog woodlands (91D0*):*** 300 ha almost exclusively inside the Natura 2000 network
- ***Alluvial forests (91E0*)***: 500 ha of which 350 ha in Natura 2000 sites

Furthermore, re-creation of other annex 1 forest habitat types from exotic plantations is locally relevant to improve connectivity or minimal functional area of habitat patches. The surface needed is difficult to assess but could reach several thousands of hectares (a few % of total Walloon forest surface), with a priority given to the Atlantic region and to exotic forests established in ancient broadleaved forest locations (without recent deforestation).

2. Furthermore, active management is needed to improve forest edges and open habitats in forest and to promote locally forest regimes favourable to some species:

- ***Well-structured forest edges as feeding habitat for bats and birds:*** creation of 3000 km of well-structured forest edges
- ***Open habitats corridors in forests for Euphydrias aurinia:*** creation of a supplement of 200 ha of corridors, of which 120 ha in Natura 2000 sites.
- ***Open habitats corridors for Caprimulgus europaeus***: creation of 50 ha, of which 40 ha in Natura 2000 sites.
- ***Coppice restoration and installation of very dense tree refuges for Tetrastes bonasia****:* 200 ha, totally inside Natura 2000 sites. This restoration will be implemented first and foremost in public forests through adaptation of forest management plans, and through awareness-rising - with no associated cost.

Prioritization of measures to be implemented during the next MFF period

Restoration measures

Re-creation needs of annex I rare and priority habitats mentioned above concern a total surface of 1 250 ha. From this surface, the priority for the next MFF could be set on 50%, or **625 ha, of which 400 ha** would occur **in the Natura 2000 network**. The estimated related costs would be the acquisition of 220 ha of land (110 ha in Natura 2000 sites, 110 ha outside), indemnities for the abandonment of wood production activities in 325 ha (234 ha in Natura 2000 sites, 91 ha outside), and indemnities for the loss of incomes coming from early harvesting of coniferous plantations in 98 ha (73 ha in Natura 2000 sites, 25 ha outside).

Other restoration priorities are focused on habitats for the species:

- **Well-structured forest edges for bats and birds**: creation of 1100 km (width = 20 m) = **2200 ha, of which 1100 ha in Natura 2000 sites and 1100 ha outside**
- **Open habitats corridors in forests for *Euphydrias aurinia:* 200 ha** in Continental region, **of which 120 ha in Natura 2000 sites and 80 ha outside the network.** Indemnities for the abandonment of wood production should be paid to private landowners and municipalities on an estimated surface of 160 ha (80 ha in Natura 2000 sites, 80 ha outside), as well as indemnities for the loss of incomes coming from early harvesting of stands on 80 ha (40 ha in Natura 2000 sites, 40 ha outside).

- ***Open habitats corridors for Caprimulgus europaeus***: 50 ha, of which 40 ha in Natura 2000 sites and 10 ha outside the network. Indemnities for the abandonment of wood production should be paid to private landowners and municipalities on an estimated surface of 40 ha (32 ha in Natura 2000 sites, 8 ha outside), as well as indemnities for the loss of incomes coming from early harvesting of plantation on 20 ha (16 ha in Natura 2000 sites, 4 ha outside).
- ***Coppice restoration and installation of very dense tree refuges for Tetrastes bonasia****:* 200 ha, totally inside Natura 2000 sites. This restoration will be implemented first and foremost in public forests through adaptation of forest management plans, and through awareness-rising - with no associated cost.

Maintenance needs

Maintenance of **indigenous forests** must be ensured **in Natura 2000 sites**. These areas have been officially identified through the sites designation acts in several "management units" that include both annex I forest habitat types and indigenous forests contributing to the habitat for the species of community interest. Indemnities of 40 €/ha/year for private landowners are currently used to implement legal measures linked to the Natura 2000 sites designation acts, e.g. maintaining surfaces and improving some of the structures and functions parameters. These payments must be ensured for the next MFF period. **The total surface** of indigenous forest management units is **124 256 ha.** The estimated share of privately-owned indigenous forests for which the 40 € indemnity should be paid is **35454 ha**.

Furthermore, still in Natura 2000 sites, for voluntary actions going further than legal measures (setting wilderness areas on more than 3% of the property surface or having well-structured forest edges wider than 10 m), the payment is 100 €/ha and is paid to both private landowners and municipalities. The objective would be to have 10 % of **wilderness areas** in indigenous forests in Natura 2000 sites, or **11 481 ha** of which **7 781 ha** of **annex 1 habitats** and **3 700 ha of non annex 1 habitats**, mainly oak forests. These wilderness areas would among others contribute to the improvement of structures and functions (raise the regional density of habitat trees) and to the maintenance of old oak stands (that would thus not be harvested).

As concerns maintenance of indigenous forests **outside the Natura 2000 network**, priority for the next MFF should be given to maintenance of surfaces and improvement of structures and functions of the highest biological value habitats, for instance:

- rare and/or priority annex I habitats, such as HT 9180, 9190, 91D0, 91E0, 91F0 in all regions; 9150, 9160 in Atlantic region
- high biological value forest stands located in ancient forests
- forests harbouring rare and/or protected species (species of community interest, red list species...)

The most adapted and efficient measures outside the network would consist in the creation of **wilderness areas in old stands** already containing large trees. The estimated area where these measures would take place for the next MFF is **5 790 ha, of which 3940 ha of annex I habitats** and **1850 ha of habitats for the species**.

Other priorities in terms of habitats for the species are:

- **open habitats corridors for *Euphydrias aurinia:*** the recurrent management of 200 ha of existing corridors + half of the surface of newly created corridors (100 ha, due to the progressive implementation, so the counted surfaces are divided by 2), of which 200 + 120 ha/2 = **260 ha in Natura 2000 sites**, and 80 ha/2 = **40 ha outside the Natura 2000 network**

- **open habitat corridors for *Caprimulgus europaeus:*** the management of half of the newly created surfaces (50 ha, due to the progressive implementation, so the counted surfaces are divided by 2), of which **40 ha in Natura 2000 sites,** and **5 ha outside the Natura 2000 network**

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 (nb of ha)	Estimated cost in Euros (annualised)	Possible EU co-funding source
Purchase of privately-owned land for the restoration of forest habtiat types (HT 9180, 9190, 91D0*, 91E0*)* *average cost per ha: 10000 €*	One-off	110	157143	
Compensation (to private landowners and municipalitites) for abandonment of forest use after harvesting existing coniferous stands that will be restored in indigenous forest habitat types (HT 9180, 9190, 91D0*, 91E0*)* *average cost per ha: 2000 €*	One-off	234	66857	
Compensation (to private landowners and municipalitites) for loss of income from exotic plantations that are harvested before maturity to restore indigenous forest habitat types (HT 9180, 9190, 91D0*, 91E0*)* *average cost per ha: 4500 €*	One-off	73	46929	
Indemnities to private landowners for the maintenance and structures and functions improvement of indigenous forest habitats (all forest habitat types and habitats for the species) *average cost/ha/year: 40 €*	Recurring	35454	1418161	
Indemnities for the creation of wilderness areas in forest habitat types of community interest *average cost/ha/year: 100 €*	Recurring	7781	778112	
Indemnities for the creation of wilderness areas in other forest habitats for the species *average cost/ha/year: 100 €*	Recurring	3700	370000	
Indemnities for creation of well structured forest edges *average cost per ha: 100 €*	Recurring	1100	110000	
Compensation (to private landowners and municipalitites) for loss of income from tansformation of forests in extensive open corridors for Euphydrias aurinia *average cost per ha: 2000 €*	One-off	80	22857	
Compensation (to private landowners and municipalitites) for loss of income from exotic plantations that are harvested before maturity to be transformed in extensive open corridors for Euphydrias aurinia *average cost per ha: 4500 €*	One-off	40	25714	

Cost for restoration of open corridors for Euphydrias aurinia *average cost per ha: 4500 €*	One-off	120	77143	
Management of existing and newly-created corridors for Euphydrias aurinia (estimated annualised surface = 200 ha existing + half of created surface = 120 ha/2) *average cost per ha every 2 years : 300 €*	Recurring	260	39000	
Compensation (to private landowners and municipalitites) for loss of income from tansformation of forests in extensive open corridors for Caprimulgus europaeus *average cost per ha: 2000 €*	One-off	32	9143	
Compensation (to private landowners and municipalitites) for loss of income from exotic plantations that are harvested before maturity to be transformed in extensive open corridors for Caprimulgus europaeus *average cost per ha: 4500 €*	One-off	16	10286	
Management of existing and newly-created corridors for Caprimulgus europaeus (estimated annualised surface = half of created surface = 40 ha/2) *average cost per ha every 2 years : 300 €*	Recurring	20	3000	
TOTAL			3134344 €	

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

Name and short description of the measures	**Type of measure***	**Target (nb of ha)**	**Estimated cost in Euros (annualised)**	**Possible EU co-funding source**
Purchase of privately-owned land for the restoration of forest habtiat types (HT 9180, 9190, 91D0*, 91E0*)* *average cost per ha: 10000 €*	One-off	110	157143	
Compensation (to private landowners and municipalitites) for abandonment of forest use after harvesting existing coniferous stands that will be restored in indigenous forest habitat types (HT 9180, 9190, 91D0*, 91E0*)* *average cost per ha: 2000 €*	One-off	91	25943	
Compensation (to private landowners and municipalitites) for loss of income from exotic plantations that are harvested before maturity to restore indigenous forest habitat types (HT 9180, 9190, 91D0*, 91E0*)* *average cost per ha: 4500 €*	One-off	25	16243	
Indemnities for the creation of wilderness areas in forest habitat types of community interest *average csot/ha/year: 100 €*	Recurring	3940	394040	

Indemnities for the creation of wilderness areas in other forest habitats for the species *average csot/ha/year: 100 €*	Recurring	1850	185000	
Indemnities for creation of well structured forest edges *average cost per ha: 100 €*	Recurring	1100	110000	
Compensation (to private landowners and municipalitites) for loss of income from tansformation of forests in extensive open corridors for Euphydrias aurinia *average cost per ha: 2000 €*	One-off	80	22857	
Compensation (to private landowners and municipalitites) for loss of income from exotic plantations that are harvested before maturity to be transformed in extensive open corridors for Euphydrias aurinia *average cost per ha: 4500 €*	One-off	40	25714	
Cost for restoration of open corridors for Euphydrias aurinia *average cost per ha: 4500 €*	One-off	80	51429	
Management of existing and newly-created corridors for Euphydrias aurinia (estimated annualised surface = half of created surface = 80 ha/2) *average cost per ha every 2 years : 300 €*	Recurring	40	6000	
Compensation (to private landowners and municipalitites) for loss of income from tansformation of forests in extensive open corridors for Caprimulgus europaeus *average cost per ha: 2000 €*	One-off	8	2286	
Compensation (to private landowners and municipalitites) for loss of income from exotic plantations that are harvested before maturity to be transformed in extensive open corridors for Caprimulgus europaeus *average cost per ha: 4500 €*	One-off	4	2571	
Management of existing and newly-created corridors for Caprimulgus europaeus (estimated annualised surface = half of created surface = 10 ha/2) *average cost per ha every 2 years : 300 €*	Recurring	5	750	
TOTAL			999976 €	

Expected results for targeted species and habitat types

A full implementation of the prioritized restoration measures targeting 4 forest habitat types (9180*, 9190, 91D0* and 91E0*) is expected to lead to an increase of their regional surface. This increase is also conditioned to the maintenance of existing surfaces of the targeted habitats, but we can assume that existing surfaces are quite well protected in Natura 2000 sites (through designation acts if related payments are ensured), and also outside the network as their transformation into coniferous

plantations is made difficult by law and/or presents minor economic interest, due to their particular soil conditions.

For other habitat types, maintenance of existing surfaces cannot be totally ensured as an important share of the surfaces is located outside the network. Prioritized measures would nevertheless widely contribute to the maintenance of existing surfaces in Natura 2000 sites and of a share of existing surfaces outside the network.

If fully implemented, measures related to designation acts (in Natura 2000 sites) and measures focusing on wilderness areas (both inside and outside the Natura 2000 network) will also lead to a substantial improvement of key elements of the structures and functions parameter of forest habitats at regional scale, but this improvement will be only initiated in 2028 and its effects must be considered on a long term due to the duration of natural processes in forest ecosystems. These measures would also have a substantial effect on the long term for species related to dead wood and large habitat trees, e.g. beetles, some bat species and woodpeckers.

Species-related measures on forest edges and open corridors in forests will also contribute to the improvement of the habitat and connectivity (and subsequent improvement of the population parameter) for insects (e.g. *Euphydrias aurinia*), bats and birds species. Nevertheless, many of them (e.g. *Lucanus cervus*, most of bats and birds) do not exclusively live in forests, thus the improvement of their conservation status will also depend on the quality of other habitats (grasslands, heathlands...) and forest-related measures would not ensure improvement of conservation status if not combined with the measures mentioned in other sections of this document (E.2.X and E.3).

E.2.7. Rocky habitats, dunes & sparsely vegetated lands

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

Annex I rocky habitats and dunes

Amongst rocky habitats, dunes & sparsely vegetated lands listed in Annex 1 of the Habitats Directive occurring in Wallonia, 5 are depending on a management through various practices. These are:

- *Inland dunes with open Corynephorus and Agrostis grasslands (2330)*
- *Medio-European upland siliceous screes (8150)*
- *Medio-European calcareous scree of hill and montane levels (8160*)*
- *Calcareous rocky slopes with chasmophytic vegetation (8210)*
- *Siliceous rocky slopes with chasmophytic vegetation (8220)*

For all habitats, conservation status is bad in the most recent article 17 report (2013). Range is favourable but surfaces are mainly considered inadequate for rocky habitats, and bad for inland dunes, while structures and functions are bad for all habitats.

Pressures and threats on inland dunes grasslands include urbanization, sand extraction, and filling of old sand quarries. Natural evolution and the development of invasive alien plants are another major pressure, leading to the development of mosses, social grasses, shrubs and trees, with a stabilisation of the sandy substrate and the regression of typical pioneer communities. Measures taken so far took place in a few old sand quarries while the circulation of military vehicles ensured the maintenance of the largest Walloon habitat complex in the Lagland camp. Life BNIP foresees the restoration of the habitat in Atlantic region through the use of RDP funds.

As concerns rocky habitats, mains pressures and threats are the securing of human infrastructures (roads, railways and buildings) through different techniques, the development of shrubs and trees in and around the habitats (causing important shade and the regression of thermophilous communities) and the stabilisation (lack of necessary dynamics) of screes.

Recreational activities and the quarrying industry are other pressures and threats on rocky habitats, but in many cases compensations and mitigation of their potential effects are implemented, such as shrub control by climbers organizations and the Life "In Quarries". Nevertheless, most of the surfaces of rocky slopes and screes lack active management and are partly or totally shaded by tree vegetation or ivy development.

Annex II, IV and V species having a substantial share of their habitat in rocky habitats and dunes

In Wallonia, the following annex II, IV and V species have all or a substantial share of their habitat in heathlands.

Plant species:

- *Trichomanes speciosum*

Reptile species:

- *Coronella austriaca*
- *Lacerta agilis (dunes)*
- *Podarcis muralis*

The three reptile species were considered in bad or inadequate conservation status, depending on species and biogeographic regions: bad for *L. agilis* in the Continental region (where it is confined) and for *C. austriaca* in the Atlantic region, due to small size of populations and insufficient connectivity between them.

General measures taken so far for these species include tree cutting and wood piles installation in some sites.

Bird species breeding in rocky habitats and dunes

In Wallonia, 2 bird species (listed in Annex I of the Birds Directive or considered as trigger species for SPA designation) have regular breeding populations in rocky habitats. These are:

- *Bubo bubo*
- *Falco peregrinus*

The conservation status of these 2 species in Wallonia is good, no specific measure is needed other than ensuring tranquillity and conservation of habitats.

Measures needed to maintain or restore favourable conservation status

Maintenance needs:

Active management measures are required to avoid further deterioration and improve structures and functions of the following areas covered by Annex I rocky habitats (all figures below are based on information reported under Article 17 habitats Directive of 2013 or best expert judgement since last reporting):

- ***Inland dunes with open Corynephorus and Agrostis grasslands*** *(HT 2330):* 131 ha of which 48 ha in Natura 2000 sites

- ***Medio-European upland siliceous screes*** *(HT 8150):* 25 ha of which 12.5 ha in Natura 2000 sites
- ***Medio-European calcareous scree of hill and montane levels*** *(HT 8160*):* 107 ha of which 40 ha in Natura 2000 sites
- ***Calcareous rocky slopes with chasmophytic vegetation*** *(HT 8210):* 141 ha of which 76 ha in Natura 2000 sites
- ***Siliceous rocky slopes with chasmophytic vegetation*** *(HT 8220):* 73 ha of which 38 ha in Natura 2000 sites

An important share of the surfaces are in a degraded condition, invaded by trees, shrubs and (for dunes) IAS, without natural dynamics (screes and dunes) or (for rocky habitats) deteriorated by securing infrastructures, so maintenance needs are very close to heavy restoration actions. They are very costly in rocky habitats due to their very poor accessibility.

Re-creation needs:

Re-creation of surfaces is needed to improve the surface area parameter and to improve connectivity of ***inland dunes with open Corynephorus and Agrostis grasslands (HT 2330): creation of 75 ha of which 25 ha in Natura 2000 sites.***

Creation of new rocky habitats is very hard and artificial work, so it is not considered feasible in other sites than quarries in activity. Furthermore, development of chasmophytic vegetation usually takes a very long time. It is thus not further developed in this document.

Prioritization of measures to be implemented during the next MFF period

Heavy management/restoration should take place on the following surfaces of **inland dunes grasslands (Ht 2330)** during the next MFF period: 75 ha to be created, of which 25 ha in Natura 2000 sites; 55 ha of highly degraded existing surfaces needing heavy restoration, of which 13.5 ha in Natura 2000 sites → total area to be restored = **130 ha of which 38.5 ha in Natura 2000 sites.** Restoration will mainly consist in scraping and/or sod-cutting, shrubs and tree removals. Furthermore, land must be purchased in order to make restoration on an estimated 20 ha, of which 5 ha in Natura 2000 sites; and 45 ha of restored surfaces would need to be fenced, of which 12 ha in Natura 2000 sites.

Recurrent management will also be needed. The assessment of needs for the next MFF period for **inland dunes grasslands (Ht 2330)** is the management of 55 ha of existing surfaces and 65 ha (half of 130 ha due to progressive implementation) of the surfaces under heavy restoration = **120 ha of which 45 ha in Natura 2000 sites**

The focus on rocky habitats **restoration** for the next MFF period will be set on the most valuable habitat patches in terms of chasmophytic vegetation, inside Natura 2000 sites. The assessed share of the surface is approximately 25% of the total surface of each habitat, i.e.:

- ***Medio-European upland siliceous screes*** *(HT 8150):* 6 ha totally inside the Natura 2000 network
- ***Medio-European calcareous screes of hill and montane levels*** *(HT 8160*):* 25 ha totally inside the Natura 2000 network
- ***Calcareous rocky slopes with chasmophytic vegetation*** *(HT 8210):* 35 ha totally inside the Natura 2000 network
- ***Siliceous rocky slopes with chasmophytic vegetation*** *(HT 8220):* 18 ha totally inside the Natura 2000 network

Management of screes and rocky slopes will mainly consist is shrubs, lianas and trees removal inside and around habitat patches. It will take place in 2 steps: a heavy management followed by a recurring management taking place every 3-4 years. For the assessment of costs, heavy management will concern all surfaces mentioned above, while only half of these surfaces will benefit from a second management during the next MFF period (due to progressive implementation).

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 (nb of ha)	Estimated cost in Euros (annualised)	Possible EU co-funding source
Restoration of inland dunes with open Corynephorus and Agrostis grasslands (HT 2330) (creation of new surfaces and heavy restoration in degraded existing surfaces : scraping, trees and shrubs suppression…) *average cost per ha : 7500 €*	One-off	38.5	41250	
Land acquisition for the restoration of inland dunes with open Corynephorus and Agrostis grasslands (HT 2330) *average cost/ha: 20 000 €*	One-off	5	14286	
Agri-environmental schemes for recurring management of existing and restored inland dunes (HT 2330) *average cost/ha/year: 250 €*	Recurrent	22	5500	
Recurrent management (without AES) of existing and restored inland dunes (HT 2330) *average cost/ha/year: 250 €*	Recurrent	23	5750	
Indemnities related to preventive measures in Natura 2000 sites - linked to inland dunes (HT 2330) *average cost/ha/year: 440 €*	Recurrent	45	19800	
Heavy management/restoration of siliceous screes HT 8150 (shrubs and trees removing) *average cost/ha : 25 000 €*	One-off	6	21429	
Heavy management/restoration of calcareous screes HT 8160 (shrubs and trees removing) *average cost/ha : 25 000 €*	One-off	25	89286	
Heavy management/restoration of calcareous outcrops HT 8210 (shrubs and trees removing) *average cost/ha : 25 000 €*	One-off	35	125000	
Heavy management/restoration of siliceous outcrops HT 8220 (shrubs and trees removing) *average cost/ha : 25 000 €*	One-off	18	64286	
First management after heavy restoration of siliceous screes HT 8150 (control of shrubs regrowth) *average cost/ha: 10 000 €*	Recurrent (but only once during next MFF)	3	4286	

First management after heavy restoration of calcareous screes HT 8160 (control of shrubs regrowth)* *average cost/ha: 10 000 €*	Recurrent (but only once during next MFF)	12	17143	
First management after heavy restoration of calcareous outrcrops HT 8210 (control of shrubs regrowth) *average cost/ha: 10 000 €*	Recurrent (but only once during next MFF)	17	24286	
First management after heavy restoration of siliceous outcrops HT 8220 (control of shrubs regrowth) *average cost/ha: 10 000 €*	Recurrent (but only once during next MFF)	9	12857	
TOTAL			445157	

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

Name and short description of the measures	Type of measure*	Target (nb of ha)	Estimated cost in Euros (annualised)	Possible EU co-funding source
Restoration of inland dunes with open Corynephorus and Agrostis grasslands (HT 2330) (creation of new surfaces and heavy restoration in degraded existing surfaces : scraping, trees and shrubs suppression…) *average cost per ha : 7500 €*	One-off	91.5	98036	
Land acquisition for the restoration of inland dunes with open Corynephorus and Agrostis grasslands (HT 2330) *average cost/ha: 20 000 €*	One-off	15	42857	
Agri-environmental schemes for recurring management of existing and restored inland dunes (HT 2330) *average cost/ha/year: 450 €*	Recurrent	38	9500	
Recurrent management (without AES) of existing and restored inland dunes (HT 2330) *average cost/ha/year: 450 €*	Recurrent	37	9250	
TOTAL			159643	

Expected results for targeted species and habitat types

A full implementation of the prioritized restoration and management measures targeting inland dunes grasslands (2330) is expected to lead to substantial increase of the surface parameter and improvement of the structures and functions of the habitat type by 2028.

For rocky habitat types, restoration of existing surfaces would mainly have positive impact on the structures and functions parameters, providing positive trends by 2028. This will also allow maintenance and maybe improvement of conservation status of the 2 birds species linked to rocky slopes.

For reptile species, implementation of restoration measures in rocky habitats would contribute to the improvement of their conservation, but these species are not exclusive to rocks, so the improvement

of their conservation status will also depend on the quality of other habitats (grasslands, heathlands...) and on the measures mentioned in other sections of this document (E.2.X and E.3).

E.2.8. Freshwater habitats (rivers and lakes)

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

Annex I freshwaters habitats

Among the freshwater habitat types listed in Annex 1 of the Habitats Directive, 7 occur in Wallonia. These are:

- *Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea (3130)*
- *Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. (3140)*
- *Natural eutrohpic lakes with Magnopotamion or Hydrocharition – type vegetation (3150)*
- *Natural dystrophic lakes and ponds (3160)*
- *Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion Vegetation (3260)*
- *Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation (3270)*
- *Petrifying springs with tufa formation (Cratoneurion) (7220*)*

According to last article 17 reporting, all standing water habitats have a bad or inadequate assessment for their conservation status, the main reason being bad structures and functions. Main pressures and threats include high fish density, inadequate water level management, artificial banks and invasive alien plant species.

Main measures taken so far for standing water include dystrophic ponds creation in the framework of local restoration actions in the Atlantic region and Life projects in Ardenne, as well as the active and recurring management of a small share of other standing water bodies, incl. some major sites (Harchies, Virelles, Luchy...). Management of the water bodies conducted so far consists in varying water levels and, in some cases, in a regular draining to remove carps.

But most of Walloon ponds habitats are not adequately managed for the maintenance and improvement of structures and functions.

As concerns running water habitats, assessments were better, but pressures are numerous and threats still remain, for instance diffuse pollution, flooding modifications, siltation... Main measures taken so far are linked to the implementation of the Water Framework Directive, and to previous Life Projects targeting the improvement of river species habitats (Life Moule Perlière, Life Loutre).

Annex II, IV and V species having a substantial share of their habitat in freshwater habitats

In Wallonia, the following annex II, IV and V species have all or a substantial share of their habitat in freshwater habitats:

Plant species:

- *Luronium natans*

Mollusc species:

- *Margaritifera margaritifera*
- *Unio crassus*

Annelid species:

- *Hirudo medicinalis*

Dragonfly species:

- *Coenagrion mercuriale*
- *Leucorrhinia caudalis*
- *Leucorrhinia pectoralis*
- *Oxygastra curtisii*

Crustacean species:

- *Astacus astacus*

Fish species:

- *Barbus barbus*
- *Cobitis taenia*
- *Cottus gobio*
- *Lampetra planeri*
- *Rhodeus sericeus amarus*
- *Salmo salar*
- *Thymallus thymallus*

Amphibian species:

- *Alytes obstetricians*
- *Pelophylax lessonae*
- *Rana kl. esculenta*
- *Rana temporaria*
- *Triturus cristatus*

Bat species:

- *Myotis dasycneme*
- *Myotis daubentoniii*

Mammal species:

- *Castor fiber*
- *Lutra lutra*
- *Mustela putorius*

Plants: The floating water-plantain *Luronium natans* was still recently considered as regionally extinct in Wallonia until it was rediscovered in 2010 in a private property of central Ardenne. Its very restricted range and population justify a bad conservation status in the last article 17 report.

Annelids: The conservation of the leech *Hirudo medicinalis*, known in only one site of the Atlantic region, was considered as unknown in the last article 17 reporting (2013) due to a lack of information in other parts of the territory.

Molluscs: As concerns bivalve species, range is assessed as favourable for both *Unio crassus* and *Margartifiera margaritifera*. According to last article 17 report (2013), population and habitat of the species were assessed as bad for *Unio crassus* in Atlantic Region and for *Margaritifera margaritifera,* and inadequate (but currently declining due to major pollution) for *Unio crassus* in Continental region. Thus, their current conservation status must be considered as bad. The mains pressures and threats behind this situation are agriculture (use of pesticides, fertilizers, erosion due to cattle), a lack of sewage treatment, inadequate ponds and forest management, invasive animal species (muskrat, racoon, zebra mussel...), cultivation of bio-fuels, and locally inappropriate beaver and game (wild boar) density.

Dragonflies and damselflies: Both *Leucorrhinia* species, linked to mesotrophic pools, had a bad conservation status in the last article 17 report due to their limited population sizes and to their very uncertain future prospects. *Oxygastra curtisii*, inhabiting slow moving rivers with old trees on the

banks, was reported in favourable conservation status while the damselfly *Coenagrion mercuriale,* thriving in little brooks, had an inadequate status because of the low size of southern populations (Belgian Lorraine) and the low quality of the remaining occupied habitats.

Crustaceans: The noble Crayfish (*Astacus astacus*) is still present in Wallonia but its status is considered bad due to very limited populations depleted by the *Aphanomycosis* disease.

Amphibians: The conservation status of 2 amphibian species (*T. cristatus* and *A. obstetricans*) was evaluated as bad in the last article 17 report (2013) for both Atlantic and Continental regions, mainly due to population and future prospects parameters. The main pressures for these species are the lack of connectivity between the remaining (scattered) populations, beside direct habitat destruction or degradation. Green frogs (*R. lessonae* and *R. kl. esculenta*) were considered in inadequate conservation status in the last reporting because of a lack of breeding habitats. Furthermore, future prospects were considered bad for the second taxon of this complex of species, due to the increasing range of another species of the same complex, *Rana ridibunda (*following introductions in the region where this last frog was naturally absent). *Rana temporaria* is the only frog species with a favourable conservation status in the last article 17 report.

Fishes: In Wallonia, 7 fish species are listed in Annex II of the Habitats Directive (*Cobitis taenia*, *Misgurnus fossilis, Rhodeus sericeus amarus, Salmo salar, Lampetra planeri, Cottus gobio and L. fluviatilis)*, while 2 (*Thymallus thymallus* and *Barbus barbus)* are listed Annex V species. All of them, except *Thymallus thymallus*, are present in both biogeographical regions and have an unfavourable status (U1 or U2), except for *Cottus gobio* and *Lampetra planeri* in the Continental Region. Due to water bodies quality, the status of those species are less favourable in the Atlantic Region. All species were reported in 2019 (SPW, 2019), even *Salmo salar* which was not reported in 2013 despite the existence of a reintroduction program (Salmon 2000).

Mammals: 3 mammal species (others than bats) are linked to freshwater: *Castor fiber*, *Lutra lutra*, (Annexes II and IV of the Habitats Directive) and M*ustela putorius* (Annex V). The general condition of these mammals is rather poor: in the Continental Region, only *Castor fiber* is in a favourable conservation status, while *Mustela putorius* has an inadequate status and *Lutra lutra* a bad status; in the Atlantic region, the picture is even darker since all species have a bad conservation status.

Measures taken so far for annex II, IV and V species

An action plan is currently implemented for *Luronium natans* in the framework of Life BNIP project, incl. reintroduction in a selection of ponds in Ardenne.

Measures of pool creation, favourable to dragonflies and amphibians species, were taken in woodlands, peatbogs and other nature reserves, incl. through several Life projects (Ardenne plateaux and the ongoing Life “in Quarries”) and through agri-environmental schemes. Life BNIP also foresees the creation of 500 new pools through the mobilization of RDP funds.

Measures taken so far for bivalve species include fences installation along rivers, sewage treatment, improvement of ponds management, restoration of river continuity for host-fish movement, land purchase, spruces plantations removal, and grasslands restoration in alluvial areas... with different funding sources including regional funds and Life projects. These measures are also favourable for several fish species. They should be amplified and additional measures are needed in order to improve the conservation status of the bivalve species and avoid local or regional extinctions.

Very few measures have been taken so far in running waters for dragonflies or damselflies, except the creation of some ditches for *Coenagrion mercuriale* in Lorraine (through an Interreg program and the ongoing Life 'Herbages') and restoration and rotational management of rivulets banks in Famenne (Life 'Prairies bocagères').

Bird species breeding B, staging S and wintering W in freshwater habitats

- *Acrocephalus arundinaceus B*
- *Acrocephalus schoenobaenus B*
- *Alcedo atthis B*
- *Anas crecca B W*
- *Anas querquedula S*
- *Ardea purpurea S*
- *Botaurus stellaris B W*
- *Chlidonias niger S*
- *Circus aeruginosus B*
- *Cygnus bewickii W*
- *Cygnus cygnus W*
- *Egretta alba B W*
- *Egretta garzetta B W*
- *Gallinago gallinago B W*
- *Ixobrychus minutus B*
- *Larus melanocephalus B*
- *Locustella luscinioides B*
- *Luscinia svecica B*
- *Lymnocryptes minimus W*
- *Nycticorax nycticorax B*
- *Mergus albellus W*
- *Philomachus pugnax S*
- *Pandion haliaetus S*
- *Platalea leucorodia B S*
- *Porzana porzana S*
- *Recurvirostra avosetta B S*
- *Philomachus pugnax S*
- *Riparia riparia B*
- *Sterna hirundo B*
- *Tringa glareola S*

In Wallonia, range is assessed as favourable for most of the wintering or breeding species. It is unfavourable for *Acrocephalus arundinaceus, Acrocephalus schoenobaenus* and *Gallinago gallinago,* and unevaluated for *Ardea purpurea, Chlidonias niger, Circus aeruginosus, Egretta garzetta, Larus melanocephalus, Lymnocryptes minimus, Nycticorax nycticorax, Philomachus pugnax, Platalea leucorodia, Porzana porzana, Recurvirostra avosetta, Sterna hirundo* and *Tringa glareola.*

Population is assessed as unfavourable for most of species except for *Alcedo atthis, Anas crecca, Egretta alba, Luscinia svecica, Mergus albellus* and *Pandion haliaetus.* It is unknown for *Ardea purpurea, Chlidonias niger, Circus aeruginosus, Egretta garzetta, Larus melanocephalus, Lymnocryptes minimus, Nycticorax nycticorax, Philomachus pugnax, Porzana porzana, Recurvirostra avosetta, Sterna hirundo* and *Tringa glareola.*

Most bird species related to aquatic habitats are thus in bad conservation status, mainly as a result of loss and fragmentation of suitable habitats, including inadequate management, natural evolution and disappearance of habitats. Lack and difficult accessibility of food as well as an excess of predators also affect significantly species status.

Measures undertaken and/or needed for the improvement of standing water habitats types are beneficial to the species, but additional measures are also needed and applied in some major sites on non-annex I habitats: reed beds are opened by scrubs removal, reeds cutting and, when possible, managed through water level control; ponds are maintained by scrubs removal and opening of the periphery habitats; the few islands present on large standing water bodies are kept open with mechanical action; wet grasslands and other wet tall-herbs meadows favourable for the above-mentioned species are generally managed by grazing.

Only a few sites have recently been the subject of important restorations, such as Genappe or Boneffe wetlands. Prolonged draining, reprofiling of the ground level, creation of channels in reedbeds, establishment of anti-predators fences are examples of actions carried out very locally and very occasionally.

Measures needed to maintain or restore favourable conservation status

Maintenance needs:

1. Active management measures are required to ensure maintenance, avoid deterioration and progressively lead to an improvement of the habitat and population of

1.a bivalve species (*Unio crassus, Margaritifera margaritifera*):

- ***Domestic sewage treatment: individual treatment*** *on* ***12% of Walloon territory****, and* ***16 collective sewage treatment plants,*** totally outside Natura 2000 sites
- ***Invasive alien animal species (muskrat, racoon) and beaver management:*** on approximately **12 % of the Walloon territory**
- ***Extensification of agricultural land in river basins***: decrease of pesticides and fertilizers use and of cattle load, buffer areas around water courses, erosion prevention, change in agricultural practices, **on 10 WFD water bodies**. The share of the surface to be extensified in Natura 2000 sites is approximately 10 %.
- ***Land purchase in the most sensitive areas in order to ensure the absence of inappropriate landuse impacting bivalve populations:*** 100 ha for *Unio crassus*, of which 80 ha in Natura 2000 sites

These measures for bivalve species should be implemented on 31 WFD water bodies. They would thus also contribute significantly to the improvement of habitat types 3260 and 3270 and of fish species. Furthermore, as habitat 3260 includes nearly all water courses of Wallonia and as the Water Framework Directive, the Nitrate Directive and the Pesticides Directive will also contribute through their obligations and related measures to the improvement of water courses, no further detail is given for the improvement of river habitats in this document.

1.b amphibian species

- **maintenance of 9000 existing ponds in agricultural landscape for species of community interest, of which 900 ha in Natura 2000 sites**

1.c bird species

- For birds feeding in water bodies or in their edges, and for birds breeding or feeding in vegetation belts bordering water bodies (*Alcedo atthis, Anas crecca, A. querquedula, Ardea purpurea, Botaurus stellaris, C. niger, Cygnus cygnus, C. bewickii, Egretta alba, E. garzetta, Gallinago gallinago, Ixobrychus minutus, , Larus melanocephalus, Luscinia svecica,*

Lymnocryptes minimus, Mergus albellus, Nycticorax nycticorax, Pandion haliaetus, Philomachus pugnax, Platalea leucorodia, Porzana porzana, Riparia riparia, Recurvirostra avosetta, Sterna hirundo, Tringa glareola) maintenance of biological quality, trophic level and adequate water level regulation of **existing surfaces of Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation (3150) in good conservation status.**

- For birds breeding or feeding in flooded reed beds (*Acrocephalus arundinaceus, Ixobrychus minutus, Ardea purpurea, Botaurus stellaris, Circus aeruginosus, Egretta alba, Locustella luscinioides, Nycticorax nycticorax):* **maintenance of existing surfaces of flooded reedbeds in good conservation status, bordering or not water bodies.**
- For birds breeding or feeding in non-flooded reed beds (*Acrocephalus schoenobaenus* and *Luscinia svecica)*: maintenance of existing surfaces **of dry or wet reedbeds in good conservation status, generally not bordering water bodies**.
- For birds breeding or feeding in wet or flooded grasslands or other wet tall-herbs meadow bordering directly or not water bodies (*Acrocephalus schoenobaenus, Egretta alba, E. garzetta, Galinago Galinago, Luscinia svecica, Lymnocryptes minimus, Philomachus pugnax, Porzana porzana, Recurvirostra avosetta, Tringa glareola):* maintenance of existing surfaces **of wet or flooded grassland or other transitional tall herb humid meadows in good conservation status.**
- For birds breeding or feeding in wet or flooded low wood or scrub colonizing water bodies (*Ardea purpurea, Anas crecca, Anas querquedula, Egretta alba, E. garzetta,* I*xobrychus minutus, Nycticorax nycticorax, Platalea leucorodia):* maintenance of existing surfaces **of wet or flooded low wood and scrub in good conservation status, bordering water bodies.**
- For *Alcedo atthis, Botaurus stellaris, Egretta alba, E. garzetta, Ixobrichus minutus* and *Nycticorax nycticorax*: maintenance **of 100 ponds** close to or inside their breeding habitats (see before).
- For *Larus melanocephalus* and *Sterna hirundo*: maintenance of **3 small islands in a middle of water bodies of Harchies, Virelles and Genappe wetlands.**

<u>Restoration needs:</u>

1. Restoration/creation measures are also required to progressively lead to an improvement of the habitat of the species and to ensure population maintenance and/or progressively achieve population increases of the following species:

1.a bivalve species (*Unio crassus, Margaritifera margaritifera*):

- *Plantation of indigenous alluvial tree lines for the improvement of water quality (buffer areas and adequate water temperature) for bivalve species:* on a total estimated area of 100 ha, of which 80 ha in Natura 200 sites.
- *Restoration of longitudinal water continuity allowing host-fish movement for bivalve species:* removal of 16 obstacles, of which 14 in Natura 2000 sites.

1.b amphibian species

- Creation of 3000 ponds in agricultural landscape for species of community interest, of which 450 ponds in Natura 2000 sites

1.c fish species (*Barbus barbus, Cobitis taenia, Lampetra fluviatilis, Salmo salar, Thymallus thymallus*)

- *Restoration of longitudinal water continuity allowing host-fish movement for bivalve species:* removal of 16 obstacles, of which 14 in Natura 2000 sites.

- *Other measures (but not breeding and reintroduction – included in the next chapter) For species present in annex habitats of great rivers (M. fossilis and R. sericeus)*

1.d bird species

For birds feeding on water bodies or in edge of this, for birds breeding or feeding in vegetation belts bordering water bodies (*Alcedo atthis, Anas crecca, A. querquedula, Ardea purpurea, Botaurus stellaris, Chlidonias niger, Cygnus cygnus, C. bewickii, Egretta alba, E. garzetta, Gallinago gallinago, Ixobrychus minutus, , Larus melanocephalus, Luscinia svecica, Lymnocryptes minimus, Mergus albellus, Nycticorax nycticorax, Pandion haliaetus, Philomachus pugnax, Platalea leucorodia, Porzana porzana, Riparia riparia, Recurvirostra avosetta, Sterna hirundo, Tringa glareola)*:

- Creation of 100 ha (10-20 new large standing water bodies) of Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation (3150), totally outside Natura 2000 sites. After a soil study, creation measures would take place, including: raise the water table by removing the effects of drains, filling and blocking ditches; dig the soil to create a pool with permanent water; level the banks along the water body; as often as possible, install a dam or another system to divert water from a creek into the marsh; Establish a dam to divert excess water from the creek; raise the shoreline at the edge of the site to prevent runoff from the restored marsh and minimize the effects of water hydrology on the surrounding lands.

- **Restoration of 600 ha of** n**atural eutrophic standing water bodies with *Magnopotamion* or *Hydrocharition*-type vegetation (3150) in existing water bodies, totally in Natura 2000 sites.** Restoration of mesotrophic aquatic communities, with special focus on *Hydrochariton*, *Magnopotamion* and *Characea* vegetations and improvement of fish communities and other food avaibility e.g. macro-invertebrates and amphibians. After a preliminary assessment study, restoration measures would include potentially drying of ponds, removing adverse fish populations, introducing pike, removing woody bank vegetation and reintroducing native populations of “flagship” species.

For birds breeding or feeding in flooded reed beds (*Acrocephalus arundinaceus, Ardea purpurea, Botaurus stellaris, Circus aeruginosus, Egretta alba, Locustella luscinioides, Nycticorax nycticorax) a*nd for birds breeding or feeding in reed belts not directly bordering water bodies (*Acrocephalus schoenobaenus, Luscinia svecica*):

- **Creation of 50 ha of flooded reedbeds bordering or not water bodies of which 10 ha in Natura 2000 sites.** The creation of a reed bed can be done in parallel with the creation of a water body but can also be imagined as an objective in its own. In this case, it must integrate the establishment of a water level control system with water supply and evacuation. After a site selection study and preliminary assessment, creation measures would take place:
    - Land forming: shaping the surface of the ground; often combined with the construction of bunds, ditches and grips/foot-drains.
    - Water control systems installation (if not present).
    - Vegetation establishment: natural expansion or planting seeds, rhizomes or plants.

- **Restoration of 65 ha of reed beds bordering water bodies, of which 55 ha in Natura 2000 sites.** Reed beds are the early stages of succession from open water to woodland. Without management, they evolve thus towards scrubs and woodlands, and this natural process may be accelerated by drainage, water abstraction or isolation from water. Rehabilitation reverses this process and can use different techniques: water management (raising water levels), reeds cutting, reeds or litter burning, scrubs removal, litter layer removal. Except the first techniques, all other ones involve to lower the water level and dry reed beds. Channels facilitating feeding of birds would also be created.

For birds breeding or feeding in wet or flooded grassland or other wet tall-herbs meadow bordering or not directly water bodies (*Acrocephalus schoenobaenus, Egretta alba, E. garzetta, Galinago*

Galinago, Luscinia svecica, Lymnocryptes minimus, Philomachus pugnax, Porzana porzana, Recurvirostra avosetta, Tringa glareola):

- **Creation of 100 ha of wet or flooded grassland or other transitional tall herb humid meadows totally outside Natura 2000 sites.** This habitat consists in land which is periodically flooded or waterlogged by fresh water and where agricultural management promotes vegetation dominated by lower growing grasses, sedges and rushes. The creation of such habitat needs preliminary studies to identify suitable areas (soil, topography, rainfall, surface and ground water... analyses). Water levels control structures is a crucial factor which can require bunds and sluices. Inside the wet grassland, closed ditches, drainage channels or shallow water-filled depressions would be created to keep water as long as possible. Wet grassland would be surrounded of fences to keep livestock but also to protect breeding birds of terrestrial predators. Habitat management would be made through grazing or mowing.

For birds breeding or feeding in wet or flooded low wood or scrub colonizing water bodies (*Ardea purpurea, Anas crecca, Anas querquedula, Egretta alba, E. garzetta,* I*xobrychus minutus, Nycticorax nycticorax, Platalea leucorodia):*

- **Creation of 5 ha of wet or flooded low woods and scrubs bordering water bodies, totally inside Natura 2000 sites.** This habitat is used by several birds taking advantage of the protection offered both by the water and by scrubs. In wetland, this habitat is the last stage of succession from open habitat to woodland. Creation of the flooded low wood and scrub requires a reverse process of the classical management of wet habitats. Here, natural evolution without intervention is required. First measure involves removing water of flooded reed beds or grasslands long enough to promote the bush colonization which will evolve naturally towards woods. After several years of favourable conditions, woods must be flooded again and an appropriate water regime would be implemented in order to keep the newly created habitat.

For *Alcedo atthis, Botaurus stellaris, Egretta alba, E. garzetta, Ixobrychus minutus, Nycticorax nycticorax*:

- **Creation of 100 ponds close to or inside their breeding habitats (see before), totally inside Natura 2000 sites.**

For *Larus melanocephalus* and *Sterna hirundo*:

- **Creation of 10 new small islands inside water bodies, of which 5 in Natura 2000 sites.**

Prioritization of measures to be implemented during the next MFF period

All measures mentioned above for bivalve and amphibian species are considered priorities for the next MFF period.

For bird species, priority measures are:

- the restoration of part of the habitats mentioned above. Only surfaces of habitats are listed here, for more detail on the concrete actions, see above:

  - Restoration of 150 ha of Natural eutrophic standing water bodies with *Magnopotamion* or *Hydrocharition*-type vegetation (3150) in existing water bodies , totally in Natura 2000 sites
  - Creation of 30 ha of Natural eutrophic lakes (3150) totally outside Natura 2000 sites.
  - Restoration of 65 ha of existing reed beds bordering water bodies, of which 55 ha in Natura 2000 sites.

- Creation of 20 ha of flooded reed beds bordering or not water bodies, of which 10 ha in Natura 2000 sites.
- Creation of 30 ha of wet or flooded grassland or other transitional tall herb humid meadows totally outside Natura 2000 sites.
- Creation of 5 ha of wet or flooded low woods and scrubs bordering water bodies totally inside Natura 2000 sites.
- Creation of 30 ponds close to or inside the breeding habitats of targeted bird species (see before), totally inside Natura 2000 sites.
- Creation of 3 small islands inside standing water bodies, totally outside Natura 2000 sites.

➢ the recurring management of:
- flooded reed beds: water level control of 110 ha (totally in Natura 2000 sites) of existing and 50 ha (10 ha in Natura 2000 sites) of newly created surfaces; reed cutting in 40 ha (20 ha in Natura 2000 sites) of existing and 25 ha (5 ha in Natura 2000 sites) of newly created surfaces; scrub removal in 55 ha (35 ha in Natura 2000 sites) of existing and 25 ha (5 ha in Natura 2000 sites) of newly created surfaces.
- ponds inside or close to wetlands: management of 50 existing and 30 new ponds (removal of scrubs, sediments and undesirable fishes, cutting of vegetation), totally in Natura 2000 sites
- islands: 3 existing (in Natura 2000 sites) and 3 newly created (outside Natura 2000 sites) islands.

NB : recurring management of flooded grasslands is not described here but included in the management of extensive and permanent grasslands in section E.2.4.

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 (nb of ha or units)	Estimated cost in Euros (annualised)	Possible EU co-funding source
Extensification of agricultural land in river basins on 10 WFD water bodies for bivalve populations--> on 10 % of the surface in Natura 2000 sites	One-off	/	419286	
land purchase of sensistive areas in order to ensure the absence of inappropriate landuse impacting bivalve populations *average cost/ha: 10 000 €*	One-off	80	114286	
Plantation of indigenous alluvial tree lines for the improvement of water quality for bivalve species *average cost/ha: 3 500 €*	One-off	80	40000	
Removal of 14 obstacles for restoration of longitudinal continuity allowing host-fish movement for bivalve species *average cost/obstacle: 360 000 €*	One-off	14	720000	
Creation of ponds for amphibian species *cost/ponds: 1000 €*	One-off	450	64286	
AES payments for maintenance of existing and newly created ponds (estimated costs on half of total amount of ponds) *cost/pond*	Recurring	675	67500	

Site selection and preliminary assessment studies for the restoration of natural eutrophic lakes (3150) for bird species breeding, staging and wintering in freshwater habitats *cost/site: 5000 €*	One-off	7	5000	
Emptying of lakes (by pumping) for restoration of natural eutrophic lakes (3150) for bird species breeding, staging and wintering in freshwater habitats *average cost/site: 10 000 €*	One-off	3	4286	
Removal of adverse fish population in natural eutrophic lakes (3150) for bird species breeding, staging and wintering in freshwater habitatq *average cost/site: 3 500 €*	One-off	7	3500	
Installation of water control systems in natural eutrophic lakes (3150) for bird species breeding, staging and wintering in freshwater habitats *average cost/site: 30 000 €*	One-off	3	12857	
Removal and exportation of vases for the restoration of natural eutrophic lakes (3150) for bird species breeding, staging and wintering in freshwater habitats *average cost/m³: 6 €*	One-off	100000	85714	
Removal of woody bank vegetation for restoration of natural eutrophic lakes (3150) for bird species breeding, staging and wintering in freshwater habitats *average cost/site: 5 000 €*	One-off	7	5000	
Reintroduction of native populations of "flagship" fish species for the restoration of natural eutrophic lakes (3150) for bird species breeding, staging and wintering in freshwater habitats *average cost/site: 3 000 €*	One-off	7	3000	
Site selection and preliminary assessment studies for the restoration of existing flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *cost/site: 5000 €*	One-off	10	7143	
Emptying of lakes and reedbed by pumping for the restoration of existing flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *avarage cost/site: 10 000 €*	One-off	3	4286	
Reed cutting for the restoration of existing flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *average cost/ha: 1 000 €*	One-off	55	7857	
Scrub vegetation removal for the restoration of existing flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *average cost/ha: 2 000 €*	One-off	55	15714	

Litter removal (0,5 meter deep) for the restoration of existing flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *Average cost/ha: 30 000 €*	One-off	20	85714	
Creation of channels by soil removal (3 meters wide and one meter deep) for the restoration of existing flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *average cost/linear meter: 100 €*	One-off	5000	71429	
Site selection and preliminary assessment studies for the creation of flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *cost/ha: 5000 €*	One-off	10	7143	
Land acquisition for the creation of flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *average cost/ha: 20 000 €*	One-off	10	28571	
Shaping of the ground surface (often combined with the construction of bunds, ditches and grips/foot-drains) for the creation of flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *average cost/ha: 2000 €*	One-off	10	2857	
Water control systems installation for the creation of flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *Total cost/unit 30 000 €*	One-off	2	8571	
Vegetation establishment for the creation of flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *average cost/ha: 2000 €)*	One-off	10	2857	
Digging of the soil and leveling of banks for the creation of 30 ponds close to or inside wetlands for bird species breeding, staging and wintering in freshwater habitats *Average cost/unit: 5 000 €*	One-off	30	21429	
Water level control for the management of existing and newly created flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *Average cost/ha/year: 250 €*	Recurring	120	30000	
Reed cutting for the recurring management of a share of existing and newly created flooded reed beds bordering or not water bodies for bird species breeding, staging and wintering in	Recurring	25	2500	

freshwater habitats *Average cost/ha (every 5 years): 500 €*				
Scrubs removal for the recurring management of a share of existing and newly created flooded reed beds bordering or not water bodies for bird species breeding, staging and wintering in freshwater habitats *Average cost/ha (every 5 years): 1000 €*	Recurring	40	8000	
Scrubs removal, sediments removal, vegetation cutting and removal of undesirable fishes for the management of existing and newly created ponds inside or close to wetlands, for bird species breeding, staging anx wintering in freshwater habitats *average cost/unit (every 4 years): 1000 €*	Recurring	80	20000	
Management of existing islands in the middle of water bodies for bird species breeding, staging and wintering in freshwater habitats *average cost/unit/year: 2000 €*	Recurring	3	6000	
TOTAL			1874785 €	

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

Name and short description of the measures	**Type of measure***	**Target (nb of ha or units)**	**Estimated cost in Euros (annualised)**	**Possible EU co-funding source**
Incentives for domestic sewage treatment for improvement of water quality for bivalve species: individual treatment on 12 % of Walloon territory	One-off	/	1000000	
Domestic sewage treatment for improvement of water quality for bivalve species: collective sewage treatment plants *average cost/totally functional plant: 4 000 000*	One-off	16	9142857	
Invasive alien animal species (muskrat, racoon) and beaver management on approximately 12 % of Walloon territory	Recurring	/	25714	
Extensification of agricultural land in river basins on 10 WFD water bodies for bivalve populations--> on 90 % of the surface outside the Natura 2000 network	One-off	/	3773571	
land purchase of sensistive areas in order to ensure the absence of inappropriate landuse impacting bivalve populations *average cost/ha: 10 000 €*	One-off	20	28571	
Plantation of indigenous alluvial tree lines for the improvement of water quality for bivalve species *average cost/ha: 3 500 €*	One-off	20	10000	

Removal of 2 obstacles for restoration of longitudinal continuity allowing host-fish movement for bivalve species *average cost/obstacle: 360 000 €*	One-off	2	102857	
Creation of ponds for amphibian species *cost/ponds: 1000 €*	One-off	2550	364286	
AES payments for maintenance of existing and newly created ponds (estimated costs on half of total amount of ponds) *cost/pond*	Recurring	5325	532500	
Site selection and preliminary assessment studies for the creation of natural eutrophic lakes (3150) for bird species breeding, staging and wintering in freshwater habitats *cost/ha: 5000 €*	One-off	30	21429	
Land acquisition for the creation of natural eutrophic lakes (3150) for bird species breeding, staging and wintering in freshwater habitats *average cost/ha: 20000 €*	One-off	30	85714	
Removing the effects of drains, filling and blocking the ditches for the creation of natural eutrophic lakes (3150) for bird species breeding, staging and wintering in freshwater habitats *average cost/ha: 2000 €*	One-off	30	8571	
Dig the soil to create a pool with permanent water, leveling locally of banks along the water body for the creation of natural eutrophic lakes (3150) for bird species breeding, staging and wintering in freshwater habitats *average cost/ha: 10000 €*	One-off	30	42857	
Installation of a dam or another system to divert water from a creek into the marsh for the creation of natural eutrophic lakes (3150) for bird species breeding, staging and wintering in freshwater habitats *average cost/system: 15 000 €*	One-off	3	6429	
Establishment of a dam to divert excess water of the lake (3150) to the creek for the creation of natural eutrophic lakes (3150) for bird species breeding, staging and wintering in freshwater habitats *average cost/unit: 15 000 €*	One-off	3	6429	
Site selection and preliminary assessment studies for the creation of flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *cost/ha: 5000 €*	One-off	10	7143	
Land acquisition for the creation of flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *average cost/ha: 20 000 €*	One-off	10	28571	

Shaping of the ground surface (often combined with the construction of bunds, ditches and grips/foot-drains) for the creation of flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *average cost/ha: 2000 €*	One-off	10	2857	
Water control systems installation for the creation of flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *Total cost/unit 30 000 €*	One-off	2	8571	
Vegetation establishment for the creation of flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *average cost/ha: 2000 €)*	One-off	10	2857	
Site selection and preliminary assessment studies for the restoration of existing flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *cost/site: 5000 €*	One-off	2	1429	
Emptying of lakes and reedbed by pumping for the restoration of existing flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *avarage cost/site: 10 000 €*	One-off	2	2857	
Litter removal (0,5 meter deep) for the restoration of existing flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *Average cost/ha: 30 000 €*	One-off	5	21429	
Reed cutting for the restoration of existing flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *average cost/ha: 1 000 €*	One-off	10	1429	
Scrub vegetation removal for the restoration of existing flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *average cost/ha: 2 000 €*	One-off	10	2857	
Creation of channels by soil removal (3 meters wide and one meter deep) for the restoration of existing flooded reed beds bordering water bodies for bird species breeding, staging and wintering in freshwater habitats *average cost/linear meters: 100 €*	One-off	1000	14286	
Site selection and preliminary assessment studies for the creation of wet or flooded grassland or other transitional tall herb humid meadows for bird species breeding, staging and wintering in	One-off	30	21429	

freshwater habitats *average cost/ha: 5000 €*				
Installation of water levels control structures for the creation of wet or flooded grassland or other transitional tall herb humid meadows for bird species breeding, staging and wintering in freshwater habitats *average cost/structure: 10000 €*	One-off	6	8571	
Installation of bunds with soil excavated (and designing of water-filled closed ditches, drainage channels or shallow depressions) for the creation of wet or flooded grassland or other transitional tall herb humid meadows for bird species breeding, staging and wintering in freshwater habitats *average cost/ha: 2 000 €*	One-off	30	8571	
Fencing of created wet or flooded grassland or other transitional tall herb humid meadows for bird species breeding, staging and wintering in freshwater habitats *average cost/km: 10 000 €*	One-off	6	8571	
Emptying of water bodies and moving of soil for the creation of islands for bird species breeding, staging and wintering in freshwater habitats *average cost/island: 15 000 €*	One-off	3	6429	
Water level control for the management of newly created flooded reed beds bordering or not water bodies for bird species breeding, staging and wintering in freshwater habitats *Average cost/ha/year: 250 €*	Recurring	30	7500	
Reed cutting for the recurring management of a share of existing and newly created flooded reed beds bordering or not water bodies for bird species breeding, staging and wintering in freshwater habitats *Average cost/ha (every 5 years): 500 €*	Recurring	10	1000	
Scrubs removal for the recurring management of a share of existing and newly created flooded reed beds bordering or not water bodies for bird species breeding, staging and wintering in freshwater habitats *Average cost/ha (every 5 years): 1000 €*	Recurring	10	2000	
Management of newly created islands in the middle of water bodies for bird species breeding, staging and wintering in freshwater habitats *average cost/unit/year: 2000 €*	Recurring	3	6000	
TOTAL			15316143 €	

Expected results for targeted species

A full implementation of the priority restoration and management measures targeting the Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation (3150) and their adjacent vegetation belts should result in a substantial increase in their total area and an improvement of

structures and functions, leading to the improvement of habitat 3150 conservation status and the increase (at worst the stabilization) of populations of many wetland bird species.

The improvement of the quality and total area of water bodies (3150) will consequently lead to the improvement of wintering or even breeding populations of the water birds occupying these lakes for feeding (Swans, Ducks, Terns, Terns, Ospreys).

The improvement of the vegetation belts adjacent to waterbodies will benefit to priority and emblematic species of reed beds, including *Botaurus stellaris* (currently 0 to 1 breeding pairs), *Acrocephalus arundinaceus* (currently 0 to 2 breeding pairs), *Ixobrichus minutus* (currently 2 at 4 breeding pairs), *Locustella luscinioides* (currently 0 to 5 breeding pairs) and *Circus aeruginosus* (currently 8 to 12 breeding pairs), whose populations should at least double by 2028. For *Botaurus stellaris*, the objective would even be to reach a regular population of 5 breeding pairs and to prove the reproduction.

Other species of *Ardeidae* such as *Egretta alba*, *E. garzetta, Nyctircorax nycticorax* will also benefit from the implementation of measures including the creation of flooded low woodlands and scrubs. Their numbers could increase exponentially by 2028 if good winter conditions persist.

Shorebirds in general could quickly get used to stop in new flooded grasslands and increasing numbers of migrating birds or wintering birds could lead to new breeding birds installations.

The restoration and creation of ponds and standing water bodies will benefit to other species, in particular dragonflies (*Leucorrhinia pectoralis* and *L. caudalis*...) and amphibians (*Triturus cristatus, Alytes obstetricians, Rana lessonae, Rana esculenta*...) and potentially improve their conservation status in some regions. They could improve also the conservation status of the floating plant *Luronium natans*, if combined with reintroduction operations.

The water quality improved in freshwater habitats will benefit among others to water quality sensitive species such as Margaritifera and Unio crassus.

E.2.9. Others (caves, etc.)

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

See Art 17 report.

Measures needed to maintain or restore favourable conservation status

The species linked to caves have been integrated into the E.3 section.

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.				

* indicate whether the measure is recurring or one-off

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

http://biodiversite.wallonie.be/fr/accueil.html?IDC=6

https://agriculture.wallonie.be/programme-wallon-de-developpement-rural-2014-2020//

http://environnement.wallonie.be/legis/consnat/cons001.htm

http://environnement.wallonie.be/legis/consnat/natura161.html

http://environnement.wallonie.be/legis/consnat/natura162.html

http://environnement.wallonie.be/legis/consnat/cons045.htm

http://environnement.wallonie.be/legis/consnat/natura019.htm

http://environnement.wallonie.be/legis/consnat/natura075.html

http://life-bnip.be/fr/

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

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

Current status of the species

Annex II and IV species

In Wallonia, the following annex II and IV require additional specific measures not related to specific ecosystems or habitats:

- Margaritifera margaritifera
- Unio crassus
- *Euphydryas aurinia* (breeding operations)
- *Bufo calamita* (measures in quarries and other anthropic habitats)
- *Alytes obstetricans* (measures in quarries and other anthropic habitats)
- *Bombina variegata* (measures in quarries and other anthropic habitats)
- *Podarcis muralis* (measures in quarries and other anthropic habitats)
- *Coronella austriaca*
- *Lacerta agilis*

- *Chiroptera spp. (*for buildings: antropophilic species of Annexes II and IV: *Eptesicus spp., Myotis myotis, M. emarginatus, other Myotis spp., Pipistrellus spp., Plecotus spp., Rhinolophus ferrumequinum, R. hipposideros; f*or caves: all bats species hibernating in caves, namely *Rhinolophus spp., Myotis spp., Barbastella barbastella, Plecotus spp.)*

Molluscs: As concerns bivalve species, the range is assessed as favourable for both *Unio crassus* and *Margartifiera margaritifera.* Residual populations, even isolated at the scale of a watercourse, remain viable if restoration is carried out.

(The species was indeed, before 1950, widespread in the Ardennes. If the streams at watershed level and the remaining populations (Our, Vierre, Sûre, Rulles) would be restored, the species would remain established in the long term in Wallonia. For example, Anlier, a stream with young pearl mussels, has always been isolated from the Rulles.)

According to last article 17 report (2013), population and habitat of the species were assessed as bad for *Unio crassus* in Atlantic Region and for *Margaritifera margaritifera,* and inadequate (but currently declining due to major pollution) for *Unio crassus* in Continental region. Thus, their current conservation status must be considered as bad.

Until now, Margaritifera has benefited from a dedicated Life project aimed at restoring the habitat of the species in the Rulles, Sûre, Vierre and Our basins.

Clearly positive effects are observed on the habitat without it being possible to detect effects on pearl mussel populations. This species, however, has become a decision-making factor for all improvement operations in the environments where it is present, particularly in terms of water treatment.

The pollution of the Sûre in 2015 activated the implementation of compensation / remedial measures (breeding of mussel populations) and improvement of the habitat.

An EMFF project is in the process of being started. It will aim the ecological restoration of a section of the Sûre. This restoration will be the subject of a close monitoring that will sort out the lessons for the rest of the re-habilitation process and the implementation of new projects.

Euphydryas aurinia is one of the most severely threatened butterflies in Wallonia. All parameters of its conservation status were assessed as bad in the previous article 17 report (2013). The main pressure was the high habitat fragmentation, leading to the isolation and small sizes of the remaining populations, which impede re-colonisation of sites after population extinctions and can induct genetic inbreeding and potential fertility depletion. The only measures taken until now for this species were habitat restoration by enlarging forest rides (in Fagne and Famenne) and restoring humid grasslands (in Ardenne and Belgian Lorraine) in the framework of the Butterfly Life project (2009-2014).

The conservation status of the 3 above-mentioned amphibian species (*Alytes obstetricans*, *Bombina variegata* and *Bufo calamita*) were evaluated as bad in the previous article 17 report, mainly on the basis of population and future prospects parameters. Likewise, the main pressures for these species are the lack of connectivity between the remaining (scattered) populations, beside direct habitat destruction in quarries and industrial fallow lands. Some punctual measures of pool creation are taken in the framework of the ongoing “Life in Quarries” project.

The conservation status of *Podarcis muralis* was inadequate in the last reporting (2013), mainly because of habitat trends and future prospects. If the range and population were considered favourable in the Continental region, there were classified as inadequate in the Atlantic region. No specific measures have been taken until now for this species except punctual tree cutting measures in some rocky sites.

In Wallonia, 7 bat species are listed in Annexes II and IV of the Habitat Directive and 14 only in Annex IV. The annex II species, considered as triggering species for the designation of the Natura 2000 network, are *Barbastella barbastellus*, *Myotis bechsteinii, M. dasycneme, M. emarginatus, M. myotis, Rhinolophus ferrumequinum, R. Hipposideros.* All of them experienced a severe decline during the years 1950-1970. Today, partly due to conservation measures that have been taken, populations seem to increase slowly again but, despite this recent improvement, populations remain too low compared

to favourable reference populations. In the Continental region, of the 18 bats species evaluated, conservation status was favourable for 5 of them, inadequate for 4 and bad for 4. Evaluation was not possible for 5 species due to a lack of information (status "unknown"). In the Atlantic region (15 species), conservation status was favourable for 5 species, inadequate for 4, bad for 3 and unknown for 3.

Main measures taken so far in Wallonia for bats conservation were the adoption of a legal protection status and the ban of the most noxious pesticides. Specific conservation measures have also been taken with the project « Combles et Clochers » whose goal was to adapt churches attics for wildlife, and some hibernations sites have been closed to protect major hibernating sites. More recently some interesting and specific conservation measures have been taken in the framework of LIFE "Pays mosan" and "Life Bocage" but very few measures have been taken for forest bat species and more generally the improvement of roost sites, hunting areas and flying paths remains insufficient.

Roosting and hibernating sites conservation are major stakes to ensure the long-term conservation of bats. Those particularly sensitive sites are respectively threatened by building enhancement (renovation and insulation) and uncontrolled/inadequate visits of caves and other hibernating sites. These threats can be mitigated by attic (or caves) developments and the physical protection of caves, mines, forts, underground quarries or other hibernating sites entrances.

Annex I Birds species

In Wallonia, the following Annex I or SPA-triggering species require additional specific measures not related to specific ecosystems or habitats:

- the 3 breeding *Circus sp.*
- *Crex crex*
- *Riparia riparia*
- *Tetrao tetrix*
- *Tetrastes bonasia.*

The breeding population of *Riparia riparia* is estimated around 2000 to 2500 pairs, is fluctuating and more and more confined to artificial sites (quarries). Less than 5% of the nests are found in their natural habitat - eroded river bank.

The breeding population of *Crex crex* is on the verge of extinction in Wallonia (a few singing males).

Circus pygargus and *Circus cyaneus* have very small (<5 pairs) and fragile breeding population. The *Circus aeruginosus* population is slightly higher (5-15 pairs) because it is also found in some wetlands (reedbeds).

Tetrao tetrix is on the verge of extinction in Wallonia, after a long-term decline (a few males left).

Tetrastes bonasia is also on the brink of extinction, although a few individuals may still remain. In the case of this species, the situation is particularly worrying, as the Walloon population is part of a subspecies *T. b. rhenana* only restricted to Western Germany, Luxembourg, the French Ardennes and Vosges. This subspecies in globally critically endangered.

Measures needed to maintain or restore favourable conservation status

1. **For *Euphydrias aurinia, Margaritifera margaritifera*, *Unio crassus, Tetrao tetrix and Tetrastes bonasia*:** Ex-situ or in-situ breeding for reintroduction and population reinforcement

2. **For species related to quarries and other anthropogenic environments, i.e. *Alytes obstetricians, Bufo calamita, Coronella austriaca, Lacerta agilis, Podacris muralis and Riparia riparia***:

- Creation of 5000 hibernacula (stones and other partially buried debris), of which 500 in Natura 2000 sites
- Creation of areas fenced against wild boar: 1000 km of fences, of which 100 km in Natura 2000 sites
- Shrub management for *Coronella austriaca* in 500 ha, of which 250 ha in Natura 2000 sites
- Creation of 100 km of lines of dead wood piles, of which 10 km in Natura 2000 sites
- Creation of 250 ponds made with water-repellent concrete with integrated water emptying system for *Alytes obstetricans*, Bombina variegata and Bufo calamita of which 50 ponds in Natura 2000 sites
- Management of 500 ha of areas surrounding created ponds for amphibians.

3. **For bat species:**
   - Creation of 100 new "bat houses", of which 50 in Natura 2000 sites
   - Conversion of 700 attics, of which 70 in Natura 2000 sites
   - Creation and setting of 5000 nest boxes, of which 3500 in Natura 2000 sites
   - Setting of protection infrastructures for 200 winter roosts, of which 140 in Natura 2000 sites

4. **For *Circus* spp. and *Crex crex*:** Yearly identification of nesting areas, followed by their protection through contact with concerned farmers and the payment of compensations

Prioritization of measures to be implemented during the next MFF period

1. **Ex-situ and in-situ breeding**

1a. *Euphydrias aurinia*: ex-situ breeding during 5 years

1b. *Margaritifera margaritifera* and *Unio crassus*: ex-situ breeding by subcontracting in existing facilities,

- for ex situ breeding **Margaritifera margaritifera:** the costs take into account:

  • Action 1: biomonitoring using young mussels placed in hermetically sealed boxes every 250-500m in the bottom of streams. The results make it possible to locate the best sections (survival rate and highest growth rate) in relation to the quality / quantity of food resources, temperature, water quality, suspended materials. These areas are then targetted for the spill of young mussels into the watercourse.
  • Action 2: the production of young mussels and the spill in the water bodies.

  The costs were obtained by quotes (available on request) from the Kalborn breeding station.

- for ex situ breeding **Unio crassus:** the costs take into account:

No biomonitoring needed, the experience from the Life Unio of the GDL will be effective enough to target the most appropriate areas for spilling.

. The costs are those used as part of the remedial measures following the pollution on the Sûre River in 2014, based on GDL estimates (available on request).

1c. *Tetrao tetrix:*

- Creation of an in-situ breeding center (« born to be free » technique)
- Yearly translocation actions

1d. *Tetrastes bonasia:* initiate an international effort of ex-situ breeding from eggs in France

2. **For species related to quarries and other anthropogenic environments, i.e. *Alytes obstetricians, Bufo calamita, Coronella austriaca, Lacerta agilis, Podacris muralis and Riparia riparia***:
   - Creation of 1000 hibernacula (stones and other partially buried debris), of which 100 in Natura 2000 sites
   - Creation of areas fenced against wild boar: 100 km of fences, of which 10 km in Natura 2000 sites
   - Shrub management for *Coronella austriaca* in 100 ha, of which 50 ha in Natura 2000 sites
   - Creation of 20 km of lines of dead wood piles, of which 2 km in Natura 2000 sites
   - Creation of 50 ponds made with water-repellent concrete with integrated water emptying system for *Alytes obstetricians, Bombina variegata* and *Bufo calamita*, of which 10 in Natura 2000 sites
   - Management of 50 ha (100 ha/2 due to progressive implementation of ponds creation) of areas surrounding created ponds for amphibians (frequency: once every 5 years).

3. **For bat species:**
   - Creation of 10 new "bat houses", of which 5 in Natura 2000 sites
   - Conversion of 70 attics, of which 7 in Natura 2000 sites
   - Creation and setting of 1500 nest boxes, of which 1050 in Natura 2000 sites
   - Setting of protection infrastructures for 50 winter roosts, of which 35 in Natura 2000 sites

4. **For *Circus* spp. and *Crex crex:***

Yearly identification of nesting areas followed by their protection through contact with concerned farmers and the payment of compensations.

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 (nb of ha or units)	Estimated cost in Euros (annualised)	Possible EU co-funding source
Monitoring of reintroduced populations of Unio crassus *cost/year: 45 000 € (6 years)*	Recurring	/	38571	
Monitoring of reintroduced populations of Margaritifera margaritifera *cost/year: 11 000 € (6 years)*	Recurring	/	9429	
Material cost for the creation of an in-situ breeding center for Tetrao tetrix *cost: 50 000 €*	One-off	/	7143	
Monitoring and maintenance of the breeding center for Tetrao tetrix *cost/year (5 years): 40 000 €*	Recurring (5 years)	/	28571	
Material and shipping cost for translocation actions of Tetrao tetrix *cost/year (5 years): 20 000 €*	Recurring (5 years)	/	14286	
Creation of hibernacula in quarries and anthropogenic environments for amphibian and	One-off	100	14286	

reptile species *cost/hibernacula: 1 000 €*				
Fencing against wild boars in quarries and anthropogenic environments for amphibian and reptile species *cost/km: 15 000 €*	One-off	10	21429	
Creation of lines of dead wood piles in quarries and anthropogenic environments for amphibian and reptile species *cost/km:5000 €*	One-off	2	1429	
Creation of ponds mades with water-repellenet concrete for Alytes obstetricans, Bufo calamatia and Bombina variegata in quarries and anthropogenic environments *cost/pond: 8000 €*	One-off	10	11429	
Manamgenet of areas surrounding created ponds for amphbians *cost/ha/5 years: 1000 €*	Recurring	10	20000	
Conversion of attics for bat species *cost/attic conversion:10 000 €*	One-off	5	7143	
Conversion of attics for bat species *cost/attic conversion:10 000 €*	One-off	7	10000	
Creation and setting of nest boxes for bat species *cost/nest box: 200 €*	One-off	1050	30000	
Setting of protection infrastructures for bats winter roosts *cost/infrastructure:10 000 €*	One-off	35	50000	
TOTAL			263714 €	

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

Name and short description of the measures	Type of measure*	Target (nb of ha or units)	Estimated cost in Euros (annualised)	Possible EU co-funding source
Personal cost for ex-situ breeding of Euphydrias aurinia *cost/year (5 years): 15 000 €*	Recurrent (5 years)	/	10714	
Material cost for ex-situ breeding of Euphydrias aurinia *cost/year (5 years): 1 000 €*	Recurrent (5 years)	/	714	
Ex-situ breeding of Unio crassus for reintroduction and population reinforcement *sub-contracting: 508 000 €*	One-off	/	72571	
Ex-situ breeding of Margaritifera magaritifera for reintroduction and population reinforcement *sub-contracting: 810 000 €*	One-off	/	115714	
Contribution to the international effort of ex-situ breeding of Tetrastes bonasia from eggs in France *cost: 250 000 €*	One-off	/	35714	

Creation of hibernacula in quarries and anthropogenic environments for amphibian and reptile species *cost/hibernacula: 1 000 €*	One-off	900	128571	
Fencing against wild boars in quarries and anthropogenic environments for amphibian and reptile species *cost/km: 15 000 €*	One-off	90	192857	
Creation of lines of dead wood piles in quarries and anthropogenic environments for amphibian and reptile species *cost/km:5000 €*	One-off	18	12857	
Creation of ponds mades with water-repellenet concrete for Alytes obstetricans in quarries and anthropogenic environments *cost/pond: 8000 €*	One-off	40	45714	
Manamgenet of areas surrounding created ponds for amphbians *cost/ha/5 years: 1000 €*	One-off	40	80000	
Creation of bat houses *cost/bat house:10 000 €*	One-off	5	7143	
Conversion of attics for bat species *cost/attic conversion:10 000 €*	One-off	63	90000	
Creation and setting of nest boxes for bat species *cost/nest box: 200 €*	One-off	450	12857	
Setting of protection infrastructures for bats winter roosts *cost/infrastructure:10 000 €*	One-off	15	21429	
Personal cost for yearly monitoring and localization of Circus nests and subsequent contact with farmers *Cost/year: 20 000 €*	Recurrent	/	20000	
Compensations to farmers for the protection of Circus nests *cost/nest: 100 € (average nb of nest/year = 30 due to progressive implementation*	Recurrent	30	3000	
Personal cost for yearly monitoring and localization of singing Crex crex and subsequent contact with farmers *Cost/year: 10 000 €*	Recurrent	/	10000	
Compensations to farmers for active protection of Crex crex nests *cost/ha/year: 1500 €*	Recurrent	20	30000	
TOTAL			889857 €	

Expected results for targeted species

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

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

Art 58 sexies of the Regional law on Nature conservation (12 July 1973) and Walloon regional order of 8th October 1998 fix the conditions for the compensation of damages caused by some protected species.

Only those who are foresters, farmers, fish farmers or gardeners can benefit of compensation. The possibility is limited to damages caused by wolf, beaver, grey heron, cormorant or otter.

Until now there is no financial support for prevention or mitigation.

Measures needed

The financial support of some prevention measures, when technically feasible, could be helpful to reduce the amount of damages and therefore their payment.

Furthermore, especially for the wolf, the compensation of damages caused to private properties (for example sheeps that are not part of a professional exploitation) could help for the acceptance of the species which are expected to cause frequent conflicts with human activities.

Prioritization of measures to be implemented during the next MFF period

- support the financing of mitigation measures for the damages of beaver (mesh for protection of trees or fences to prevent the entry of beaver in a property) and for the damages of wolf (fences) that encounter some conditions.
- enlarge the possibility of compensation of the damages to each people who undergoes damages (responding to some conditions).

List of prioritized measures to be carried out, and estimated costs for these 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 Protection of properties against damages of wolf (fences to prevent access)	One-off	10 km	100 000	
Measure 2 Protection of properties against damages of beaver (mesh for protection of trees, fences to prevent access ...)	One-off	5 km	50 000	
Measure 3 Enlarge the access to the compensation to all people who undergoes damages	Recurrent	N/A	200 000	
Measure 4 Acquisition of some fields which present a great biological interest thanks to the beaver.	Recurrent	15 Ha	150 000	
			500 000 €	

* indicate whether the measure is recurring or one-off

Expected results for targeted species

- The acceptance of cohabitation of protected species with human activities.
- Improvement of conservation status of the targeted species

E.3.3. References for additional species-specific measures not related to specific ecosystems or habitats

http://biodiversite.wallonie.be/fr/accueil.html?IDC=6

https://agriculture.wallonie.be/programme-wallon-de-developpement-rural-2014-2020//

http://environnement.wallonie.be/legis/consnat/cons001.htm

http://environnement.wallonie.be/legis/consnat/natura161.html

http://environnement.wallonie.be/legis/consnat/natura162.html

http://environnement.wallonie.be/legis/consnat/cons045.htm

http://environnement.wallonie.be/legis/consnat/natura019.htm

http://environnement.wallonie.be/legis/consnat/natura075.html

http://life-bnip.be/fr/

F. Further added values of the prioritized measures

NA

References

NA