



PRIORITISED ACTION FRAMEWORK (PAF) FOR NATURA 2000 in ESTONIA

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

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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 Directive¹ 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 Directive², 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/EEC³, 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 2000⁵ 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 economy⁶ 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 plan⁷, 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 Parliament⁸.

A.2 Structure of the current PAF format

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

An essential component of the current PAF format is the required breakdown of the Natura 2000- and green infrastructure-related conservation and restoration measures per broad ecosystem category. The proposed ecosystem typology of 8 classes is very largely based on the MAES typology, which was established as a conceptual basis for an EU wide ecosystem assessment⁹. 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 website¹⁰. It is recommended that the allocation of measures and costs to ecosystem types should largely follow this typology.

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

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>

("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 Estonia

Priority Action Framework has been compiled for the entire Estonian territory including marine areas.

Ministry of the Environment is coordinating the implementation of the Birds and Habitats Directives (incl. Natura 2000 network). Natura 2000 sites are protected nationally by the Nature Conservation Act as protected areas, limited-conservation areas, species' protection sites or individual protected natural objects. The manager of these areas is Environmental Board, who:

- decides the granting of a permit for the use of the environment determined by the Nature Conservation Act and the protection rules, and establishes the conditions of the use of the environment;
- participates in the strategic environmental assessment of plans liable to affect the protected natural object, participates in the proceedings of the environmental impact assessment of a planned activity, and establishes conditions for the planned activity or the plan liable to affect the protected natural object;
- organizes the activities arising from the protection rules or management plan;
- monitors the compliance with the requirements provided by the Nature Conservation Act and the protection rules, and as of 2019, exercises also state supervision.

State Forest Management Centre is organizing practical nature conservation works on state land and visits to protected natural objects.

The Estonian Environment Agency organises and conducts biodiversity monitoring and applied research for nature conservation, processes and analyses monitoring data, manages and analyses nature conservation data and manages databases.

IT Centre of the Ministry of the Environment is responsible for the IT issues of the administrative area, incl. databases, websites and technical functioning of information systems.

Estonian green network is integrated into the Planning Act, which means that it has to be taken into account during the national spatial planning process. Today, green network is a part of county-wide spatial plans and comprehensive plans of the local municipalities. Green network consists of core areas (e.g. protected areas) and their surroundings, as well as corridors between them ensuring territorial integrity. The Green Network Planning Guide has been compiled to provide technical and substantive suggestions on green network planning based on real life examples (primarily for specifying green

¹¹ <http://ec.europa.eu/environment/nature/natura2000/financing/>

network county-wide special plans in local comprehensive plans). The Guide helps to achieve that spatial conditions have been fulfilled for improving or maintaining the quality of biodiversity and ecosystem services provision.

PAF was compiled by the Ministry of the Environment in cooperation with Environmental Board, State Forest Management Centre and Environment Agency. The budget and sums spent from EAFRD and EMFF funds were provided by the Ministry of Rural Affairs.

Possible actions to be added in PAF were discussed in the working groups of Natura 2000 financing seminar on 14 November 2018. There were ca 50 participants from different relevant institutions (Ministry of the Environment, Environmental Board, Environment Agency, Environmental Inspectorate, State Forest Management Centre, Ministry of Rural Affairs, Ministry of Finance, Environmental Investment Centre, Estonian Private Forest Centre, Estonian Private Forest Union, SEI Tallinn, Estonian Fund for Nature, Estonian Ornithological Society, Estonian Society for Nature Conservation, Baltic Environmental Forum, Estonian Marine Institute, Estonian University of Life Sciences, Association of Estonian Cities and Rural Municipalities, NEEMO EEIG).

PAF was updated based on the outcomes of the seminar and was sent for review to the Ministry of Rural Affairs, Estonian Private Forest Centre, Estonian Private Forest Union, SEI Tallinn, Estonian Fund for Nature, Estonian Ornithological Society, Estonian Society for Nature Conservation, Baltic Environmental Forum, Estonian Marine Institute, University of Tartu, Estonian University of Life Sciences.

The following issues occurred when compiling PAF:

- The previous PAF (2014-2020) was based on the Nature Conservation Development Plan until 2020. The compilation of a new plan is in its initial state and therefore current PAF cannot be based on the comprehensive strategic planning document on nature conservation and biodiversity.
- PAF has to be based on reporting of the Habitats and Birds Directives where the status (trends) as well as pressures and threats of the habitats and species are given. PAF is based on the reporting of 2013, the results of which are already outdated. The next report will be completed in the first half of 2019 and there the current status (trends) as well as pressures and threats of the habitats and species will be given.
- For the period of 2021-2027, it is not always possible to indicate the planned activities, their costs and the basis of cost calculation at the desired level of detail.
- When developing next PAF format, more attention should be paid to user friendliness.

The cost of existing projects, activities and support schemes as well as the activities planned in the management plans and action plans were taken into account when assessing the financial needs.

A. 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		407 500
1.2.	Site administration and communication with stakeholders		574 000
1.3.	Monitoring and reporting	1 565 000	119 500
1.4.	Remaining knowledge gaps and research needs		1 602 000
1.5.	Natura 2000-related communication and awareness raising measures, education and visitor access		1 751 100
Sub-total		1 565 000	4 454 100
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		459 500
2.2.a	Heathlands and shrubs	125 000	158 643
2.3.a	Bogs, mires, fens and other wetlands		1 000 000
2.4.a	Grasslands	7 900 000	7 736 500
2.5.a	Other agroecosystems (incl. croplands)		303 000
2.6.a	Woodlands and forests	6 455 000	7 368 000
2.7.a	Rocky habitats, dunes & sparsely vegetated lands		59 700
2.8.a	Freshwater habitats (rivers and lakes)		2 267 000
2.9.a	Others		28 000
Sub-total		14 480 000	19 380 343
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		
2.3.b	Bogs, mires, fens and other wetlands		
2.4.b	Grasslands	600 000	
2.5.b	Other agroecosystems (incl. croplands)		28 000
2.6.b	Woodlands and forests		50 000
2.7.b	Rocky habitats, dunes & sparsely vegetated lands		
2.8.b	Freshwater habitats (rivers and lakes)		250 000
2.9.b	Others (caves, etc.)		
Sub-total		600 000	328 000
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	Species-specific measures and programmes not covered elsewhere		1 850 000
3.2.	Prevention, mitigation or compensation of damage caused by protected species	650 000	188 600
Sub-total		650 000	2 038 600
Annual total		17 295 000	26 201 043
Total (2021-2027)		304 472 301	

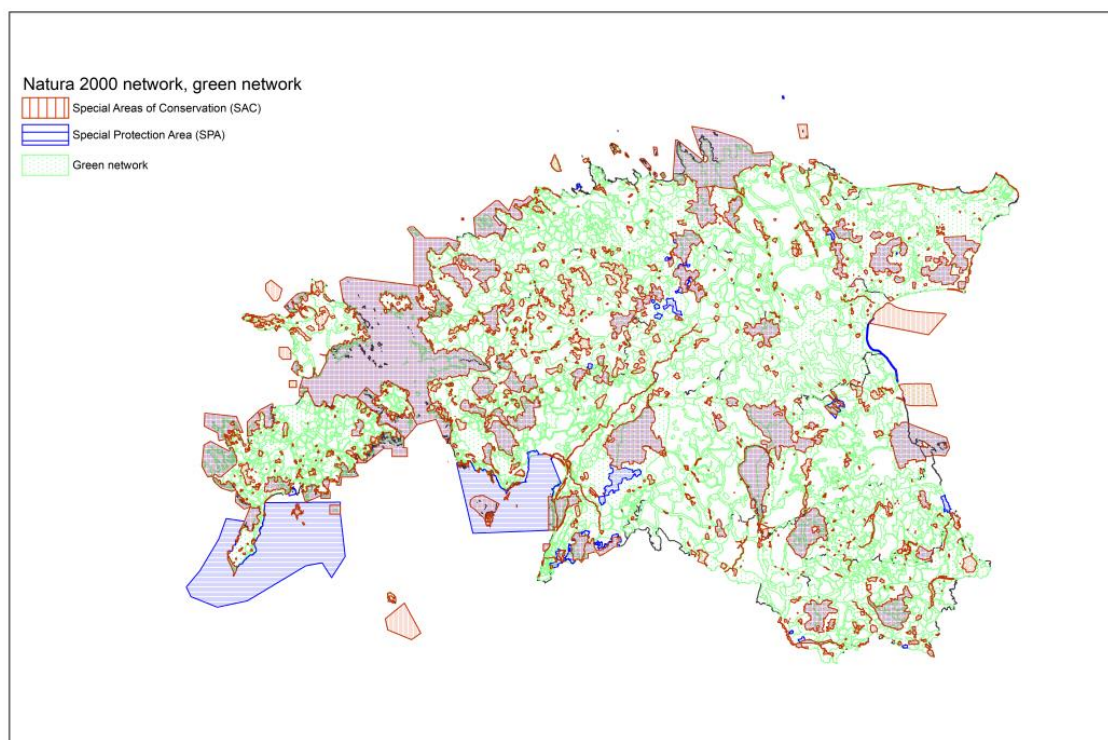
B. Current state of the Natura 2000 network

C.1. Area statistics of the Natura 2000 network

The Natura 2000 network in Estonia consists of 66 SPAs and 541 SCIs (Sites of Community Importance). The Natura network has been considered as sufficient for the conservation of all Annex I habitat types and Annex II species of Habitats Directive as well as for the Annex I species and migratory species of Birds Directive. We are extending existing Natura 2000 areas and considering submitting additional marine territory to ensure better coherence of Natura 2000 network.

	Natura 2000 area data per EU Member State (in km ²)						Proportion (in %) of the land area covered by:		
	Terrestrial			Marine					
Name of region	SCI	SPA	N2K	SCI	SPA	N2K	SCI	SPA	N2K
Estonia	7769	6167	8069	3919	6516	6792	17,1%	13,6%	17,8%
Total									

C.2. Map of the Natura 2000 network in Estonia



C. 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: **823 341 558 euros**

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 2014 -2017		Comments (relevance, experience to-date, challenges for the next period)
	EU	National	EU	National	EU	National	
M4 Investments in physical assets	248 360 490	42 769 498	-	-	-	-	
M7 Basic services & village renewal in rural areas	-	-	-	-	-	-	
M8 Investments in forest area	7 726 000	1 186 941	-	-	-	-	
M10 Agri-environment climate measures	184 198 500	47 155 167	29 175 000	8 325 000	9 343 559	3 114 497	Seminatural grassland support
M12 Natura 2000 payments	25 423 500	8 474 500	25 423 500	8 474 500	10 295 511	3 431 877	Natura 2000 support for private forest owners, Natura 2000 support for agriculture land
M13 Payments to areas facing natural or other specific constraints	-	-	-	-	-	-	
M15 Forest-environment al and climate services and forest conservation	-	-	-	-	-	-	
Other measures							
Subtotal	465 708 490	99 586 106	54 598 500	16 799 500	19 639 070	6 546 374	
TOTAL	565 294 596		71 398 000		26 185 444		

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

Total allocation from ERDF to the Member State/region: **1 745 168 978 eurot**

Total allocation from Cohesion Fund to the Member State/region: **997 842 596 eurot**

Category of intervention	Allocation to measures relevant for Natura 2000		Current spending on measures relevant for Natura 2000 2014 - 2017		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	53 245 074	9 396 190	14 781 583	2 608 515	Restoration of protected habitats, investments in seminatural grassland management, investments in protected areas and visitor infrastructure management, Ex-situ species conservation investments, restoring landscape values, inventories, ecosystem services
86 Protection, restoration and sustainable use of Natura 2000					
Other categories					
Subtotal	53 245 074	9 396 190	14 781 583	2 608 515	
TOTAL	62 641 264		17 390 098		

D.3 European Maritime and Fisheries Fund (EMFF)

Total allocation from the EMFF to the Member State: **100 970 418 euros**

Measure	Allocation to measures relevant for Natura 2000*		Current spending on measures relevant for Natura 2000 2014 -2017		Comments (relevance, experience to-date, challenges for the next period)
	EU	National	EU	National	
Support for improvement of fishing gear	3 417 485	1 139 162	1 826 612	608 871	Support for seal-proof fishing gear and seal pingers
Support for protection and restoration of marine biodiversity and ecosystem services	2 115 000	705 000	757 015	252 338	Improvement of conditions for fish spawning sites and necessary studies preceding the actions
Subtotal	5 532 485	1 844 162	2 583 627	861 209	
TOTAL	7 376 647		3 444 836		

* The measures given in the table are also used for purposes other than meeting the objectives of Natura 2000 network

D.4 LIFE Programme

Type of project or financing instrument	Current allocation to measures relevant for Natura 2000 2014 - 2017		Comments (number of projects, relevance, experience to-date, challenges for the next period)
	EU	National	
Traditional projects	5 504 603	2 163 783	Total 6 projects (3 as applicant, 3 as beneficiary)
Integrated projects	-	-	
Others (NCFE etc.)	-	-	
Subtotal	5 504 603	2 163 783	
TOTAL	7 668 386		

D.5 Other EU funds, including Interreg:

Total EU co-funding (2014 – 2017) allocated from other EU programmes for the implementation of EU nature policy and associated green infrastructure in the Member State/region: **2 379 460 eurot**

Total national/regional funding (2014 – 2017) allocated for the co-funding of these measures: **419 905 eurot**

2014 – 2017 INTERREG 1 053 620 euros

2009 – 2014 EEA Grants 1 325 840 euros
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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: **51 153 240 euros**

2014 – 2017

State budget 29 427 480 euros

Environmental Investment Centre (nature conservation sub-programme of environmental program) 18 960 760 euros
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State Forest Management Centre 2 765 000 eur
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D. 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: 01/10/2018)

Natura 2000 sites are protected nationally by the Nature Conservation Act as protected areas, limited-conservation areas, species' protection sites or individual protected natural objects. The sites have protection regime and most of the sites have site-specific protection rules. Additionally, there are management plans for the sites that need active conservation measures. General conservation objectives are determined in the act by which the site was taken under protection. The objectives are specified in management plans, where the quantitative and qualitative conservation objectives are determined. National conservation objectives are determined in the national action plans for protected species and management plans for habitats. The acts for protected sites are updated to ensure they meet the ecological demands of the habitats and species that are the conservation objectives of that act. Management plans are usually drawn up for 10 years and therefore require periodic updates. Nation-wide action plans are drawn up for 34 species of Habitats Directive (draft action plans are prepared for 53 species) and for 17 Bird Directive Annex I species (draft action plans are prepared for 17 species). Habitat based management plans are compiled for semi-natural grasslands and protected mire habitats. In addition, there is a plan to change the environmental impact assessment system in a way that it takes impacts on ecosystem services also into account.

Sites of Community Importance (SCIs) under the EU Habitats Directive	Number of sites	Number of sites with:		
		legal site designation (SAC or equivalent)	specific site level conservation objectives	specific site-level conservation measures
Estonia	541	541	541	541 (management plans for 354 sites covering 86% of the area)
Total				

Special Protection Areas (SPAs) under the EU Birds Directive	Number of sites	Number of sites with:		
		legal site designation (SAC or equivalent)	specific site level conservation objectives	specific site-level conservation measures
Estonia	66	66	66	66 (management plans for 47 sites, covering 69% of the area)
Total				

Further measures needed

Protected area connectivity and functionality analysis (including marine areas), establishment of new protected areas if needed

Updating protection regime (protection rules)

Compiling and updating management plans

Adaptive implementation of management plans incl. actionable plans (activities part of the plans that are regularly updated), locality and area based list of measures in databases

Compiling and updating species protection and management action plans (incl. actionable plans)

Compiling action plans for protected habitats (wet forests, dry forests, rocky habitats, rivers, lakes, dunes, coastal habitats, marine habitats) and updating plans for semi-natural grasslands (including management plans of specific grassland types) and protected mire habitats

Improving the managing of value conflicts and and mitigating their effects

Taking into account ecosystem services in environmental impact assessment process – compiling guidelines and organizing workshops

Prioritization of measures to be implemented during the next MFF period

All listed measures are priority measures

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
1. Protected area connectivity and functionality analysis	One-off	20 000	LIFE
2. Updating protection regime (incl protection rules)	One-off	43 000	-
3. Compiling and updating management plans	One-off	76 500	LIFE, ERDF/CF
4. Compiling and updating species action plans (incl. actionable plans)	One-off	64 000	LIFE, ERDF/CF
5. Adaptive implementation of management plans	One-off	100 000	LIFE, ERDF/CF
6. Compiling and updating action plans for protected habitats	One-off	70 000	LIFE, ERDF/CF
7. Improving the managing of value conflicts and and mitigating their effects	One-off	20 000	LIFE
8. Taking into account ecosystem services in environmental impact assessment process – compiling guidelines and organizing workshops	One-off	14 000	ERDF/CF

* indicate whether the measure is recurring or one-off

Expected results

The conservation objectives of the protection rules of the Natura 2000 network sites meet the ecological demands of protected species and habitats. There are updated management plans for the areas that require active conservation measures. There are updated nation-wide plans for Habitats and Birds Directives species and habitat groups where national conservation objectives, as well as activities and priorities to achieve them, are determined. The location based actionable plans are drawn up where detailed and concrete actions are given to achieve the conservation objectives.

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

Natura 2000 sites are protected nationally by the Nature Conservation Act as protected areas, limited-conservation areas, species' protection sites or individual protected natural objects. The manager of these areas is Environmental Board, who: decides the granting of a permit for the use of the environment determined by the Nature Conservation Act and the protection rules, and establishes the conditions of the use of the environment; participates in the strategic environmental assessment of plans liable to affect the protected natural object, participates in the proceedings of the environmental impact assessment of a planned activity, and establishes conditions for the planned activity or the plan liable to affect the protected natural object; organizes the activities arising from the protection rules or management plan; monitors the compliance with the requirements provided by the Nature Conservation Act and the protection rules, and as of 2019, exercises also state supervision. State Forest Management Centre is organizing practical nature conservation works on state land and visits to protected natural objects. The Estonian Environment Agency organises and conducts biodiversity monitoring and applied research for nature conservation.

The landowners, local governments and other stakeholders of Natura 2000 sites are involved in the process of updating the site protection rules, management plan compilation or update, as well as in nature conservation works and monitoring. Different thematic info days and workshops are organized for stakeholders. Information is shared by web-pages and social media.

Further measures needed

Better involvement of local communities in nature conservation activities (using innovative measures), including implementing the results of studies and the experience of the pilot activities of the NaturallyEst-LIFE study "Main conclusions of focus group interviews with habitants and stakeholders on Natura 2000 sites"

Developing information systems, incl.:

- creation of nature protection data system that connects monitoring and conservation efficiency info, different permits and approvals and spatial planning data;
- creation of inter-agency data exchange and management tool with public-oriented feature;
- granting the availability of conservation management recommendations to the landowners and other stakeholders

Organizing data management

Maintenance and development of Nature Web

Maintenance and development of the Estonian research infrastructures roadmap „Natural history archives and information network“ (NATARC)

Promoting cooperation for biodiversity conservation (incl. local governments, defence forces, business sector)

Improvement of nature communication e.g. more effective involvement of so-called "face of protected areas" - an outspoken person of influence in protected areas with large local communities, using the opportunities of crossmedia to promote the nature conservation ideas and messages (incl. youtubers, Instagram, snapchats), organizing study tours, excursions for young people, children and other target groups

Increasing capacity (cooperation and performance) of state administration (at least 250 officials), incl. workshops, trainings, guidelines

Prioritization of measures to be implemented during the next MFF period

All the above named measures are priority measures

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
1. Better involvement of local communities in nature conservation	One-off	45 000	LIFE
2. Development of information systems	One-off	250 000	LIFE, CF/ERDF
3. Organizing data management	One-off	43 000	CF/ERDF
4. Maintenance and development of Nature Web	One-off	90 000	LIFE, CF/ERDF
5. Maintenance and development of the Estonian research infrastructures roadmap „Natural history archives and information network“ (NATARC)	One-off	100 000	LIFE, CF/ERDF
6. Promoting cooperation for biodiversity conservation	One-off	17 0000	LIFE
7. Improvement of nature communication	One-off	17 000	LIFE
8. Increasing capacity (cooperation and performance) of administration	One-off	12 000	LIFE

* indicate whether the measure is recurring or one-off

Expected results

Local communities and other stakeholders are actively involved in nature conservation processes. Info on protected areas, their boundaries and restrictions, as well as aspects that threaten biodiversity (e.g. alien species.) is available. The efficiency and expertise of officials have improved as well as information exchange between authorities (and public sector).

E.1.3. Monitoring and reporting

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

National environmental monitoring (status monitoring) is organized by Environment Agency. One sub-programme of that is biodiversity (habitats and species) and landscape monitoring. Marine and fresh-water species (incl NIS) are monitored in relevant sub-programs. In addition, there is a need to develop the assessment (monitoring) of the efficiency of conservation measures.

Ministry of Environment is responsible for the Birds and Habitats Directives reporting. The report is compiled by Environment Agency in cooperation with Ministry of the Environment and Environmental Board with involvement of different habitats and species experts and scientists.

Further measures needed

Biodiversity monitoring, including development of remote sensing methodologies and wider application of statistical and dynamical models (incl. for better reporting and automation of data processing)

Complex analyses of the existing monitoring data (biodiversity, water, air etc.). Analyses and implementation of possibilities of ecosystem approach

Carrying out biodiversity status monitoring and data analysis, incl. analysis of data collected during more than one-year monitoring period

Developing and implementing protected areas' visitors monitoring

Assessment of effectiveness of conservation measures (METT and other internationally used methodologies)/ development and systematic implementation of monitoring of effectiveness of applied conservation measures, incl. monitoring of the effectiveness of habitat restoration, monitoring the impact of the conservation methods on specific species/habitats

Gathering data into the same info field/database for organizing result oriented monitoring. Developing cost-effective result oriented monitoring methodologies.

Effectiveness assessment of alien species eradication, early detection of new alien species and rapid response to them

Assessment of conservation measures for climate change mitigation (incl. restoration of mires and other habitats, management of habitats)

Development of criteria for assessing the status of threatened habitats and species.

Making the results of reporting, monitoring and conservation effectiveness available, enhancing communication, incl. printed materials

Developing a roadmap that promotes voluntary (i.e. citizen) monitoring, incl. creating and developing smart applications and database outputs (such as database for nature observation) that support volunteer monitoring (game, birdwatching, nest maps, distribution maps), and developing cross-usage of them

Developing data tools for biodiversity monitoring and inventory, including aggregation and cross-usage of data from different databases, and analysis tools for automated analysis

Improving the availability of monitoring data, consolidating and storing source data and analysis models (scripts)

Prioritization of measures to be implemented during the next MFF period

All the above named measures are priority measures

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
1. Developing biodiversity monitoring methodologies	recurring	100 000	ERDF/CF, LIFE
2. Biodiversity monitoring	recurring	1 000 000	-
3. Developing and implementing protected areas' visitors monitoring	recurring	50 000	ERDF/CF, LIFE
4. Assessment of conservation measures' effectiveness	recurring	200 000	ERDF/CF, LIFE
5. Effectiveness assessment of alien species management	recurring	15 000	ERDF/CF, LIFE
6. Assessment of conservation measures for climate change mitigation	one-off	29 000	ERDF/CF, LIFE

7. Development of criteria for assessing the status of protected habitats and species	one-off	18 500	LIFE
8. Publishing the results of reporting, monitoring and conservation effectiveness	recurring	100 000	ERDF/CF, LIFE
9. Developing a roadmap that promotes voluntary monitoring	recurring	50 000	ERDF/CF, LIFE
10. Developing monitoring tools	one-off	72 000	ERDF/CF, LIFE
11. Improving the availability of monitoring data	recurring	50 000	ERDF/CF, LIFE

* indicate whether the measure is recurring or one-off

Expected results

The necessary data required for Habitat and Bird Directives reporting come from the national monitoring program. National monitoring programs are cost-effective and give the necessary input. More and more remote sensing methods are being developed and implemented as well as voluntary monitoring, and the monitoring of effectiveness of conservation measures. By using advanced models and assessment tools the data coverage and confidence of status assessments (of threatened species and habitats) will increase.

E.1.4. Remaining knowledge gaps and research needs

Current status

Inventories are partly outdated, the status of some species is unknown, marine habitats inventories have been done in limited areas. Different activities need to be undertaken for mapping and assessment of ecosystem services as the nation wide MAES process is just starting and the field is constantly developing in the EU and elsewhere. In the beginning of 2018 brainstorming took place with the participation of scientists and nature conservation officials to identify the knowledge gaps and most important research needs. During that meeting further needs for studies were identified.

Further measures needed

Most important studies, incl.:

The impacts of forestry activities on biodiversity at landscape scale: which landscapes are sustainable; impacts of the size and position of clear-cut patches on biodiversity, modelling the effects of different forest management scenarios on forest biodiversity

Location and cumulative impact of major barriers to movement and migration of species (roads, power lines and other infrastructure, state border), an analysis at national scale

Impact of agricultural support schemes on biodiversity

Developing biodiversity enhancing agricultural measures (incl. farmland birds, pollinators)

Analysis of ecological functioning of semi-natural grasslands: threshold levels of area size for grasslands and spatial distribution to ensure habitat connectivity and the conservation of species associated with these habitats

Analysis of the effectiveness of management support requirements for semi-natural grasslands, assessment of management techniques in different habitat types (incl. shredding of vegetation) and updating of management recommendations

Forest conservation measures in limited management zones and limited conservation areas

Analysis of green network structure for achieving favourable conservation status of species and habitats (incl. distribution corridors and indicator species)

Analyses of spatial connectivity of old-growth forest and other habitats suitable for its biota (old-growth forests connectivity analysis)

Developing climate change mitigation measures for endangered species

Assessing the impact of underground mines on nature values

Assessment of drainage effects on nature values of wetlands and grasslands taking into account the climate change impact and developing mitigation measures and planning their implementation

Comparative analysis of the effects of different restoration techniques for improving the status of species and habitat types

Studies on determining the viable population size and spatial connectivity of endangered species

Defining the criteria for the selection of key species describing the condition of forests and linking the status of these key species with the criteria of desired quality and connectivity of forests (protected forests + managed forests)

Modelling the influence of different forestry practice scenarios to forest biodiversity

Analysis of biodiversity preservation options, management change possibilities, and gaps of biodiversity conservation

Establishing the measures for achieving the common goals of nature conservation and climate change mitigation

Mapping less known biodiversity along with taxonomical updates

Testing establishment of ecosystem service accounts in environmental policy

Assessment of the impact of marine litter (incl. micro- and nanoplast) on protected natural values and species

Studies of marine biodiversity (incl. studies on grey seals habitat using telemetry, studies on migratory birds and bats)

Telemetry studies on endangered species (incl. seabirds)

Studies on biodiversity of cliffs and rocky slopes

Development of conservation planning models (incl. species distribution models) and evaluation of their application possibilities

Creating a Red List of habitat types taking into account the climate change

Ongoing updating the Red List of Threatened Species and continuing assessment of the status of the species

Developing methods to control and eradicate invasive alien species (e.g. invasive alien species of the EU importance, *Batrachochytrium dendrobatidis*)

Establishing methods for assessment and mapping the cultural services of the ecosystem, incl. e.g. study on nature tourism potential

Analysis of the use of ecosystem services

Developing the assessment and mapping methodologies for the ecosystems and their services that have not yet been dealt before; their assessment and mapping

The effects of pesticides and pharmaceuticals on non-target organisms in agricultural habitats.

Nature tourism's impact on conservation objectives and biodiversity

Methodologies for recovering the areas under high tourism pressure

Gathering the results of various biodiversity studies into the same information platform. Communicating research results to users (incl. officials)

Necessary inventories:

Species inventories

Habitats inventories

Prioritization of measures to be implemented during the next MFF period

All the above named measures are priority measures

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
1. Different studies (one study on average ca 110 000 euros)	One-off	500 000	Horizon Europa, LIFE, ERDF/CF, EMFF
2. IT solutions for managing and communicating research outcomes	One-off	215 000	
3. Inventories, incl:	One-off		LIFE, ERDF/CF, EMFF
Counts of flying seabirds		70 000	
Terrestrial habitat inventories		200 000	
Marine habitat inventories		200 000	
Species inventories		400 000	
4. Activities for mapping and assessment of ecosystem services	One-off	17 000	ERDF/CF

* indicate whether the measure is recurring or one-off

Expected results

Studies have been carried out to implement the conservation objectives more efficiently. There is up-to-date data on the species and habitats distribution and status. Knowledge based decisions help to ensure optimal way to achieve conservation objectives.

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

Current status

Reconstruction of visitor infrastructure on protected areas has been carried out from the funds of ERDF in 2007-2013 as well as from the CF in 2014-2020. There is a need for a nationwide visitor's management plan, which would include State Forest Management Centre managed and other visitor infrastructure objects in the protected areas, as well as the needs for a future visitor's management based on natural values. Some visitor centres in protected areas are outdated and their exposition needs renewing. In November 2018, a new national park - Alutaguse National Park – was established based on existing protected areas (all belong to Natura 2000 network). Its visitor infrastructure needs to be developed and the visitor centre needs expanding. The Nature Conservation Month is celebrated every year in May, where a life's work prize on nature conservation (Kumari Award) is given (includes nature conservation golden pin). In addition, best nature conservationists are awarded with nature conservation pins and youth pins are given to the best young nature conservationists. In addition, Estonian Nature Day is celebrated in August. Each year mammal, bird, butterfly, moss, orchid, tree, soil, fungus and fish of the year are selected. In 2018 wolf was chosen as the national animal of Estonia. Nature conservation information is shared through websites, social media and regular media. There are workshops, study days, excursions, voluntary nature conservation camps being organized. Voluntary monitoring is expanding.

Further measures needed

Developing a visitor's management plan to preserve natural values

Organizing natural value-based visits to the nature

Reconstruction and maintenance of visitor's infrastructure

Maintenance of markings and direction signs of protected areas in the nature

Developing visitor's centres and expositions, incl. in Alutaguse National Park

Enhancing cooperation between nature tourism companies (data exchange, training, route proposals)

Development of IT solutions, smart applications, websites

Compilation of printed as well as on-line materials, books and films about protected areas

Training and involvement of volunteers, incl. organizing volunteer conservation camps and biodiversity data collection campaigns

General awareness raising and behavioural change of citizens

Promoting engagement of specific stakeholder groups (incl. based on language, age groups, and people with special needs)

Organizing campaigns on biodiversity conservation (incl. helping amphibians to cross the roads during spring migrations, management and restoration of habitats, eradication of alien species) and explaining ecosystem functioning principles

Preparation of guidelines to reduce negative impact of human activities on biodiversity (incl. bats and reconstruction of old buildings, restoration of water bodies, urban nature, agriculture and forestry)

Prioritization of measures to be implemented during the next MFF period

All the above listed measures are priority measures

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
1. Developing a visitor's management plan to preserve natural values	One-off	4000	ERDF/CF, LIFE
2. Organizing natural value-based visits in the nature	One-off	7500	LIFE
3. Reconstruction of visitor's infrastructure	One-off	1 000 000	ERDF/CF, LIFE
4. Maintenance of marking and direction signs of protected areas in the nature	One-off	70 000	ERDF/CF, LIFE
5. Developing of visitor's centers and expositions incl Alutaguse National Park	One-off	500 000	ERDF/CF, LIFE
6. Enhancing cooperation between nature tourism companies	One-off	9400	LIFE
7. Development of IT solutions, smart applications, websites	One-off	100 000	ERDF/CF, LIFE
9. Compilation of information materials	One-off	10 000	LIFE
9. Training and involvement of volunteers, incl. organizing volunteer conservation camps	One-off	10 000	LIFE
10. General awareness raising and behavioral change	One-off	12 000	LIFE
11. Promoting engagement of specific stakeholder groups (incl. based on language, age groups, people with special needs)	One-off	8700	LIFE
12. Organizing campaigns biodiversity conservation, explaining ecosystem functioning principles	One-off	8000	LIFE
13. Preparation of guidelines to reduce the negative impact of human activities on biodiversity	One-off	7500	LIFE

* indicate whether the measure is recurring or one-off

Expected results

The awareness of wider public and landowners has increased. Nature tourism on protected areas does not damage natural values while being an important source of income for the sector and for the local community. Voluntary monitoring has become significant source for gaining information about biodiversity values.

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

Nature Conservation Development Plan and Nature Conservation Action Plan, report of implementation Nature Conservation Development Plan: <http://www.envir.ee/et/looduskaitse#Arengukava>

Website of the Ministry of the Environment: <http://www.envir.ee/et/looduskaitse>

Website of the Environmental Board: <https://www.keskkonnaamet.ee/et/>

Website of the Environment Agency: <https://www.keskkonnaagentuur.ee/>

Website of State Forest Management Center: <https://rmk.ee/>

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

E.2.1. Marine and coastal waters

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

The status of marine habitats (1110, 1130, 1140, 1150, 1160, 1170) has been assessed as favourable. The number of majority of bird species nesting on sea islands has increased, especially the fish-eating species. The decline of bottom feeding seabirds has stopped and stabilized on low level, however the population of many species is still declining (*Melanitta fusca*, *Somateria mollissima*, *Mergus merganser*). The overall conservation status of bottom feeding birds can still be considered bad. The status of *Phoca hispida botnica* has been assessed as unfavourable bad, the status of *Halichoerus grypus* as favourable. The most important known localities of marine habitats, seal and seabird habitats are protected under the Natura 2000 network. Around 60% of Estonian marine area is not yet covered by habitats inventories (not mapped) and it is possible that Annex I habitats can be found there. Pressures and threats continue to be eutrophication, physical modifications of habitats and disturbances (dredging, dumping, mining, construction), marine pollution, bycatch and invasive alien species. Decline of *Phoca hispida botnica* is caused by global warming related changes of ice cover on Baltic Sea.

Measures needed to maintain or restore favourable conservation status

Improvement of status of marine habitats (quality, structure and function) through the restoration of marine key species habitats (e.g. *Zostera L*, *Fucus vesiculosus*, *Furcellaria lumbricalis*). Development, testing and implementation of methodology. Improvement of species habitats (incl. *Botaurus*) in the reedbeds of inner bays

Kasari delta restoration works

Developing measures to diminish waterbirds and seals being caught in fishing gears (especially in gillnets and trapnets)

Using algae and shellfish in aquaculture in affected protected areas (potential problem areas in Pärnu Bay, Haapsalu Bay, and Tallinn Bay) to lower eutrophication pressure. Lowering the impact of marine pollution

Improving marine pollution response capacity for wildlife rescue work and facilities (wildlife rehabilitation centre)

Marine spatial planning to determine the principles and directions of the balanced spatial development of sea area, including the the measures required for the protection of marine environment.

Prioritization of measures to be implemented during the next MFF period

All the above listed measures are priority measures

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
1. Improvement of status of marine habitats	One-off	5000 ha	29 000	LIFE, ERDF/CF
2. Improvement of species habitats (incl. <i>Botaurus</i>) in the reedbeds of inner bays	One-off	500 ha	17 500	LIFE, ERDF/CF
3. Kasari delta restoration works	One-off	1000 ha	350 000	LIFE, ERDF/CF
4. Developing measures to diminish <i>Polysticta stelleri</i> , other waterbirds and seals being caught in fishing gears (especially in gillnets and trapnets)	One-off		25 000	LIFE, EMFF
5. Lowering eutrophication pressure and marine pollution	One-off		35 000	EMFF, ERDF/CF
6. Improving marine pollution response capacity for wildlife rescue work and facilities (wildlife rehabilitation centre)	One-off		3000	ERDF/CF

- 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
1. Marine spatial planning, updating plans	One-off			

* indicate whether the measure is recurring or one-off

Expected results for targeted species and habitat types

The status of marine habitats and species has improved. Eutrophication and marine pollution have reduced.

Expected results: other benefits

The good status of marine habitats ensures good status of fish stocks and good water quality. The quantity and quality of ecosystem services improves. The pressure of eutrophication on protected natural values in selected protected areas has decreased.

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

Heaths (4030) status has been assessed as favorable. Important localities are included in Natura 2000 network, but they need to be kept open. The restoration works have been taken place to small extent from the ERDF funds during 2007-2013. The main threat for the heaths is overgrowth. The status of *Juniperus* habitat (5130) has been assessed as favourable. This is a transitional habitat, which requires certain interventions to maintain the habitat. The habitat type does not belong to the first priority habitats list as there are no habitat specific species in *Juniperus* habitat. Most important localities are protected, biggest pressure and threat is overgrowth.

Measures needed to maintain or restore favourable conservation status

Maintaining management of heaths

Maintaining and restoring *Juniperus* habitats

Updating different levels of spatial planning, incl. green network to ensure the habitats and spreading corridors for species and full coherence of Natura 2000 network

Prioritization of measures to be implemented during the next MFF period

All the above listed measures are priority measures

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
1. Heaths (4030) maintaining management (3500 eur/ha)	One-off	200 ha	100 000	ERDF/CF, LIFE
2. Methodology for preserving the heaths (4030) (periodical burning, milling)	One-off		1500	LIFE
3. Restoring <i>Juniperus</i> habitats (5130) (2000 eur/ha)	One-off	200 ha	57 143	ERDF/CF
4. Maintaining <i>Juniperus</i> habitats (5130) (250 eur/ha)	Recurring	500 ha	125 000	ERDF

- 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
Updating different levels of spatial planning, e.g. green network				

* indicate whether the measure is recurring or one-off

Expected results for targeted species and habitat types

The status of species (*Maculinea arion*, *Lacerta agilis*) typical to heaths has improved. *Juniperus* habitats continue to be in favourable status.

Expected results: other benefits

Improving the quantity and quality of ecosystem services

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

The status of most of mire habitats (7110, 7140, 7160, 7210, 7220) has been assessed as insufficient, the status of 7230 as bad and decreasing. The status of birds in mire habitats can be considered good, however there are problems with several birds' species which are common to wetland and open mire areas. Conservation measures taken include placing mire areas under protection and restoring their hydrological regime. The restoration of mire habitats has been supported from ERDF 2007-2013, from CF 2014-2020 and from two LIFE projects. An action plan for protected mire habitats has been compiled, including a list of mires that require restoration. The main pressures and threats are draining of forest and agricultural land (effects occur later in time); mining activities that affect the water regime of mire habitats (mineral resources for construction, oil shale) and other developments. Restoration with unsuitable restoration techniques may also be a threat to species-rich fens (minerotrophic mires).

Measures needed to maintain or restore favourable conservation status

Restoration of fens (minerotrophic mires) 7160, 7210, 7220, 7230 – 2500 ha

Restoration of transitional mires (mixotrophic mires) 7140 – 2500 ha

Restoration of raised bogs' border areas 7110 – 5000 ha

Updating different levels of spatial planning, incl. green network to ensure the habitats and spreading corridors for species and full coherence of Natura 2000 network

Prioritization of measures to be implemented during the next MFF period

All the above listed measures are priority measures

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
1. Restoration of mire habitats	One-off	10 000 ha	1 000 000	ERDF/CF, LIFE

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

Name and short description of the measures	Type of measure*	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Possible EU co-funding source
1. Updating different levels of spatial planning, e.g. green network				

* indicate whether the measure is recurring or one-off

Expected results for targeted species and habitat types

The status of different mire habitats and species is improving.

Expected results: other benefits

Restoring mire habitats will contribute to climate change mitigation, helps to regain the naturalness of water bodies associated with mires, reduces the loss of peat as mineral resource and reduces the risk of fire. The quantity and quality of ecosystem services also improves. It helps to achieve the climate policy objectives.

E.2.4. Grasslands

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

The status of semi-natural grasslands of higher conservation value (1630, 6210, 6270, 6280, 6450, 9070) is assessed to be unfavourable-inadequate, the most species rich semi-natural grassland 6530 is assessed to be unfavourable-bad. The condition of grassland birds has improved, but has not reached a good level. The status of grassland species (other than birds) is also assessed to be unfavourable inadequate (*Ligularia sibirica*) or even unfavourable-bad (*Bufo calamita*). Conservation measures, which include protecting, restoring and management of habitats have been put in place. The applied support for the management of semi-natural grasslands from the Rural Development Plan in 2020 was on ~ 34,000 ha (plus 4000 ha were managed using single area payment), and the area under restoration is ~ 3200 ha. Restoration is supported from Environmental Investment Center's Environmental Program, LIFE program and CF. Investments required for the management of semi-natural grasslands are also supported from the CF. According to the Nature Conservation Development Plan, it is estimated that 60 000 ha of different grassland communities need to be preserved in protected areas of Estonia. The objective of the Nature Conservation Development Plan is to have 45,000 ha of semi-natural grasslands under active management by 2020. According to preliminary estimates, the level of management will reach 40,000 ha by 2020. The new Nature Conservation Development Plan as well as the new action plan for semi-natural grasslands is under preparation. During the preparation of these plans the analyze will be made to estimate how many hectares of each semi-natural grasslands type should be additionally restored taking into account different aspects e.g. the geographical coverage. Pressures and threats in protected areas include non-management of sites leading to overgrowth of shrubs and reed. It is necessary to extend the areas that are already managed in order to restore their species-specific composition. Cultivation and fertilization are threats outside the protected areas. Species of semi-natural grasslands (incl. ground-nesting birds, amphibians) are threatened by predation. One of the threats is invasive alien species.

Measures needed to maintain or restore favourable conservation status

Improving the support scheme for the management of semi-natural grasslands

Development of semi-natural grassland management scheme for the grasslands outside the protected areas

Management of semi-natural grasslands, and improvement of management quality to achieve by 2028 that the area in good condition of the semi-natural grasslands will be as follows:

1630	14 000 ha
6210	3 400 ha
6270	2 700 ha
6280	8 000 ha
6410	800 ha
6430	1 400 ha
6450	11 000 ha
6510	3 000 ha
6530	2 000 ha
7230	2 200 ha
9070	1 500 ha
Total area:	50 000 ha

Implementation of species conservation measures, and taking into account species habitat requirements during the management and restoration of sites

Restoration of semi-natural grasslands, and improvement of restoration techniques

Making the restoration and management schemes of semi-natural grasslands more applicant-friendly

Developing a recognition scheme for managers of semi-natural grasslands

Increasing the sustainability of semi-natural grassland management and creating added value from its management

Creating additional opportunities and making investments to use the grass cut from the meadows

Investments for the management of semi-natural grasslands (support for special equipment (e.g. special machinery on wooded and flooded meadows))

Area based solutions for water regime regulation, restoration of natural water regime in some sites of flooded meadows and coastal meadows

Developing holistic solutions for the management of problematic sites (incl. islets, small islands, flooded meadows)

Creating a counseling system for management of semi-natural grasslands, incl. finding new managers, raising landowners' awareness, to achieve nature conservation objectives

Integration of semi-natural grasslands into the agricultural system, incl. development of a mechanism for addressing all semi-natural grasslands as eligible for the single area payment and extending the definition of permanent grassland (incl. environmentally sensitive grassland) to include managed semi-natural grasslands among them

Updating different levels of spatial planning, e.g. green network to ensure the habitats and spreading corridors for species and full coherence of Natura 2000 network

Prioritization of measures to be implemented during the next MFF period

All the above listed measures are priority measures

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
1. Improving the support scheme for the management of semi-natural grasslands	One-off		3500	LIFE
2. Management of semi-natural grasslands, species conservation measures	Recurring	50 000 ha	7 900 000	EAFRD
3. Restoration of semi-natural grasslands (average restoration cost 2500 eur)	One-off	10 000 ha	3 570 000	ERDF/CF, LIFE
4. Making the restoration and management schemes of semi-natural grasslands more applicant-friendly	One-off		100 000	LIFE
5. Developing a recognition scheme for managers of semi-natural grasslands	One-off		10 000	LIFE
6. Increasing the sustainability of semi-natural grassland management, creating added value from its management	One-off		50 000	LIFE
7. Creating additional opportunities to use the cut grass from the meadows	One-off		1 000 000	LIFE
8. Investments for the management of semi-natural grasslands	One-off		1 500 000	ERDF/CF, LIFE
9. Restoration of natural water regime in certain sites of flooded meadows and coastal meadows	One-off		100 000	ERDF/CF, LIFE
10. Developing holistic solutions for the management of problematic sites	One-off	2 sites	1 400 000	LIFE
11. Creating a counseling system for management of semi-natural grasslands	One-off		3000	LIFE, EAFRD
12. Integration of semi-natural grasslands into the agricultural system	One-off		-	

- 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
1. Updating different levels of spatial planning, e.g. green network	One-off			-
2. Management of grasslands	Recurring	5 000 ha	600 000	EAGF, EAFRD
3. Designating all the semi-natural grasslands as permanent grasslands	One-off		-	-

* indicate whether the measure is recurring or one-off

Expected results for targeted species and habitat types

Improvement of the status of protected habitat types and species

Expected results: other benefits

Promoting regional development, creating additional jobs in rural areas, producing ecological agricultural products, increasing opportunities for nature tourism, improving the quantity and quality of ecosystem services.

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

The overall intensification of agriculture and rise in environmental pressure are indicated by the increased use of plant protection products and the use of mineral fertilizers containing nitrogen and phosphorus, concentration of livestock farms and increased share of liquid manure.

Estonia is characterized by diverse and regionally different agricultural landscapes and by relatively high biodiversity. The amount of biodiversity-enhancing landscape features is overall satisfactory in the Estonian agricultural landscape. However, in the main agricultural areas, their number is rather small, and the large arable land without adjacent landscape elements significantly reduces biodiversity and the coherence of the surrounding natural areas.

Provided that preservation of agricultural landscape diversity is ensured, implementation of integrated plant protection measures are granted and proper use of plant protection products is followed, the pollinators in Estonia have generally favourable conditions. The bumble bee indicators in arable lands in 2009-2017 were stable and in some cases with a small growing trend. Several factors contributed to that: decrease in the use of plant protection products due to environmental measures, extensive grassland management, crop rotation obligation, increase in *Fabaceae* crops, participation in trainings and increase in landscape elements. On the other hand the pollinator species index characterizing species richness, has a declining trend.

An action plan has been drawn up to mitigate the negative effects of plant protection products. In that plan state describes the measures that promote sustainable use of plant protection products.

Between 1983 and 2018, the Estonian farmland bird index (14 most common breeding birds in the cultivated landscape) has decreased by 50%.

In order to allow nesting of farmland birds, Estonia has established a national time limit for shredding grass from permanent grasslands for applicants for agricultural support scheme. Those who have joined the support scheme for environmentally friendly management and regional soil protection support have the opportunity to leave their permanent grassland uncut or unmanaged for a year to enhance farmland bird populations.

Support for environmentally friendly management covers just under half of the used arable land (45% in 2016). It sets requirements such as crop rotation, *Fabaceae* crops cultivation, soil sampling, compilation of fertilization plans and winter vegetation.

Approximately 1/3 of agricultural land with peat soils is covered by regional soil protection scheme where keeping it as a grassland is supported. In addition, agri-environmental support requirements such as use of certified seeds and glyphosate usage restriction have contributed to the reduction of agricultural pressure. A support measure to reduce nutrient leaching has been implemented in the nitrate sensitive area since 2018.

Measures needed to maintain or restore favourable conservation status

Developing and implementing biodiversity friendly support schemes in agricultural land, incl. measures to improve the status of farmland birds, amphibians and pollinators, incl. restoration compensation of small water bodies, establishment of buffer zone of at least 30 m wide on karst lakes and other water bodies on agricultural land

Diversification of agricultural landscape

Improving soil biodiversity

Developing measures for carbon sequestration in soils, incl. in peat soils as ecosystem service e.g. through extensive paludiculture

Enhancing environmental measures in strategies and development plans

Encouraging the use of environmentally friendly plant protection measures (incl. integrated plant protection) and organic farming

Training agriculture advisors on biodiversity issues

Analysing and implementing the possibilities of renaturation of polder areas located on Natura 2000 bird areas

Updating different levels of spatial planning, incl. green network to ensure the habitats and spreading corridors for species and full coherence of Natura 2000 network

Prioritization of measures to be implemented during the next MFF period

All the above listed measures are priority measures

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
1. Analyzing and implementing the possibilities of renaturation of polder areas located on Natura 2000 bird areas	One-off	1 polder	275 000	LIFE

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

Name and short description of the measures	Type of measure*	Target (Unit & quantity)	Estimated cost in Euros (annualised)	Possible EU co-funding source
1. Updating different levels of spatial planning, e.g. green network	One-off			-
2. Developing biodiversity friendly support schemes in agricultural land	One-off		25 000	LIFE
3. Implementing biodiversity friendly support schemes	Recurring			EAFRD
4. Diversification of agricultural landscape	Recurring			EAFRD
5. Improving soil biodiversity	Recurring			EAFRD
6. Developing measures for carbon sequestration in soils, incl. in peat soils as ecosystem service e.g. through extensive paludiculture	Recurring			EAFRD
7. Enhancing environmental measures requirements	Recurring			EAFRD
8. Encouraging the use of environmentally friendly plant protection measures	Recurring			EAFRD
9. Training agriculture advisors on biodiversity issues	One-off		3000	LIFE

* indicate whether the measure is recurring or one-off

Expected results for targeted species and habitat types

The status of species connected to and affected by agriculture is maintained or improved.

Expected results: other benefits

Improving the quantity and quality of ecosystem services and ecologically produced agricultural products.

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

The status of forest habitats has been assessed largely as inadequate (2180, 9020, 9050, 9060, 91D0, 91F0) or bad (9010, 9080). Only two forest habitat types have favourable status (9180, 91E0). General wild bird index is decreasing (incl. old forest indicator species, and ground nesting birds of peatland forests and swamp forests). In the period 1983–2018, the Estonian Forest Bird Index (25 most common forests hatching birds) 25%, with the decline in the number of wild birds occurring in the latter during, after the turn of the century. For example, the abundance of *Tetrao urogallus* over three generations (19 years) has decreased by an average of 31%. The status of several forest species (other than birds) is also assessed to be unfavourable inadequate (*Boros schneideri*,

Cinna latifolia, *Pulsatilla patens*) or even unfavourable-bad (*Pteromys volans*). Conservation measures include: the establishment of protected areas, leaving certain areas to natural development, habitat restoration, incl. water regime restoration. Private forest owners receive support on Natura 2000 sites as well as on strict conservation zone areas outside of Natura 2000 network. Protected forest land with strict restrictions can be sold to the state. Pressure and risk factors include: logging activities, incl. removal of dead trees, changing of water regime, invasive alien species. The decline in the abundance of *Tetrao urogallus* is caused by predation, degraded habitats and reduced habitat connectivity.

Measures needed to maintain or restore favourable conservation status

Restoring the structure of forest habitat types (incl. formative cutting, imitation of natural disturbances, contributing to regeneration of tree species characteristic to natural forest, especially broad-leaved tree species and common alder and aspen) – 2180, *9010, *9020, 9050, 9060, *9180

Restoring wet forest water regime – *9080, *91D0, *91E0, 91F0, protected drained peatland forest

Improving habitat conditions (incl. connectivity) of forest species (incl. *Tetrao urogallus*, *Pteromys volans*, *Chiroptera species*)

Compensations of income loss for private forest owners in Natura 2000 sites and other protected areas, analysis of current Natura private forest support system, and updating it

Developing support scheme for private forest owners and local governments to carry out forestry works that contribute to nature conservation with an aim to improve the status of forest habitats

Purchasing land with strict conservation restrictions for the state

Updating different levels of spatial planning, incl. green network to ensure the habitats and spreading corridors for species and full coherence of Natura 2000 network

Prioritization of measures to be implemented during the next MFF period

All above listed measures are priority measures

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
1. Restoring the structure of forest habitat types (2180, *9010, *9020, 9050, 9060, *9180)	One-off	2000 ha	45 000	LIFE, ERDF/CF
2. Improving habitat conditions (incl. connectivity) of forest species	One-off	50 000 ha	150 000	LIFE, ERDF/CF
3. Restoring wet forest water regime (*9080, *91D0, *91E0, 91F0, protected drained peatland forest)	One-off	6000 ha	420 000	LIFE, ERDF, CF
4. Compensations of income loss for private forest owners	Recurring	90 000 ha	6 430 000	EAFRD
5. Developing and implementing active forest conservation support scheme	One-off		3000	LIFE
6. Developing and implementing active forest conservation support scheme	Recurring	850 ha	25 000	EAFRD
7. Purchasing land with strict conservation restrictions for the state (average price 4500 eur/ha)	Recurring	1 500 ha	6 750 000	-

- 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
1. Updating different levels of spatial planning, e.g. green network				
2. Improving the state of <i>Tetrao urogallus</i> habitats outside Natura areas	One-off	5000 ha	50 000	ERDF/CF

* indicate whether the measure is recurring or one-off

Expected results for targeted species and habitat types

The status of forest species and habitat types is improving

Expected results: other benefits

Improvement in quantity and quality of ecosystem services (clean air and water, berries, mushrooms and other forest by-products, recreation). Contributes to achieving climate policy goals.

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

The status of rocky slopes (8210, 8220) and coastal terrestrial habitats and dunes (1620, 1640, 2110, 2120, 2130, 2190, 2320) is assessed as favourable, the status of fixed dunes with *Empetrum nigrum*, inland dunes and limestone pavements (2140, 2330, *8240) is inadequate. The status of *Maculinea arion*, *Bufo calamita* and *Lacerta agilis* is assessed to be bad. Conservation measure has been the establishment of protected areas. Threats and pressures include excess vegetation on limestone pavements, impacts of recreational activities in coastal habitats and dunes, natural processes, overgrowth due to extensive afforestation of dunes and inland dunes, succession, invasive alien species.

Measures needed to maintain or restore favourable conservation status

Restoration of dunes and inland dunes (*2140, 2320, 2330), which also improves the status of respective species (e.g. *Maculinea*, *Anthus campestris*, *Lullula arborea*, *Lacerta agilis*, *Bufo calamita*)

Restoration of rocky slopes as species habitats

Analysis to find suitable locations to exhibit rocky slopes (protection of stratotypes)

Updating different levels of spatial planning, incl. green network to ensure the habitats and spreading corridors for species and full coherence of Natura 2000 network

Prioritization of measures to be implemented during the next MFF period

All above listed measures are priority measures

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
1. Restoration of dunes and inland dunes	One-off	350 ha	43 000	LIFE, ERDF/CF
2. Restoration of rocky slopes as species habitats(One-off	3 objects	12 000	LIFE, ERDF/CF
3. Analysis to find suitable locations to exhibit rocky slopes (protection of stratotypes)	One-off		4700	

- 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
1. Updating different levels of spatial planning, e.g. green network				

* indicate whether the measure is recurring or one-off

Expected results for targeted species and habitat types

The status of inland dunes is improving, the status of other habitats has remained favourable. The total area of dunes and inland dunes has increased and the status of the species of these habitats is improving.

Expected results: other benefits

Improving the quantity and quality of ecosystem services

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

The status of rivers (3260), oligotrophic lakes (3110) and oligo to mesotrophic lakes (3130) is considered inadequate. Main pressures and threats are pollution, eutrophication (natural as well as human caused), changes in water regime, and invasive alien species. The status of the bird species connected to lakes is deteriorating. The most outstanding river and lake areas have been taken under protection. Measures taken include restoring river habitats, restoring fish migration routes and restoring spawning grounds. Projects have been funded by the CF, the EMFF and LIFE.

Measures needed to maintain or restore favourable conservation status

Restoration of lake habitats (3110, 3130) and restoration of water levels of historically bird-rich lakes (the ones with lowered water levels)

Restoration of river habitats

Cleaning of karst lakes (*3180) from shrubs, restoration of water regime

Opening fish migration routes, restoring spawning grounds, incl. control of beavers and elimination of their dams

Ex-situ species conservation (e.g. *Mustela lutreola*, *Margaritifera margaritifera*, *Acipenser sturio*, *Astacus astacus*)

Re-introduction and introduction of protected fish species (e.g. *Acipenser sturio*, *Aspius aspius*, *Thymallus thymallus*)

Further development of Põlula Fish Rearing Center - a place where protected and endangered aquatic species populations are reproduced

Prioritization of measures to be implemented during the next MFF period

All above listed measures are priority measures

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
1. Restoration of lake habitats	One-off	2000 ha	75 000	LIFE, ERDF/CF
2. Restoration of river habitats opening fish migration routes, restoring spawning grounds	One-off	8 objects	700 000	LIFE, ERDF/CF, EMFF
3. Cleaning of karst lakes from shrubs, restoration of water regime	One-off	70 ha	27 000	LIFE, ERDF/CF
4. <i>Ex-situ</i> species conservation (e.g. <i>Mustela lutreola</i> , <i>Margaritifera margaritifera</i> , <i>Acipenser sturio</i>)	One-off		85 000	LIFE, ERDF/CF
5. Re-introduction and introduction of protected fish species (e.g. <i>Acipenser sturio</i> , <i>Aspius aspius</i>)	One-off		80 000	LIFE
6. Further development of Põlula Fish Rearing Center - a place where protected and endangered aquatic species populations are reproduced	One-off		1 300 000	LIFE, ERDF/CF

- 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
1. Opening fish migration routes, restoring spawning grounds	One-off		250 000	LIFE, ERDF/CF, EMFF

* indicate whether the measure is recurring or one-off

Expected results for targeted species and habitat types

The status of rivers and lakes and the species that inhabit and depend on them is improving.

Expected results: other benefits

Improvement of quantity and quality of ecosystem services, including increase in fish stocks, improvement of water quality.

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

Caves (8310) are important as wintering areas for bats. The most important areas are protected. Threat factors are unregulated visits to bat hibernation locations. The status of caves is assessed as favorable, the status of bats is mostly assessed as favourable, except the status of *Nyctalus noctula* is inadequate, and the status of *Myotis mystacinus* and *Myotis natterii* is unknown.

Measures needed to maintain or restore favourable conservation status

Investments for managing visits to the bats hibernation locations

Prioritization of measures to be implemented during the next MFF period

All above listed measures are priority measures

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
1. Investments of managing visits to the bats hibernation locations	One-off		28 000	LIFE, ERDF/CF

- 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

* indicate whether the measure is recurring or one-off

Expected results for targeted species and habitat types

The status of bats and other species associated with caves is improving.

Expected results: other benefits

Improving the quantity and quality of ecosystem services.

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

Site management plans <https://www.keskkonnaamet.ee/et/eesmargid-tegevused/kaitse-planeerimine/kaitsekorralduskavade-koostamine/kinnitatus>

Habitat management plans for semi-natural grasslands and for mire habitats

<https://www.envir.ee/et/elupaigatuupide-tegevuskavad>

Species action plans <https://www.envir.ee/et/liigikaitse-tegevuskavad>

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

A total of 26 600 species are known from Estonia but the number may increase to 45 000 as the biota gets studied in more detail. Due to the geographic position of Estonia, many species reach here the limit of their distribution, e.g. a third of vascular plants. In Estonia, there are 99 species listed in the Habitats Directive Annexes. According to the last reporting 54% (53 species) are in a favourable status, 27% (27 species) have an inadequate status and the status of 8% (8 species) has been assessed as bad. In the opinion of experts, the status of several Habitats Directive species (11%, i.e. 11 species) is still unknown in Estonia. For bird species, the reporting was compiled for 266 bird species, including 72 species listed in Annex I of the Birds Directive. According to the results the short-term population trends of the breeding taxa are following: 17% is increasing, 41% stable, 37% decreasing, 2% unknown and long-term population trends of breeding taxa are following: 26% of increasing, 32% stable, 37% decreasing and 2% unknown. The biggest threats to species are the shrinkage of the area of suitable habitats, deterioration of living conditions, and fragmentation, including loss of dispersal routes. Changed land use (e.g. overgrowing of meadows) also reduces the suitability of habitats for many species.

There are ca 1000 alien species currently known in Estonian nature, 75% of which are flowering plants. Most alien species found in the nature are not considered to be harmful to the environment, but about 6.5% of them are invasive, and 7.5% are potentially invasive. The eradication is taking place in Estonia in all known locations of alien *Heracleum* species, and alien crayfish (*Pacifastacus leniusculus* and *Orconectes limosus*) species. Eradications for nature conservation purposes is undertaken in certain areas for *Nyctereutes procyonoides*, *Impatiens glandulifera*, *Rosa rugosa*, *Caragana arborescens* and previously for *Mustela vison*. There are currently 49 species prohibited in the EU by the EU Regulation, and 43 species on the basis of the list of species endangering the natural balance of Estonia (some species overlap between the two lists).

The status of bats is overall considered favourable (the status of *Myotis dasycneme* is inadequate, and the status of *Myotis mystacinus* is unknown), however there are problems with preservation of their hibernation sites.

Due to land use change and extensive land amelioration practices in agricultural and forest areas, many small water bodies have been destroyed, which in turn has led to a deterioration of the status of dependent species (*Bufo viridis*, *Rana arvalis*, *Rana temporaria*, *Stylurus flavipes*)

Threats to species include insufficient coherence of species habitats, loss of biodiversity in cultural landscapes and impacts of densely populated areas.

Measures needed to maintain or restore favourable conservation status

Eradication of invasive species (*Impatiens glandulifera*, *Heracleum mantegazzianum*, *Heracleum sosnowskyi*, *Heracleum persicum*, *Solidago canadensis*, *Solidago gigantea*, *Elodea nuttallii*, *Nyctereutes procyonoides*, *Pacifastacus leniusculus*, *Orconectes limosus*, *Procambarus fallax forma virginalis*, *Perccottus glenii*) and determining and stopping the spread (incl. awareness raising) of pathogen *Batrachochytrium dendrobatidis* (Bd)

Reconstruction of human built hibernation sites of bats and their visitor management

Assessing the impact extent of utility networks (incl. power lines) and infrastructure (incl. animal tunnels, ecoducts) and developing and implementing appropriate measures/guidelines

Increasing biodiversity and reducing conflicts in cultural landscapes and densely populated areas

Compiling and implementing an action plan for pollinators

Reducing the use of plant protection products on the sides of roads and railways; developing and implementing nature friendly measures as an alternative

Reducing negative effects of amelioration (greening agricultural practices)

Restoration of habitats suitable for species of small water bodies (*Bufo viridis*, *Rana arvalis*, *Rana temporaria*, *Stylurus flavipes*) and (re)creating connectivity between them

Controlling predation and problematic individuals from some species (e.g. from *Corvidae*), including at landscape level, to protect the birds nesting in the cavities and on the ground

Improving species protection and habitat connectivity by international cross-border cooperation

Developing and implementing mitigation/compensation measures to maintain the status of the species

Mapping and improving the status of endangered species requiring natural disturbance (incl. species characteristic of fire disturbance)

Rehabilitation of endangered species

Prioritization of measures to be implemented during the next MFF period

All the above listed measures are priority measures

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
1. Eradication of invasive alien species	One-off	3000 ha	700 000	LIFE, ERDF/CF
2. Reconstruction of human built hibernation sites of bats and their visitor management	One-off		100 000	LIFE, ERDF/CF
3. Assessing the impact extent of utility networks (incl. power lines) and infrastructure (incl. animal tunnels, ecoducts) and developing and implementing appropriate measures/guidelines	One-off		650 000	LIFE
4. Increasing biodiversity and reducing conflicts in cultural landscapes and densely populated areas	One-off		79 000	LIFE, ERDF/CF
5. Compiling an action plan for pollinators	One-off	1 plan	10 000	LIFE
6. Restoration of habitats suitable for small water body species	One-off	60 ponds	42 000	LIFE, ERDF/CF
7. Reducing the use of toxic chemicals on the sides of roads and railways	One-off		84 000	LIFE
8. Controlling small predators at landscape level	One-off		10 000	LIFE
9. Rehabilitation of endangered species	One-off		160 000	LIFE, ERDF/CF
10. Improving species protection and habitat connectivity by international cross-border cooperation	One-off		15 000	LIFE, INTERREG

* indicate whether the measure is recurring or one-off

Expected results for targeted species

The spread of alien species is decreasing, better control over incoming species is achieved and prevention measures reduce the amount of incoming species. The status of natural species is improving. The biodiversity of cultivated landscapes is maintained or increased.

Expected results: other benefits

Improving quantity and quality of ecosystem services, incl. benefits to human health and better environmental use possibilities. Building animal tunnels and ecoducts increase road safety.

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

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

According to the Nature Conservation Act, the state is obliged to compensate the damage caused by the species important for nature conservation: grey seals, ringed seals, brown bears, wolves, lynxes, European minks, white-tailed eagles, ospreys and migrating cranes, swans, geese and barnacle geese. The costs of application of measures to prevent damages are partly compensated.

Measures needed

Partially compensated preventive investments (seal and bird-proof fishing gear, predator proof cattle fences, guard dogs, devices to drive off the birds)

Analysis of damage caused by the birds, development and implementation of measures to prevent that damage

Analysis of compensation possibilities of damage caused by other species of conservation importance (*Picinae sp.*, *Lutra lutra*, *Martes martes*, *Canis aureus*)

Compensation for damage caused by the animals important for nature conservation

Prioritization of measures to be implemented during the next MFF period

All the above listed measures are priority measures

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
1. Partially compensating the investments on preventive measures	One-off		30 000	EMFF, EAFRD, ERDF/CF, LIFE
2. Analysis of damage caused by the birds, development of measures to prevent that damage	One-off		25 000	LIFE
3. Implementation of measures to prevent that damage caused by birds	One-off		125 000	ERDF/CF, EAFRD
4. Analysis of compensation possibilities of damage caused by other species of conservation importance (<i>Picinae sp.</i> , <i>Lutra lutra</i> , <i>Martes martes</i> , <i>Canis aureus</i>)	One-off		8600	LIFE
5. Compensation for damage caused by the animals important for nature conservation	Recurring		650 000	-

* indicate whether the measure is recurring or one-off

Expected results for targeted species

Decreased hostility and good status of populations is not threatened. The Estonian strategy and procedures for compensating the damage caused by animals are goal-oriented, sustainable and internationally consistent.

Expected results: other benefits

People's attitude towards nature conservation and protected animal species improves creating trust and feeling of security.

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

<https://www.keskkonnaamet.ee/et/eesmargid-tegevused/liigikaitse/looma-ja-linnukahjud>
<https://www.keskkonnaamet.ee/et/eesmargid-tegevused/liigikaitse/karuputke-torjumine>
<https://www.keskkonnaamet.ee/et/eesmargid-tegevused/liigikaitse/muud-voor-ja-probleemiliigid>
<https://www.keskkonnaamet.ee/et/eesmargid-tegevused/abitud-loomad>

E. Further added values of the prioritized measures

As a result of implementation of measures, the biodiversity status improves beyond the objectives of the Natura 2000 network. Measures contribute to the implementation of Convention on Biological Diversity and to other nature conservation conventions and agreements. Measures help to mitigate and adapt to the impacts of climate change. Maintains the ability to provide multifunctional ecosystem services. Public awareness about the importance of biodiversity for human wellbeing is increasing. Nature tourism opportunities are improving, incl. in Ida-Viru County, where Alutaguse National Park was established in 2018 and where the next steps are to develop a visitor centre and hiking trails. Integration and employment levels in rural areas increase. Jobs

considering sustainable development goals are created (nature tourism, catering and accommodation establishments, small producers, management of semi-natural grasslands, nature conservation workers). People's health improves due to more possibilities to spend time in nature, improves cross-border cooperation. Implementation of the measures will contribute to the achievement of the SDGs, in particular Objectives 15, 14 and 13 as well as Objectives 2, 3 and 8.

References

<https://envir.ee/et/looduskaitse#Konventsioonid>

<https://envir.ee/et/EST-tegevused>

<https://envir.ee/et/looduse-huved-ehk-okosusteemiteenused>

<https://www.envir.ee/et/eesmargid-tegevused/keskkonnakorraldus/saastev-areng>